

A CONSTRUCTIONIST EXAMINATION OF CONSTRUCTION SITE CULTURE: REVIEW OF A PILOT STUDY

Fred Sherratt¹, Peter Farrell² and Rod Noble³

¹² School of the Built Environment and Engineering, The University of Bolton, Bolton, BL3 5AB, UK

³ School of Health and Social Sciences, The University of Bolton, Bolton, BL3 5AB, UK

Recent developments in the UK construction industry have led to behavioural and cultural safety programmes becoming a key tool in the prevention of health and safety incidents on construction sites for major contractors. However, the synchronicity of these programmes with the established UK construction site culture can be challenged, and indeed the success of these change programmes has yet to be proven. An on-going PhD study to investigate how safety is placed and embedded within the culture of UK construction sites, including a review of the impact of these cultural change programmes, has recently completed a pilot study. The pilot used photography and unstructured interviews to produce a rich variety of data, which could be examined from a social constructionist epistemological stance using discourse analysis. This analysis suggested that there were areas of potential conflict with the dominant construction site culture and the behavioural and cultural change programmes, as well as friction between the form and direction of the discourses used within the programmes and those found to be more prevalent on sites. Evaluation of the pilot study suggested the methods employed had the potential to productively address the issues surrounding site safety culture.

Keywords: culture, discourses, pilot study, safety, social constructionism.

INTRODUCTION

Working on UK construction sites is frequently perceived to be a dangerous activity (Chan and Connolly, 2006). This perception is justifiably grounded in the high level of industry accidents and fatalities; construction is currently the third most dangerous occupation in the UK (HSE, 2010). Fortunately, within industry and associated schools of academia this statistic is writ large, and constant effort is employed to change it. A large body of continuing academic research seeks to examine the underlying causes of these accidents (Donaghy, 2009; Manu *et al.*, 2010), alongside industry initiatives including increased training and education of the workforce in health and safety (Laing O'Rourke, 2010; Balfour Beatty, 2010; Bovis Lendlease, 2010). Behavioural and cultural safety training programmes are a regular feature of site life under main contractors in the UK (Rawlinson and Farrell, 2010a); however their success has still to be determined. Despite positive reports about implementation, there is a lack of direct evidence of change (HSE, 2008). Indeed, concerns have been raised regarding the compatibility of these cultural change

¹ F.Sherratt@bolton.ac.uk

programmes with the existing culture on sites (Rawlinson and Farrell, 2008), which may limit effectiveness.

The main objective of this paper is to review the pilot of a study which aims to examine how safety is placed and embedded within the culture of UK construction sites, including an investigation of the impact of the behavioural and cultural change programmes as they have been employed in site environments. The study has been undertaken from a position of social constructionism (Gergen, 1999; Gergen and Gergen, 2003; Burr, 2003); this is examined in detail within the methodology section.

The definition of 'culture' used in this study concerns the ideas and ways of thinking of a distinct group of people (Inglis, 2005; Seymour and Fellows, 2002). This pared down definition has no scope for attitudes, beliefs or behaviours, examination of which would conflict with the social constructionist approach. It also ensures focus remains on the people themselves and their social practices as they are constructed within the contexts found in everyday construction site life (Potter and Wetherell, 1994).

CONTEXT OF THE STUDY

There is continuing debate within the field of social constructionism and its leading method of discourse analysis as to the involvement of 'context' to a study (Wetherell and Potter, 1992). Arguments surround the relevance of the context to the raw data, and to what extent the context is actually consequential to the interactions being studied (Potter and Hepburn, 2008). For this study and its pilot, some contextualisation will be made to inform those not cognisant of the UK construction industry; however care must be taken that this context is not simply employed to create an "...off-stage story which frames and situates the participants' discourse" (Potter and Hepburn, 2005).

The sites are the final focus of the project based UK construction industry, places where many organisations come together, often with competing objectives, to meet the demands of clients and their teams, who frequently impose tight timescales and even tighter budgets (Loosemore *et al.*, 2003). Unsurprisingly, this creates a high-pressure environment, where productivity and progress are vital and speed is of the essence (HSE, 2003). The workforce is also driven in productivity by the frequent use of 'pricework', equating the day's output to the day's pay (Spanswick, 2007). The overwhelming male majority on sites has been described as creating a 'macho' culture (Jordan *et al.*, 2005) in the transient workforce, who are of an independent and autonomous nature (Applebaum, 1981).

