A CALL FOR METHODOLOGICAL PLURALISM IN BUILT ENVIRONMENT RESEARCH

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Abstract: As management-oriented research in the built environment has grown and matured over last thirty years, it would be reasonable to expect that the methodologies employed by researchers will have diversified to reflect the multiple traditions and perspectives from which researchers now draw. However, an analysis of the methods used reveals that the ongoing maturation of the discipline has seemingly done little to promote either methodological pluralism or a diversity in the methods employed by management researchers. This paper examines the impact that methodological uniformity and a lack of adventure in interpretative research design is likely to have. It is argued that those engaged in social science research in the built environment could usefully embrace the emerging principles of multi-strategy or ‘multimethodology’ research design in order to better understand the complex network of relationships which shape industry practice. This radical perspective eschews traditional dualisms by positing the view that no single methodology can ever provide a complete picture of the complexities of projects and organisations. However, researchers must show courage and adventure if they are to challenge the paradigmatic intransigence which is seemingly so pervasive within the built environment research community.

Keywords: epistemology, management, methodology, methods, paradigm.

1. INTRODUCTION

The past thirty years have witnessed an exponential growth in what can be broadly termed management research for the built environment, a trend which has inevitably led to a growth in the number of researchers engaging in social research. A fundamental question confronting anyone doing social research is for them to construct a philosophical position and orientation towards their enquiry. Unlike many domains which have established practices stemming from a deeply rooted domain knowledge base, construction management is a relatively new field which lies somewhere between the natural and social sciences. As such, many different theories of knowledge or paradigms compete for methodological primacy. Researchers draw from both traditions when designing their research projects in a way which remains sensitive to the theoretical and philosophical foundations upon which their enquiry is based. However, the extent to which this has resulted in a plurality of methodological perspectives is questionable. For many years construction management has been subject to the ascendency of positivism and quantitative method (Fellows and Liu 2003). This has promoted an orthodoxy of the application of natural science methods to the study social phenomena and an attendant focus on explaining human behaviour.

In contrast, proponents of interpretivism, as an alternative paradigm, espouse the importance of understanding human behaviour. This has an emphasis on the empathetic comprehension of human action rather than the forces which shape it (Bryman and Bell, 2003: 15-16). This perspective arguably has the potential to
provide complementary insights enriching understanding of the perspectives of those who work in the sector.

Around 12 years ago some of the leading researchers within the construction management research community debated the merits and demerits of different theoretical and philosophical perspectives on methodologies from different research paradigms. This debate was initiated by two papers in particular (Seymour and Rooke 1995; and Seymour et al 1997), which questioned the dominance of the rationalist position which seemingly underpinned most research within the community, suggesting that this tacitly endorsed the very attitudes in need of change in the industry. They suggested that the culture of research must change if researchers were to have an influence on the industry. Seymour et al (1997) further questioned the dominance of the scientific theorising associated with realist ontological and epistemological positions given that the ‘object’ of most construction management research is people. These papers invoked a vigorous and somewhat polarised response around the relative merits of different research approaches. Seymour and his colleagues were accused of being ‘anti-scientific’ and of propagating an approach which has yet to yield productive output, theories or progress (Runeson 1997). Further, they were accused of promoting an approach more akin to consultancy than research, and of advocating methods which themselves have been widely criticised within the sociological literature (Harriss 1998). Seymour and Rooke (1995) were also accused of setting out battle lines in the way that they dichotomised rationalist and interpretative paradigms to the detriment of research standards (Raftery et al 1997). Seymour and colleagues defended their position by counter claiming that Raftery et al themselves undermined standards by failing to recognise that different methods suit different purposes and that their position was symptomatic of the widespread confusion over terms such as ‘method’, ‘methodology’ and ‘paradigm’ (Rooke et al 1997). They also questioned Runeson’s definition of ‘science’, defending the rigour of methods associated with the interpretive paradigm and their value in establishing the meaning ascribed by the actors studied (Seymour et al 1998).

