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NOTE

Breaking up methodological monopolies[1]: a multi-paradigm approach to construction management research

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Introduction

Objectives

This note has three principal sections. First, in the introduction we highlight some of the points made by Seymour and Rooke and describe the nature and some of the consequences of this type of debate as it has unfolded in other fields. Second, we show that special pleading – in any general sense – for one methodology over another is overly simplified, divisive and indeed dangerous. We go on to make a case for the breaking up of methodological monopolies (of all types, quantitative and qualitative) and the embracing of a multi-paradigmatic approach to our field. Third, we present some cases of paradigmatic development which may have gone unnoticed in discussions on research methodology. The note ends, predictably, with some conclusions and suggestions for research in our field. We welcome debate on research methodology. The objective of this note however, is to move beyond superficial, 'my method is better than yours' (Martin, 1990) discussions of research methodologies and paradigms. We do not want to champion either rational/positivist or qualitative approaches. We do want to champion intelligent discussion of appropriate methods for solving problems and unearthing new knowledge in our field.

Background

We congratulate Seymour and Rooke on achieving the stated objective of their paper which was to prompt readers to 're-examine some beliefs which are so fundamental to the practice of management research in this industry, that they are rarely ever made explicit, let alone made subject to criticism'. Certainly, within our circle of colleagues the paper has provoked considerable discussion and hence this note. The reason why Seymour and Rooke's paper has stimulated so much interest, at least as far as we can ascertain from our limited observations, is that the authors of the paper have stimulated debate by arguing at the extremes and presenting the polarities of a stark intellectual landscape. They have used a binary, or 'yin and yang' method, to describe, what they see as, the two opposing philosophies of 'rationalism' and 'interpretativism' *sic*.[2]

[1] The title for this note was prompted by Martin's (1990) paper *Breaking up the mono-method monopolies in organisational analysis.*

[2] Interpretativism: this is the spelling used by Seymour and Rooke. Following Australasian practice we use the simpler forms 'interpretism' and 'interpretist' throughout this note.

The apparent sub-textual vilification of researchers who use, what they term 'rationalist' methods, may simply be a very clever stylistic device to add an emotive, attention-grabbing twist, to what might otherwise have been a staid academic debate. The fact that they have been so highly selective in their choice of 'phenomena' may have been done tongue in cheek, to demonstrate the very attributes of researcher bias which they themselves decry.

The Seymour and Rooke paper should not be viewed in isolation. If context is indeed a part – if not the whole – of meaning then the context for their paper is the trend which began, for example, in the behavioural sciences in the 1960s and now in the late 1990s has reached the fields of the *Journal of Property Research* (Harris and Cundell, 1995 and Lizieri, 1995) and now *Construction Management and Economics*. Here is a summary of the story so far. The period running approximately from the early 1960s through to the late 1970s was a time of crisis and factional struggle in the fields of sociology, social psychology and human geography. In these relatively young fields of endeavour which had – in justified attempts to gain credibility – earlier embraced what they could of 'scientific method', there came an increasing realization that 'scientific methods' in general (and experimental methods in particular) had many shortcomings when used in the study of human behaviour. These fields developed not by way of polite debate but rather, via – sometimes bitter – exchanges between proponents of different views. In social psychology for example, the significant opening salvo was a paper by Orne (1962) which challenged the validity of 'laboratory based' social experimentation as setting up subtle 'expectations' on the part of the 'subjects' (or 'participants' as they are known now). This was followed by Rosenthal's (1966) seminal book on the Pygmalion effect – that our expectations of others can become self-fulfilling prophecies. In many behavioural science subjects, the debate became intense over the following decade leading to the emergence of new approaches which do capture fully and differently the richness of detail in human action and interaction (Gergen, 1973; Harre, 1979; Moscovici, 1989). Among these is the interpretive approach described in context of construction management research by Seymour and Rooke and used earlier, highly successfully, and uncontroversially, in a paper in this journal by Bresnen (1991).