In terms of health and safety, often examined as 'safety culture', site safety has been found to be driven by main contractors and their site teams, and heavily reliant on the approach made by foremen and supervisors (Rawlinson and Farrell, 2008; Hartley and Cheyne, 2009). Behaviour of the workforce is seen as a key factor in safety on site, and it has been established that construction operatives are often prepared to take safety risks simply to get the job done, for money, for production, or just to keep their employment secure (Choudhry and Fang, 2008). Root causes of site accidents have indeed been found in behaviour (Abdelhamid and Everett, 2000) as well as other construction project features such as design complexity and the level of subcontracting (Manu *et al.*, 2010).

These developments in safety research led UK industry to look to sophisticated programmes to manage health and safety at a site level. Behavioural Safety

Programmes (BSP) focus on specific unsafe behaviours and attempt to reduce them, whilst Cultural Safety Programmes (CSP) aim to change the culture of a company as a whole which then leads to the desired behavioural changes on sites. The concept of both these approaches has been taken up in Balfour Beatty's Zero Harm campaign, an example of a combined safety programme; in 'identifying and planning out hazards', and establishing 'behavioural protocols...to eliminate fatal risks' the programme looks to the BSP aspects of safety management, but in 'making safety personal' the fundamentals of the CSP are also apparent (Balfour Beatty, 2010). Examples of the CSP can be seen in the Laing O'Rourke and Bovis Lend Lease cultural change model of 'Incident and Injury Free (IIF)'. As Laing O'Rourke states, 'IIF represents a step-change in attitudes to safety...underlining the personal responsibility we each have to ourselves and each other' (Laing O'Rourke, 2010), a philosophy echoed by Bovis Lend Lease, stating that IIF requires '...individuals to take a personal stand...with a mindset intolerant of any injury or incident...' (Bovis Lend Lease, 2010).

The context for this study is therefore a hectic, pressured and occasionally dangerous environment. Through the safety change programmes, attempts to improve these environments has focused either on modification of specific hazardous workforce behaviours, or on a larger cultural change of the workforce as a whole, rather than any structural change to the fundamental processes of the construction site systems which may also influence health and safety (Rawlinson and Farrell, 2008).

METHODOLOGY

Towards Social Constructionism

The traditional construction management research approach, made from a positivist epistemology, has led to a body of knowledge that is highly aware of what actually occurs on construction sites (Dainty, 2008). The visible, objective characteristics of site life have been examined in detail; for example the transience of the workforce (Bird, 2003) and the male domination (Jordan *et al.*, 2005). In terms of studying people, this is arguably very limiting (Dainty *et al.*, 1997).

Whilst a paradigm shift from the quantitative to the qualitative has been identified (Fellows, 2010), it can still be argued that there is evidence of underlying ossification of the epistemology of construction management research. When subjective, social phenomena such as safety on sites, are examined, whilst an initial interpretive, qualitative foray is made through interviews, this data is often immediately taken back into the quantitative positivist arena to construct questionnaires to provide the main study data (see for example Ankrah *et al.*, 2008). This practice continues despite the fact that questionnaires are frequently criticised for their use in social research, due to their inherent limitations (Inglis, 2005). Therefore, this study sought alternatives, in terms of the methods and epistemological positions found within other academic fields employed in the study of people.

The most commonly accepted perspective for social research within the disciplines of the social sciences is that of social cognition (Fetterman, 2010), which employs various concepts, such as heuristics, theories and paradoxes, to explain human behaviours (Hardman, 2009). However, this approach has been criticised for focus on the individual (Augustinos *et al.*, 2006), and concern raised over the unquestioning acceptance that what people say is also precisely what they think (Fetterman, 2010), despite potential issues of self-implication (Lee, 2000) or the Hawthorne effect (Kumar, 2005).