More than decade on, a number of questions emerge in terms of the legacy of this debate in terms of the impact it has had on management research in the built environment. Firstly, have alternative research paradigms been embraced, or did the construction management community merely revert to its traditional adherence to positivism and quantitative methods? Secondly, do those within the construction management community draw upon a greater diversity of methods to enrich their understanding of the actuality of practice from the perspectives of those who work in the sector? And thirdly, has there been a move towards mixing paradigms and methods, or have the rival camps within the construction management research community remained entrenched and dichotomised within their own ontological and epistemological communities? This paper aims to attempt to provide some answers to these questions in order to establish whether the debate has had a lasting legacy on the way in which management researchers in the built environment now ‘do’ research.
2. RESEARCH STRATEGY AND DESIGN

Research methodology in social enquiry refers to far more than the methods adopted and encompasses the rationale and the philosophical assumptions that underlie a particular study. These, in turn, influence the actual research methods that are used to investigate a problem and to collect, analyse and interpret data. In other words, research methods cannot be viewed in isolation from the ontological and epistemological position adopted by the researcher. In philosophy, ontology refers to conceptions of reality; objectivist ontology sees social phenomena and their meanings as existing independently of social actions, whereas constructivist ontology infers that social phenomena are produced through social interaction and are therefore in a constant state of revision (Bryman and Bell, 2003: 19-20). Epistemology refers to what should be regarded as acceptable knowledge in a discipline (ibid: 13). Epistemological perspectives are bounded by the positivist view that the methods of the natural sciences should be applied to the study of social phenomena, and the alternative orthodoxy of interpretivism which sees a difference between the objects of natural science and people in that phenomena have different subjective meaning for the actors studied. Understanding the influence that competing paradigms have on the way in which research is carried out is fundamental to understanding the contribution that it makes to knowledge. Taking Kuhn’s (1970) definition of a paradigm as a cluster of beliefs and dictates of how research should be done, different research paradigms will inevitably result in the generation of different kinds of knowledge about the industry and its organisations. This perspective sees different paradigms as incommensurable, and so the choice of which paradigm to adopt fundamentally affects the ways in which data is collected and analysed and the nature of the knowledge produced.

In broad terms, the term ‘research design’ refers to the process of situating the researcher in the empirical world and connecting research questions to data (Denzin and Lincoln 2000). In other words, it describes the ways which the data will be collected and analysed in order to answer the research questions posed and so provides a framework for undertaking the research (Bryman and Bell 2003: 32). Making decisions about research design is fundamental to both the philosophy underpinning the research and the contributions that the research is likely to make. For example, qualitative research stresses ecological validity, the applicability of social research findings to those that exist within the social situation studied. Choosing a reductionist approach to examining social phenomena (such as questionnaire survey) is likely to distance the enquiry from the social realities of the informant, thereby undermining its ecological validity. Thus, methods are inevitably intertwined with research strategy.

Without wishing to dichotomise or pigeonhole management researchers within the built environment research community, it is important to distinguish between the different types of research conducted as a backdrop to discussing the diversity of the methods employed. In broad terms researchers adopt either an objective ‘engineering orientation’ where the emphasis is on discovering something factual about the world it focuses on, or a subjectivist approach where the aim is to understand how different realities are constituted. Whilst the former emphasises causality and generalisability, the latter focuses on localised subjective meaning. In this paper a distinction is also drawn between ‘quantitative’ and ‘qualitative’ research. Whilst this distinction is
considered by some as unhelpful (Layder 1993), it nevertheless provides a useful framework for categorising the methods used by researchers. Indeed, it can be argued that quantitative and qualitative research methods are themselves rooted in particular ontological and epistemological foundations (i.e. objectivism and constructivism, and positivism and interpretivism respectively). Accepting this association between research methods and research paradigms enables philosophical differences in the role that theory plays in research to be viewed through the lens of the methods employed by researchers. In other words, the methods employed can be used as a proxy for the paradigm adopted.

3. THE DOMINANT RESEARCH PARADIGM WITHIN CONSTRUCTION MANAGEMENT

In order to examine the methodological positions and research methods adopted by management researchers, an analysis was carried out of every paper published in *Construction Management and Economics* in Volume 24, 2006 (see Dainty 1997). Each paper was scrutinised for statements as to the methodological position of the author(s) and the methods employed. Where this was not unambiguously stated within a defined section of the paper, efforts were made to identify the methods adopted from the narrative description of the research. In some cases no discernable empirical research methods were adopted as the paper was a review-type contribution. In other cases papers drew upon a multi-paradigm research design. These papers were defined as ‘review’ and/or ‘mixed methods’ respectively. Thus, four broad classifications were used for summarising the methodologies adopted, namely: *Quantitative* – unambiguously adopting quantitative methods rooted in a positivist research paradigm; *Qualitative* - unambiguously adopting qualitative methods rooted in an interpretative research paradigm; *Mixed methods* – comprising a combination of both inductive and deductive research methods; and *Review* – not utilising empirical research methods. For those papers which reported research which adopted a qualitative (2) or mixed method (3) approach, a further sub-classification step was undertaken to categorise the methods used. These categories were established inductively and were not based on an *a priori* classification of research methods. In this respect, the interpretation of the methods adopted by the papers studies is itself interpretative. This was necessary as some authors did not unambiguously state their adopted methods. The qualitative methods adopted by the authors comprised interviews (semi-structured and unstructured), focus groups and group interviews, observation (non participatory and/or participatory including ethnography), document or other textual analysis and visual data analysis.