One set of effects of these debates is that these fields are now considerably enriched, there has been significant development of new paradigms and today there is a much wider choice of methodologies for research. These developments are, it seems to us, undoubtedly beneficial. On the other hand, these bloody battles had *sequelae* of a different sort, which are well illustrated by the following sad words extracted from the autobiography of A.H. Halsey where, looking at his field today with the hindsight of a lifetime's work he says;

> 'Today sociology and its neighbouring subjects are in a disarray of both theories and methods. Factions fight for dominance and the sociological empire has no capital. It retreats in disorder, though it leaves indelible marks on the territories of social history, linguistics, political sciences and social anthropology which it briefly threatened to annex . . . Positivism in the sense of patient counting of heads became a term of abuse, relieving students of the obligation to read the books so labelled, or to learn the methods which are indispensable to professional competence. Epistemological nihilism and moral relativism removed respectability from all but the permanent and totally committed opponents, and paradoxically the proponents, of capitalist society.' (Halsey, 1996)

Our contention is that Seymour and Rooke's discourse springs from a battlefield of intellectual conflict. This need not, necessarily, be 'a bad thing'. However, an analogy can be made in the approach which they have adopted to that of Jason, who had to yoke fire-snorting bulls in order to plow the field of Ares, sown with dragons' teeth, which had grown into young warriors. Jason's solution to the problem was to throw a single stone at the young warriors who then fought to the death amongst themselves. In a less dramatic way the Seymour and Rooke paper is capable of having a similar effect. The implication of the paper is to create a very clear schism between, what they term, 'rationalism' and interpretism. The trap for the unwary, is to accept this segregation as part of the ground rules for debate. In addition, the authors have, as it were, 'demonized' those who, in their view, belong to the 'rationalist' camp, by giving the two groups a quite distinct persona, the inference being that sensitive, perceptive individuals are interpretists and that 'rationalists' are, in the main, institutionalized, narrow-minded technocrats. Hence, if the battle is conducted by their rules, then any attempt to criticize the arbitrary groupings which the authors have created will cast the critic in the role of an obstructionist and will reinforce their view that 'the rationalist paradigm is an obstacle to research' (All research?). In their attempt to draw battlelines between the 'rationalist' and interpretist approaches, the authors stray into dangerous territory. A clear example of the dangers of pigeonholing can be seen in the authors' own definition of the interpretive approach where they state that in this approach:

> 'The researcher's aims is to report the perspectives of the participants in particular settings. The concern is with *how* and *why* they do things.'

Similar sentiments have, however, also been expressed by members of the 'rationalist' camp such as Bechtel and Richardson (1993) when they state that:

> 'Thus we seek a realistic dynamic model of scientific discovery. We seek to understand the cognitive strategies, the procedures, constitutive of scientific rationality. These strategies are from one perspective, the procedures that define how humans approach the problem of understanding the world. They define *how* we think about the world. From another perspective, the procedures that humans embody constitute the assumptions about the structure of the world, or of the part of it to be explained. They define *what* we think about the world.'

Bechtel and Richardson (1993) are concerned with developing a naturalized and humanized theory of scientific rationality. Their field of philosophy is the mechanistic explanation of scientific phenomena. In which camp should they be placed? Are they interpretists or 'rationalists'? Probably, as philosophers, they would claim to be neither or both. Attempts to segregate construction industry researchers into camps or factions seem divisive and unhelpful.

'Rationalist' researchers and the 'rationalist paradigm' are labelled at the outset of the paper as;

> '. . . several methodological assumptions which are largely implicit and unchallenged in conventional construction management research. Chief among these is the attempt to import into management research, the distinction which is drawn in natural science between subjective experience and objective reality.' (Seymour and Rooke, 1995)

In the absence of any clear definition by the authors of exactly what they include in the term rational, we take the plain English meaning as something along the following lines, '*adj*. endowed with reason: sane: judicious; rationalist-*adj*. rationalistic.–' *(Chambers Twentieth Century Dictionary*, 1983 Edn). Paradigm we take to mean – again in plain English – conceptual framework or 'world view'. Now, making the assumption that – if the authors were going to depart from commonly held definitions for some special reasons, then they would have told their readers; we deduce that their terms 'rationalist' and 'rational paradigm' must approximate to the definitions we have outlined. If this is the case, then they must be referring to just about all of the work published so far in this journal, and all the work in social psychology, sociology and other behavioural sciences which attempted to use some kind of 'rational' framework to discover and generalize knowledge. We were puzzled to discover that according to Seymour and Rooke, attempting to find causal variables is 'inimical' to the 'special demands' of social research. Finally, they go on to talk about 'rationalist' researchers

> 'These attempts to enhance professional status might remain relatively harmless if they were not accompanied by the abuse of scientific methods in contexts for which they were not designed and in which they have no effective application.'