Building on these concerns of the use of language and its use in social context, the alternative discipline of social constructionism was established (Augoustinos *et al.*, 2006). Social constructionism sees the world as socially constructed by the people within it through systems and practices, and for various reasons such as convenience or self-interest (Crowther and Green, 2006). This challenges the concept that knowledge is a direct perception of reality; if the only realities are those which are constructed by individuals or societies in specific contexts (Gergen, 1999), they are therefore in constant flux; there can be no such thing as an objective reality or fact (Burr, 2003). This has implications for truth and validity, and indeed social constructionism seeks only to establish whether discourses 'tell the truth' in terms of a particular social group, rather than any objective reality (Gergen, 1999).

These shifting realities are constructed by language in the form of discourses, which includes talk and text, visual communications (Kress and van Leeuwen, 2006) or indeed any situation involving interaction (Potter and Wetherell, 1994). Discourse is seen as the universal form of social action and practice, it is something active and functional in itself (Potter and Wetherell, 1994; Burr, 2003), and stresses the variability in what people say to reflect changes in context or function (Augoustinos *et al.*, 2006).

Methodological Repercussions

Acceptance of this position clearly has implications for methodological rigour as it is commonly accepted and defined within construction management research. Several key elements which are traditionally considered as measures of academic rigour cannot be applied and therefore alternatives or modifications must be sought.

In terms of reliability, it has been established that knowledge under social constructionism is relative only to the perception of the researcher (Taylor, 2001). The involvement of the researcher as an active participant in the research (Potter and Hepburn, 2005), means that future replication of the study in the traditional sense is not possible (Wetherell *et al.*, 2010). However, a protocol for the gathering of data and subsequent rigorous discourse analysis will highlight patterns that can be labelled as significant and persistent (Taylor, 2001), and it has been argued that such patterns can indeed be identified and traced by others, given similar contexts and acceptance of the theories and prior assumptions that informed the initial researcher (Wetherell *et al.*, 2010). In this study, heightened ethnographic insight (Wetherell and Potter, 1992) was provided by a researcher experienced in working construction, and a reflexive approach made towards the data (Dainty, 2008).

The truth, as examined traditionally through the validity of a study, cannot be 'found' under social constructionism as there are no objective facts to be sought (Gergen, 1999), and the objective construct of 'validity' is arguably inappropriate (Burr, 2003). However attention must be paid to challenges of anecdotalism (Silverman, 2001), which can be addressed through an open and explicit process of data gathering and subsequent analysis. It is also argued that to some extent validation is in-built to the discourse analysis process, as working with naturalistic data means the research stays as close as possible to the phenomena under investigation (Wiggins and Potter, 2007). In seeking insight and knowledge of specific phenomena and situations, rather than objective truths (Burr, 2003), social constructionism does not lay claim to 'universal truths'; generalisation is therefore impossible.

However, given these repercussions of using social constructionism within the field of construction management research, the question which then becomes significant is 'so

what?' What can be taken from this research approach if there is no truth, no generalisation, indeed no firm reality? As an established approach within the social sciences, discourse analysis is often employed in research to seek recommendations for different practices and initiatives to produce change (Taylor, 2001), precisely the goal of the wider study. The limited sample and focus on specific phenomena in such detail allows intensive analysis to occur (Wetherell *et al.*, 2010). In examining in fine grain detail what is displayed in talk and action (Potter, 2007) alternative perspectives can be sought that may have been obfuscated by another approach. Alternatively, and indeed integral to social constructionism, readers can follow the process illustrated here and judge themselves if the fruits of this study appear useful. Indeed, does this paper, a discourse itself, tell the truth of construction site safety?

Method and Sample

The rationale and justification behind the methods employed for the data gathering for this study were themselves previously piloted, and have been examined in detail elsewhere (Rawlinson and Farrell, 2010b). These methods included photography, document gathering and unstructured recorded interviews. For the purposes of this paper, a very small amount of data from that gathered has been examined; two transcribed unstructured interviews of approximately ten and seven minutes' duration and five individual photographs of safety signage taken on one site.

This small sample is not uncommon within discourse analysis (Potter and Wetherell, 1994), and has been selected in order to allow a clear demonstration of the analysis involved in the intensive discourse analysis process (Wetherell *et al.*, 2010) within the spatial confines of this paper. As noted above, presentation of the analysis in this extensive form also allows readers to pass judgement themselves as to the coherence, richness of detail, fruitfulness and clarity of explication (Taylor, 2001).