Table 1 presents an overview of the methods used within the research reported in the papers reviewed. These data represent the number of papers utilising the methods embodied by the broad classifications listed above. This shows that of 107 papers and notes published in Volume 24 of the Journal, 76 used quantitative methods. Only 9 used qualitative methods exclusively. In addition, a further 12 papers used a mixed methods approach combining qualitative and quantitative methods. It should be noted that in a few of the studies which have been classified as utilising exclusively quantitative approaches, a brief mention of exploratory interviews was made, although none of this data was reported in the data. The fact that they didn’t warrant reporting in the papers provides justification for excluding them from the ‘mixed methods’
classification. Table 2 presents a breakdown of the types of qualitative methods employed by those employing only qualitative methods and those adopting a mixed methods approach. In this table, papers have been classified under each category if the particular method has been utilised and the results reported in the paper. Thus, this reflects the number of times that a method was applied across the sample of papers. Given that several studies employed a number of methods and datasets, this number is greater than the number of papers identified in Table 1. This table reveals that 16 of the 105 papers published in Volume 24 of the Journal used individual open-ended interviews. This represents more than three quarters of the studies employing qualitative methods.

Table 1: Broad Classification of Research Methods Reported in All Papers (excluding letters and book reviews) in Vol.24 of *Construction Management and Economics* (n=107)

<table>
<thead>
<tr>
<th>Method Type</th>
<th>No. of papers</th>
<th>(% in parenthesis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative methods</td>
<td>9</td>
<td>(8.4)</td>
</tr>
<tr>
<td>Quantitative methods</td>
<td>76</td>
<td>(71.0)</td>
</tr>
<tr>
<td>Mixed methods</td>
<td>12</td>
<td>(11.2)</td>
</tr>
<tr>
<td>Review/other papers</td>
<td>10</td>
<td>(9.4)</td>
</tr>
</tbody>
</table>

Table 2: Classification of Research Methods Reported in Papers Using Qualitative Research Methods in Vol.24 of *Construction Management and Economics*.

<table>
<thead>
<tr>
<th>Method Type</th>
<th>No. of papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews</td>
<td>16</td>
</tr>
<tr>
<td>Focus groups, workshops and group interviews</td>
<td>3</td>
</tr>
<tr>
<td>Observation</td>
<td>2</td>
</tr>
<tr>
<td>Document or textual analysis</td>
<td>3</td>
</tr>
<tr>
<td>Visual data</td>
<td>1</td>
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4. DISCUSSION: THE IMPLICATIONS OF METHODOLOGICAL UNIFORMITY

The construction management research community has clearly grown and developed since the methodological debates of the mid 1990s. This is reflected in the growth of the number of peer reviewed journals and the numbers of papers published relating to the practice of construction management. Much of this work could be considered social science or sociological research aimed at understanding the social structure and patterns of interaction between those working within, and affected by, the built environment and the agencies and institutions which structure it. Much of this work is also founded on the co-production of knowledge. In other words, researchers use the real-world context of the industry as sites for developing research questions, and for conducting empirical work to examine them (Harty and Leiringer 2007). It could be reasonably expected that their methodological positions and the methods adopted may have broadened and diversified to reflect the multiple traditions from which the community now draws. However, if the contents of this volume of *Construction Management and Economics* are reflective of the community at large then is manifestly not the case. The findings raise fundamental questions, both in relation to
the narrow ontological and epistemological standpoints of the research community, and in relation to the uniformity of methods that interpretive researchers employ.