In the body of the paper they make the case for the rejection of 'rationalist' approaches by citing one example of a piece of research (Shammas-Toma *et al.*, 1994) and then we are taken through an assessment of the work and impact of two writers on quality in organizations in Japan, followed by, what appears to us to be, a stereotyping of engineers. We agree with the point made by Lizieri (1995) 'There is good research and bad research. The existence of some bad quantitative research is not a sufficient reason to abandon quantitative research altogether'.

Finally, in this introductory section, we want explicitly to recognize that there are a variety of types of qualitative and quantitative research. Qualitative methods include for example, action research, although this discussion has so far been confined to the interpretist approach as elaborated in Seymour and Rooke's paper. That said, it is not possible within the confines of this short note to discuss this next level of complexity, i.e. the range and permutations of paradigms/approaches which should be included under the headings 'quantitative' and 'qualitative'. It does seem to us though, that in essence Seymour and Rooke (1995) are claiming the superiority not merely of qualitative methods but of *one type* of qualitative method.

Breaking up methodological monopolies

In their attack on 'rationalism' the authors appear to dismiss the past 30 years of outputs from research in construction management and economics and, by implication, many other fields. They assert that interpretive methods are the 'only' viable ones for 'social research'. Whether it is appropriate to use one, or many, paradigms in social research is outside the boundaries of what we wish to comment on in this note. We are, though, aware of the enormous contribution to our understanding of human decision making made entirely from the 'rationalist' tradition by, for example, Kahneman and Tversky (Kahneman and Tversky 1973, 1984; Tversky and Kahneman 1983). The focus for discussion in this note is, our own field, the field covered by this journal, namely construction management and economics. In this area, we suggest it would be, to say the least, inhibiting, to restrict ourselves to one paradigm. According to the 'aims and scope' outlined inside the front cover of this journal,

construction management includes the organization and management of projects, construction companies and professional practices engaged in the construction process, as well as the management of existing buildings and constructed facilities. Construction economics includes design economics, cost planning, estimating and cost control, the economic functioning of firms within the construction sector and the relation of the sector to national and international economies. Uncovering knowledge in this field involves the study of, *inter alia*, technology, law, industry, finance, economics, human and resource management. Any sensible approach to a field like this will make use of research methods which are appropriate to the task in hand. This will encompass, – to mention just three types of research method all firmly based in the 'rationalist' paradigm – empirical studies, for example of economic or technological data (Meikle and Connaughton, 1994; Fitzgerald and Akintoye, 1995); case studies (Rahman, 1995; Carrillo, 1996); experimental approaches (Chau 1995; Shafir *et al.* 1995).

To develop the argument further, that a multiple paradigm approach is superior to the single interpretist approach advocated by Seymour and Rooke, we can readily cite examples of the power of diversity from research and practice. What we are advocating is, and we claim no novelty for the idea, that researchers in the construction field should conduct research, as any perceptive researcher would, by defining the problem and then applying the most appropriate method chosen from an unconstrained and wide range of available approaches. The only limit to this is the recognition that researchers are human, do not have limitless information or cognitive powers to process all the available outcomes of any decision, have different preferences in terms of objectives, and consequently their rationality is bound by these factors (Simon, 1978).

Martin (1990) in the paper which prompted the title of our note, discusses two positions taken by people in discussing research methods for the study of organizations.

> 'The first, a simple mono-method argument, proposes that one type of method is generally better than another. The second, a complex mono-method approach, argues that one type of method is better than another for the purpose of addressing a particular theoretical issue.'

In the quantitative version of the mono-method approach, the superiority of quantitative methods is often regarded as a tacit assumption so uncontroversial that it does not need to be justified, except when, as Martin (1990:32) points out 'someone has the temerity to use qualitative methods'. It is fair to say that the majority of research reported in this journal is in the positivist/rationalist tradition. Although it is worth noting that when qualitative methods have been used, for example Bresnen, (1991), there has been no consequent attack on the method used. Good research is good research. In the qualitative version of the mono-method position, Martin (1990:32) suggests that 'Some proponents of qualitative research take their argument one step further by denigrating quantitative research. Those who take the stance that reality is a socially constructed phenomenon are particularly likely to express discontent with all forms of quantitative methods'.