Process of Analysis

The interview data was transcribed utilising the Jefferson system (2004), used as standard within this field, and a coding process was undertaken of both these transcripts and the site signs to ensure inclusion of all relevant instances (Potter and Wetherell, 1994). Discourse analysis was then undertaken through many systematic passes of the data, seeking patterns (Taylor, 2001) of function, construction and variation (Potter *et al.*, 2007). Focus was placed on examination of how the discourses were constructed, how they constructed the social contexts in which they occurred, and how they related to interaction and action (Wiggins and Potter, 2007). This process was undertaken repeatedly, with these areas of focus in mind, but also with care to avoid common potential pitfalls; to ensure a rigorous method of analysis rather than a mere descriptive approach towards the data (Antaki *et al.*, 2007).

The summary presented below highlights the most complete patterns found within the data, with reference to the underlying social constructionist theory of the study in terms of the nature of language and interaction in society (Taylor, 2001).

FINDINGS: ANALYSIS AND DISCUSSION

Initial examination of the five photographs of site safety signage led to identification of a clear difference between two types of sign in operation; 'home-made' on A4 paper, printed and laminated on an office machine, and 'professional' printed signs in full colour and fully plasticised. A distinction between these two types was also found in the function of the discourses the signs carried; the three 'home-made' signs carried

warnings and threats, whilst the two 'professional' signs carried safety statistics and encouragement to participate in the safety management of the site.

The discourse of the 'home-made' signs put in place by site management, addressed safety shortcomings; the moving of walkway barriers within blocks that are "...their (sic) for your safety and protection..."; the provision of a dated deadline for compliance with a list of four detailed safety breaches, including a lack of "Standard PPE" and the need to inform workers that "urinating in the core area's (sic)" would mean that "if caught you will loose (sic) your job". All these 'home-made' discourses were bound up in addressing previous action by others and establishing future control; the need to construct and display such discourses by the site management clearly indicates past non-compliance with site rules. That the discourses contain threats of having to "re-sit the induction process" and "disciplinary procedures" implies a need to reinforce this control. Although within the discourse there is also the acceptance that for retribution to occur, the perpetrator must be "caught" or "...anyone found to be...", an indicator of the practical level of control management have over the site space. A shared structure of the discourses on two of the 'home-made' signs was the physical length and detail; the information could have been far more concise. This implied that both addressed an on-going battle on which there had been much previous discussion, which resulted in the need for this convoluted discourse of requirements and punishments. The signs themselves assume that there need be no special effort to communicate clearly with their readership, and approach the human subjectivity of their readers in straightforward terms of punishment avoidance.

The discourses of the professional signs performed a different function. One sign simply presented statistics of fatalities in the industry and asked "is this acceptable?"; the function here to prompt thought by the workforce, although effectiveness in constructing active interaction through this passive medium could prove limited. This sign assumes a 'super-rational' identity of the reader, that they will know from abstract statistics that safety issues are important, and the salience and availability of this information in this de-contextualised form will be enough to change the safety behaviour of the readership.

The second sign also encouraged interaction with the workforce, and with possibly more success through employing the offer of a "reward" of "£100" for completing "Hazard/Near Miss Cards" on site. This sign takes the view that the readership is best represented by the standard model of 'rational economic agent' presumed by classical economics, and promises financial reward for the reporting of threats to site safety.

The two informal interviews were held with site supervisors, one employed by a main contractor and one by a subcontractor, to discuss their views on the safety cultural change programme in place on the site on which they worked; in this case IIF. The following areas of commonality or dissonance were established.

Both interviewees constructed their opinion of IIF in a positive way, but with immediate qualification. Whilst both were keen to state the programme is "good", this initial praise could merely be performing the function of self-alignment with what would be considered the social norm; the ultimate aim of IIF is to reduce accidents on sites and it would be hard to challenge such a philosophy directly. Immediate qualification is then applied to this positive discourse, either through the contractor's stated dislike of the "touchy feely" or the subcontractor's more general "to an extent"; neither party felt the programme was ideal. Whilst qualification on the part of the contractor was specifically constructed to focus on a key issue, the more general

criticism from the subcontractor was located within three separate discourse structures. It was repeatedly employed as a discourse with which to contrast subsequently constructed realities of site life; "good to an extent... (but people)... know what they can do and what they can get away with...".