Questions of social ontology are concerned with whether social entities are objective realities or social constructions built up from the actions and perspectives of social actors (Bryman and Bell 2003: 19). It would seem on the basis of this analysis that the majority construction management researchers have retained an objectified view of reality. Whilst it is by no means certain that the predominance of quantitative methods revealed in this paper is inexorably linked to positivist research philosophies (surprisingly few of the papers actually stated a methodological position within the volume reviewed), it is highly likely that this reflects on on-going adherence to natural science methodologies and reductionist approaches to social enquiry within the community. Whether this should be seen as a concern will depend upon the individual standpoint of the reader, but the construction management community’s apparent reluctance to embrace methodological pluralism has undoubted implications for the contribution it makes to both research scholarship and practice. It would seem that the research community has continued to adopt a rationalist paradigm in seeking to theorise on construction management as a discipline, with a resultant emphasis on causality over meaning (c.f. Seymour and Rooke 1995; Seymour et al 1997). Whilst it could be argued that the research community reflects, in microcosm, the industry’s wider adherence to instrumentalist and rational solutions to complex managerial problems and situations (see Dainty et al, 2007), it raises questions as to the ability of the construction management research community to be able to provide a rich and nuanced understanding of industry practice.

A second issue emerging from this analysis concerns the apparent reliance of qualitative construction management researchers on open-ended interviewing. As was discussed above, in contrast with quantitative research design, which remains relatively methodologically unidimensional, contemporary qualitative research is characterised by its diversity (Punch 2005: 134). However, in the volume of *Construction Management and Economics* reviewed, virtually all of the studies which employed exclusively qualitative methods relied exclusively on semi-structured interviews. Within the social sciences, the apparent over-reliance on interviewing has been attracting criticism from researchers who see it both as symptomatic of the ‘interview society’ and as belying the fact that interviews are themselves methodologically constructed social products and not ‘experientially authentic truth’ (Gubrium and Holstein 2002). In the past, those critical of interviewing have questioned their efficacy based on practical and pragmatic considerations such as the truthfulness of the informant and the differences between what people say and what they actually do (see Hammersley and Gomm, 2005). However, a more radical critique of interviews as a research method has recently emerged in which the social construction of what is said, and the fact that they reflect the particular context within which they take place, has been seen as limiting their methodological validity. Regardless of whether such a radical perspective on the efficacy of interviews is accepted, the acknowledgement that they are in any way flawed reinforces the need for data from different sources to triangulate the inferences and outcomes that they provide.
5. THE CASE FOR METHODOLOGICAL PLURALISM IN CONSTRUCTION MANAGEMENT RESEARCH

Debates in social sciences during the 1970s focused on questioning the long-standing positivistic hegemony in sociology. This reflected the widespread realisation that there were many competing philosophies of social science and methodology rather than a single, unifying discourse. Mingers (1997: 3) noted that philosophers such as Hanson, Kuhn and Popper demonstrated flaws in the cornerstones of induction, and theory- and observer-independent observation. In social science, this legitimated the emergence of the various schools of interpretivism such as phenomenology and hermeneutics. Similar trends emerged in management science in the 1980s with the emergence of soft systems methodology (SSM) and other soft operations research (OR) approaches. It was through the challenge to the positivist orthodoxy by the emergence of phenomenological and structuralist epistemological positions that the new perspective of methodological pluralism emerged, the basic principle of which is that the use of multiple theoretical models and methodological approaches is both legitimate and desirable if established models and understandings are to be questioned and knowledge furthered. Adopting the principles of methodological pluralism does not render the choice of method arbitrary, but emphasises the context-sensitivity inherent in research design. Many argue that multi-strategy research design yields the best social science research because theory building requires ‘hard’ data for uncovering relationships and ‘soft’ data for explaining them (Denzin 1970; Leedy 1993).

According to Mingers (1997) methodological pluralism may be conceptualised in a number of different ways. Loose pluralism suggests that a discipline should support and encourage a variety of paradigms and methods without prescribing how they should be used and applied. Complementarism views different paradigms as internally consistent such that each would be seen as more or less appropriate for a particular situation. Strong pluralism holds that most situations are best dealt with by a blend of methodologies originating from different paradigms. In a similar vein Hammersley (1996) classifies multi-strategy research into three broad approaches. Triangulation refers to the use of qualitative research to corroborate quantitative research (or vice-versa); Facilitation is where one research strategy is employed in order to aid research using another approach; and Complementarity is where two strategies are employed in order to dovetail different aspects of an investigation. In management science research, Complementarism (c.f. Flood and Jackson 1991) concerns the selection of a methodology for a particular intervention rather than the combination of parts of methodologies together (Mingers and Gill 2007). The emerging paradigm of linking of different aspects of methodologies has been termed ‘multimethodology’ by Mingers and Gill, and in many respects exemplifies the principles of methodological pluralism. Indeed, Mingers (1997) refers to this principle as “strong pluralism” because of its emphasis on blending methodologies from different paradigms within a single intervention.