The field of construction research is, it seems to us, too wide and diverse to allow the adoption of the simple mono-method approach. Indeed it would be dangerous to advocate even the complex mono-method that qualitative approaches are superior for some types of research and quantitative methods are superior of others. The key may be what Martin (1990:42) has termed an 'existential' approach, admitting no alternative type of method is inherently superior to another. This leads to the suggestion of a multi-method or triangulation approach.

In this respect, we are empathic with the approach adopted by Csete and Albrecht (1994). In their paper entitled 'The best of both worlds: synthesizing quantitative and qualitative research in the medical setting' they demonstrate that qualitative and quantitative approaches are not mutually exclusive simply because they are based on different paradigms. We argue that the two approaches can, and should, in appropriate circumstances, be combined. Csete and Albrecht (1994:13/11) make the important point that

> 'quantitative and qualitative paradigms may be used to complement one another because they embrace two fundamentally similar research principles'. . . First, both paradigms ascribe to the same basic goal of research, to gain a better understanding of the world. Second, both quantitative and qualitative paradigms attempt to demonstrate (albeit in different ways) the "trustworthiness" of their findings by striving for truth, value, consistency, applicability and neutrality in the application of their research methods.'

Csete and Albrecht quote Tesch (1990:71) as saying 'Basically, there is only one requirement for research;

Table 1 Criteria for Establishing Trustworthiness of Research

Quantitative research	*Overarching criteria*	*Qualitative research*
Internal validity	Truth value	Credulity
Replicability	Consistency	Dependability
External validity	Applicability	Transferability
Objectivity	Neutrality	Confirmability

Source: Lincoln and Guber (1985) and Csete and Albrecht (1994)

that you can persuade others that you have indeed made a credible discovery worth paying attention to.' Csete and Albrech (1994:13/6) go on to state that 'In effect the value of all research – regardless of the paradigm – is a function of its "trustworthiness." ' In Table 1 they illustrate that 'although quantitative and qualitative research establish the trustworthiness of their respective approaches in different ways, at the core, both are concerned with the same basic issues – the overarching criteria'.

We believe that the duality of the Csete and Albrecht approach is, if we may be permitted to use the word, a more rational way for research in the construction industry to proceed, and indeed this is the way that research in the industry has been proceeding for many years.

The above example of Csete and Albrecht's work is chosen to demonstrate that there can be a compatibility between two paradigms viz. quantitative and qualitative research, two approaches that are often seen as mutually exclusive. Thus, it seems to us, that this is a useful model demonstrating the diversity of approach necessary in a field, such as ours. We have not surveyed extensively for this note but there appears to be a body of literature which discusses multi-paradigmatic approaches in the fields of research into education, public health and public administration, to name but three. (Jick, 1979; Madey, 1982; Laurie and Sullivan, 1991; Morse, 1991; Brannen, 1992; Steckler *et al.*, 1992; Carey, 1993).

At this point in a debate on the use of multi-paradigmatic approaches, some people may be tempted to cite Kuhn (1970) on the 'incommensurability' of competing paradigms. Kuhn (1970:148) suggested that:

> 'The proponents of competing paradigms are always at least slightly at cross purposes. Neither side will grant all the non-empirical assumptions that the other needs to make its case.'

Kuhn goes on to summarize three fundamental reasons why competing paradigms may be incommensurable with each other. First, proponents of competing paradigms will often disagree about the list and relative priorities of problems to be researched. Second, the terms and definitions used by the competing paradigms will not be the same. A newer paradigm may incorporate in its own new context, vocabulary and apparatus 'both conceptual and manipulative that the traditional paradigm had employed', the result being 'misunderstanding between the two'. Third, proponents of different paradigms simply practice their trade in different worlds, they see different things when they look at the same point in the same direction.