When these realities of site life are examined in more detail, the two interviewees have commonality in their illustration of the contractor/subcontractor schism, albeit through differing discourses. The contractor creates a reality where there is constant battle with subcontractors for co-operation, not just in terms of safety but also programme compliance; and this conflict is drawn upon as the fundamental problem with the construction process in several subsequent themes. In contrast, the subcontractor constructs a reality where taking a few small risks can mean benefitting your company in terms of speed and profit, and keeping your job. These discourses around risk taking were all delivered without reference to self; instead reference was made to a more generic "people", thereby avoiding self-implication. This dichotomy clearly illustrates both sides of the construction site coin and the alternative versions of the reality within which both parties are interacting.

Both interviewees also constructed a clear segregation between IIF and safety as a whole. IIF was not automatically employed within the discourses to replace safety and safety was seen as more encompassing and more important. The subcontractor also created a contrast between theory and practice within discourses on IIF, a dislike of the "verbal" and a keenness for the physical; "getting your hands dirty" established a fundamental conflict with the form of the discourses employed within IIF, which operate through verbal and visual training methods only.

When the data is considered as a whole, it can be seen that the common social practices in operation on UK construction sites are not necessarily compliant with those constructed by the discourses found within the safety programmes, in this instance, IIF. IIF creates a reality built on self-motivating discourses where people "choose to work safely"; but this does not fit easily with the common discourse of site life where risk taking forms part of the accepted version of events. Both IIF and the professional signs also assume a different readership, a super-rational identity, rather than the straightforward punishment-avoidance identity addressed in the home-made signs, which again is discordant with a risk tolerant environment. That the home-made signs also contain highly command-driven discourses is also an indication of possible disharmony with the self-motivating approach of IIF.

However consistency was found between the discourses of the interviews and that of the 'home-made' signs themselves. These are founded on the same constructed reality; one where people do not always behave correctly and base their behaviour in part on the probability of getting caught. This reveals harmonisation in the constructed social practices of the site, and an acceptance and understanding between those working on the site and those directly managing it on a day-to-day basis, something that does not seem as good a fit with the discourses constructed around, and by, IIF.

It is also arguable that certain discourses may themselves be influencing and perpetuating certain behaviours by their very construction; by establishing a reality where compliance with site rules is not necessarily the norm, encouragement to break the rules and not get "caught" might actually become a challenge in itself.

CONCLUSIONS: REVIEW OF THE PILOT

The methodology employed for this study renders any conclusions specific only to the situations and associated contexts surrounding the data examined; no claim is made for generalisation, or scientific objectivity. The methods of collection produced ecologically valid data which was highly suited and indeed receptive to the discourse analysis applied. It can also be argued that the findings and discussion have provided useful insight into the phenomena under examination, despite the very small data sample employed. In terms of the success of the pilot study, it is therefore suggested that this approach has been demonstrated as appropriate to productively address the issues surrounding UK site safety culture.

Social constructionism and discourse analysis have illuminated various aspects of construction site life and how 'safety' itself is constructed within this context; highlighted by the dichotomy of discourses employed in the constructs of site reality. The ability of social constructionism and discourse analysis to examine the discourses surrounding the training programmes and to reveal dissonance in the constructions of those concerned clearly requires closer examination, and the training material itself is now to be included in the data for the main study to ensure a holistic discourse analysis can be undertaken.

The main study will now continue to build on the research undertaken within this pilot, in order to provide a holistic view of how safety is constructed within the ideas and ways of thinking by the people on UK construction sites.