The theoretical attractiveness of multimethodology is that it provides a framework for utilising the plurality of methodologies in order to understand or intervene in a complex situation. Given the inherent complexity of the construction industry as an arena within which to conduct research, and the problem-focused orientation of construction management research (see Harty and Leiringer 2007), the theoretical
benefits of multimethodology seem obvious. Thus, in some respects the future
development of construction management research will depend upon the willingness
of its research community to see qualitative and quantitative research as
complimentary rather than competitive and mutually exclusive (Loosemore et al
1996). However, a shift towards multimethodological perspectives on research design
brings with it a need to embrace a greater multiplicity of different methods. For
construction management researchers this will mean a greater emphasis on qualitative
enquiry. There is not room within this paper for an in-depth treatise on the
multiplicity of methods that fall under the broad heading of qualitative research (see
Cassell and Symon 2004), but a broader outlook with regards to the application of
research methods is a pre-requisite for embracing the principles espoused above.

6. CHALLENGES IN UNDERTAKING MULTI-PARADIGM
RESEARCH

As could be expected given the polarised debate which divides those in the positivist
and interpretivist camps, combining methodologies is not without its critics. Indeed,
a range of philosophical, cultural and psychological hurdles confront the multi-
paradigm researcher, each of which renders it a highly problematic undertaking.
According to Bryman and Bell (2003: 480) the argument against multi-strategy
research methods essentially rests on two arguments. Firstly, research methods carry
epistemological commitments. The embedded nature of methods is such that they
inexorably connected to the views of the world from the paradigm from which they
originate. This ‘paradigm incommensurability thesis’ suggests that researchers must
choose the rules under which they undertake research based on the fundamental
assumptions that they bring to their enquiry (Mingers 1997: 13). Thus, seeking to
understand a practitioner’s perspective on a situation is consistent with interpretivism,
but inimical to positivism. A second challenge is that quantitative and qualitative
research represent separate paradigms. In other words, quantitative and qualitative
approaches are underpinned by different assumptions and methods which are
incompatible between paradigms. Given this backdrop, it is little wonder that most
researchers nail their colours to a particular philosophical mast and root their work
within a distinct methodological paradigm. The danger for those eschewing the
tendency to position themselves in a particular camp run the risk of finding
themselves in a methodological ‘no mans land’! Thus, those embarking on this
journey must have the courage to challenge the historical values which have hitherto
maintained the paradigmatic intransigence of those on both sides of the
epistemological divide. But it is only by demonstrating the potential of
methodological pluralism that entrenched attitudes are likely to shift, and a richer
understanding of the practice of management in the built environment is likely to
emerge.

7. CONCLUSIONS

This paper has discussed the implications of the apparent narrowness of the
construction management research community’s methodological outlook and the
implications for understanding of the practice of construction. The construction
management field appears to be firmly rooted within the positivist tradition. It has
shown both an entrenched adherence to positivist methods within the community, and
a significant reliance on open ended interviews by those adopting qualitative methods. The apparent lack of methodological diversity, coupled to an apparent lack of adventure in interpretative research design, suggests a research community rooted in methodological conservatism and disconnected from the debates going on in many of the fields from which it draws. An enduring adherence to the positivist paradigm will do little to enable construction management researchers to grasp the meaning of social action from the perspective of the actors involved.

Adopting a diversity of approaches would move the construction management research community towards a more balanced methodological outlook and would begin to challenge the dominant positivist paradigm which seems so all-pervasive within the community. This is not to suggest that there is no place for positivism in construction management research, but that used in isolation such perspectives do not provide the types of insights required. Advocating the combination of methodologies rejects some of the traditional dualisms which have seemingly pervaded the discourse of how we should undertake management research in the built environment in the past ten to fifteen years. A more expansive outlook towards mixing methodologies and research paradigms could yield deeper insights into, and understanding of, the way that practitioners ‘do’ management in the construction sector. Techniques such as triangulation, facilitation and complementarity (c.f. Hammersley 1996) all offer the potential to overcome the weaknesses of single-paradigm approaches, whilst multimethodology – the combination of parts of methodologies together – offers particular advantages for the use of systems or operational research techniques (Mingers and Gill 1997). However, mixing paradigms in this way will require adventure and courage on the part of construction management researchers if they are to challenge the paradigmatic intransigence which is seemingly so ingrained within the construction management research community.

8. ACKNOWLEDGEMENTS

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9. REFERENCES