Some may argue that Kuhn's view could be extended to the case of this rationalist/interpretive inter-paradigmatic debate. It may be that those who espouse the interpretative paradigm as the 'only' way to conduct research, simply cannot see any alternative view due to the 'Kuhnian' reasons given above. We would like to suggest however, that Kuhn's description of the incommensurability between paradigms do not necessarily apply in this note on the rationalist/interpretive debate. Kuhn's work was in the area of major paradigm change through time. Kuhn was referring to 'revolutionary' changes in scientific thought akin to the move from Newtonian to Einsteinian physics. The two paradigms under discussion here are not – in our view – competing in the same way as the paradigms of the pre- and post-revolutionary scientific traditions examined by Kuhn. The essence of the difference between the rationalist and interpretive paradigm is in the way reality is researched in the world of construction. The interpretive paradigm examines reality as being – in a sense – that constructed by the subject. The rationalist paradigm views reality as being 'out there' in some measurable, definable sense. It seems to us that it would be, to say the least, very difficult to demonstrate conclusively that only one of these paradigms has the potential to shed light on real world problems covered by the field of this journal.

Some examples of the enlightened rationalist perspective

As we have alluded above, we have difficulties in identifying, from the description given in Seymour and Rooke's paper, the differences between the interpretist researcher and the perceptive researcher. Researchers such as Markus (Building Performance Research Unit, 1972) have been long time exponents of what might be termed both the 'rationalist' and the 'interpretist' approaches. His conceptual model of a building as a system, which draws specific attention to the morale and well being of the occupants as the system objective, is a clear example of the use of dual paradigms. In modelling the system, an approach (resonant with Weber's *verstehende*) was used which recognizes that the way to understand a complex system which includes people's beliefs and attitudes is to try to understand how they perceive the world. However this did not preclude the use of 'rationalist' paradigm to understand the cause and effect of people's actions, when account is taken of people's desires, objectives and expectations within the system. This model has been used by researchers in facilities management and post occupancy evaluation for the past 30 years. Thus, it seems to us, that both the research and in some cases the practice of management had begun already

to move in this new direction of stakeholder involvement. Interpretist approaches will undoubtedly have a contribution to make. Perhaps the cultural changes have already begun to happen. The whole thrust of the modern management movement has been towards user and stake-holder participation in the building procurement process. Stakeholder involvement is the cornerstone of concepts such as value management, constructability, total quality management and partnering, to name but a few. As a case in point, the reality of partnering, in the world outside of the UK, is quite at odds with the perennial adversarial position of contractual rights attributed to 'rationalism' in Seymour and Rookes' paper. Stevens (1993) defines partnering as:

> '[Partnering] is not a contract but a recognition that every contract includes a covenant of good faith. Partnering attempts to establish working relationships among stakeholders through a mutually developed formal strategy of commitment and communication. It attempts to create an environment where trust and teamwork prevent disputes, foster a co-operative bond to everyone's benefit and facilitate the completion of a successful project.'

Partnering is now well established in countries such as the United States, Australia and New Zealand. The inclusion of a case study on partnering, and there are many examples (Gyles, 1992; Hellard, 1995) would have illustrated that the rationalist paradigm, as described in the paper, is capable of producing cultural change and, what Deming called, 'the joy of work' (Hellard, 1995).

Conclusions

In conclusion, to return to our opening statement, we believe that the debate which the paper has stimulated in our own academic circle has been cathartic, and we thank the authors for that. This note has been written in order to deepen the discussion, because we fear that neophyte construction researchers who read the Seymour and Rooke paper may feel that they have been presented with a choice between the Scylla of 'rationalism' with its 'putative' causal relationships and the Charybdis of interpretism which 'recognizes that the standpoint and values of researchers have no logical priority'. The danger is that the neophytes may act in a similar manner to King Aeete's young warriors in Jason's quest for the golden fleece, and fight amongst themselves until all are dead. We have discussed the benefits and enrichments which flow from paradigmatic development, but also we have cited Halsey (1996) on the devastation wrought in the field of sociology, in order to illustrate the potential dangers. Similarly, we have cited a number of examples of literature addressing issues of triangulation and multi paradigmatic approaches including Martin (1990), which clearly demonstrates a positive way forward towards an 'existentialist' approach to the choice of paradigm and methodology. In summary, we believe that it is possible to go boldly forward in our field without the need to replay, in their entirety, battles fought, in the words of W.B. Yeats, 'elsewhere and long ago'.

Acknowledgements

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