REFERENCES

- Abdelhamid, T. and Everett, J. (2000), "Identifying Root Causes of Construction Accidents", *Journal of Construction Engineering and Management*, **126**(1), 52-60.
- Ankrah, N.A., Proverbs, D. and Ahadzie, D.K. (2008), "Exploring the behaviours of construction project participants through social cognitive theory", in Dainty, A.R.J (Ed.). *24th Annual ARCOM Conference*, 1-3 September 2008, Cardiff. Association of Researchers in Construction Management, **1**, 443-453.
- Antaki, C., Billig, M., Edwards, D. and Potter J. (2007), "Discourse Analysis Means Doing Analysis: A Critique of Six Analytic Shortcomings," in Potter, J. (Ed.) *Discourse and Psychology: Volume 1 Theory and Method*, Sage Publications Limited, London, UK.
- Applebaum, H.A. (1981), *Royal Blue: Culture of Construction Workers*, Holt, Rinehart and Winston, USA.
- Augoustinos, M., Walker, I. and Donaghue, N. (2006), *Social Cognition: An integrated introduction*, Sage Publications Limited, London, UK.
- Balfour Beatty (2010), *Safety and Zero Harm*, <http://www.balfourbeatty.com/bby/sustainability/safety-and-zero-harm/> [Date accessed 12 October 2010].
- Bird, S. (2003), "Sex composition, masculinity stereotype dissimilarity and the quality of men's workplace social relations", *Gender Work and Organisation*, **10**(5), 579-604.
- Bovis LendLease (2010), *Health and Safety*, http://www.bovis.com/llweb/ll/main.nsf/all/au_healthsafety [Date accessed 12 October 2010].
- Burr, V. (2003), *Social Constructionism*, 2nd Edition, Routledge, East Sussex, UK.

- Chan, P.W. and Connolly, M. (2006), "The role of schools careers advisors in encouraging new entrants into construction", in Boyd, D (Ed.), *22nd Annual ARCOM conference*, 4-6 September, Birmingham. Association of Researchers in Construction Management. **2**, 811-820.
- Choudhry, R. and Fang, D. (2008), "Why operatives engage in unsafe work behaviour: Investigating factors on construction sites", *Safety Science*, **46**, 566-584.
- Crowther, D. and Green, M. (2006), *Organisational Theory*, Chartered Institute of Personnel and Development, London, UK.
- Dainty, A. R. J. (2008), "Methodological Pluralism in Construction Management Research", In: Knight, A. and Ruddock, L. (Eds.), *Advanced Research Methods in the Built Environment*, Blackwell Publishing Limited, Oxford, UK.
- Dainty, A. R. J., Bagihole, B.M. and Neale, R. H. (1997), "Analytical Strategies for dealing with qualitative data in construction management research", In: Stephenson, P. (Ed.) *13th Annual ARCOM Conference*, 15-17 September, Cambridge. Association of Researchers in Construction Management, **2**, 484-493.
- Donaghy, R. (2009), *Report to the Secretary of State for Work and Pensions - One Death is too Many. Inquiry into the underlying causes of construction fatal accidents*, www.dwp.gov.uk/docs/one-death-is-too-many.pdf [Date accessed 29 September 2009].
- Fellows, R. (2010), "New research paradigms in the built environment", *Construction Innovation: Information, Process, Management*, **10**(1), 5-13.
- Fetterman, D. M. (2010), *Ethnography Step-by-Step*, 3rd Ed., Sage Publications Limited, London, UK.
- Gergen, K. J. (1999), *An Invitation to Social Construction*, Sage Publications Limited, UK.
- Gergen, M. and Gergen, K. J. (2003), *Social Construction A Reader*, Sage Publications Limited, London, UK.
- Hardman, D. (2009), *Judgement and Decision Making – Psychological Perspectives*, Blackwell Publishing, West Sussex, UK.
- Hartley, R. and Cheyne, A. (2009), "Safety culture in the construction industry", in: Dainty, A. R. J. (Ed.), *25th Annual ARCOM Conference*, 7-9 September, Nottingham. Association of Researchers in Construction Management, **2**, 1243-52.
- HSE (2010), *Statistics on fatal injuries in the workplace 2009/10*, <http://www.hse.gov.uk/statistics/fatalinjuries.htm> [Date accessed 2 October 2010].
- HSE (2008), *Research Report 660: Behaviour change and worker engagement practices within the construction sector*, HMSO, Norwich, UK.
- HSE (2003), *Research Report 156 Causal Factors in Construction Accidents*, HMSO, Norwich, UK.
- Inglis, D. (2005), *Culture and Everyday Life*, Routledge, Oxon, UK.
- Jefferson, G. (2004), "Glossary of Transcript symbols with an introduction", in: Lerner, G.H. (Ed.), *Conversation Analysis: studies from the first generation*, Benjamins Publishing Company, Amsterdam/ Philadelphia.
- Jordan, G., Surridge, M., Mahoney, D., Thomas, S. and Jones, B. (2005), *Mucky, Macho World?*, University of Wolverhampton http://asp2.wlv.ac.uk/webteam/international/cidt/cidt_WIC.pdf [Date accessed 28 August 2008].
- Kress, G. and van Leeuwen, T. (2006), *Reading Images: The Grammar of Visual Design*, 2nd Ed., Routledge, Oxon, UK.
- Kumar, R. (2005), *Research Methodology*, 2nd Edition, Sage Publications Ltd, London, UK.

- Laing O'Rourke (2010), *Health and Safety*, http://www.laingorourke.com/responsibility/health_and_safety/Pages/Home.aspx [Date accessed 12 October 2010].
- Lee, R. M. (2000), *Unobtrusive Methods in Social Research*, Open University Press, UK.
- Loosemore, M., Dainty, A. and Lingard, H. (2003), *Human Resource Management in Construction Projects*, Spon Press, London, UK.
- Manu, P., Ankrah, N., Proverbs, D. and Suresh, S. (2010), "The contribution of construction project features to accident causation and health and safety risk: a conceptual model", in: Egbu, C (Ed.), *26th Annual ARCOM Conference*, Leeds. Association of Researchers in Construction Management, **1**, 261-9.
- Potter, J. and Wetherell, M. (1994), *Discourse and Social Psychology - Beyond Attitudes and Behaviour*, Sage Publications Limited, London, UK.
- Potter, J. and Hepburn, A. (2005), "Qualitative interviews in psychology: problems and possibilities", *Qualitative Research in Psychology*, **2**, 281-307.
- Potter, J., Wetherell, M., Gill, R. and Edwards, D. (2007), "Discourse: Noun, Verb or Social Practice?" in: Potter, J. (Ed.), *Discourse and Psychology, 1, Theory and Method*, Sage Publications Ltd., London, UK.
- Potter, J. (2007), *Discourse and Psychology, Volume 3, Discursive Psychology*, Sage Publications Ltd., London, UK.
- Potter, J. and Hepburn, A. (2008), "Discursive Constructionism" in: Holstein, J. A. and Gubrium, J.F. (Eds.), *Handbook of Constructionist Research*, Guildford, NY, USA.
- Rawlinson, F. and Farrell, P. (2008), "Construction: A Culture for Concern?", in Dainty, A. R. J. (Ed.), *24th Annual ARCOM Conference*, 1-3 September, Cardiff. Association of Researchers in Construction Management, **2**, 1093-102.
- Rawlinson, F. and Farrell, P. (2010a), "UK construction industry site health and safety management: an examination of promotional web material as an indicator of current direction", *Construction Innovation*, **10**(3), 435-446.
- Rawlinson, F. and Farrell, P. (2010b), "Construction Site Culture: Seeking the Optimum Methods for an Ethnography", in Barrett, P., Amaratunga, D., Haigh, R., Keraminiyage, K. and Pathirage, C. (Eds.), *TG59 and W112 Special Track 18th CIB World Building Congress*, Salford, CIB Publication 359, 80-91.
- Seymour, S. and Fellows, R. (2002), "Introduction", in *Perspectives of Culture in Construction – CIB Publication No 275*, International Council for Research and Innovation in Building and Construction, Rotterdam, the Netherlands.
- Silverman, D. (2001), *Interpreting Qualitative Data : Methods for analysing talk, text and interaction*, 2nd Edition, Sage Publications Ltd, London, UK.
- Spanswick, J. (2007), "Dangerous drop", in *Building*, Issue 06.
- Taylor, S. (2001), "Locating and Conducting Discourse Analytic Research", in Wetherell, M., Taylor, S. and Yates, S. J. (Eds.), *Discourse As Data – A Guide for Analysis*, Sage Publications Ltd in association with the Open University, London/Milton Keynes, UK.
- Wetherell, M. and Potter, J. (1992), *Mapping the language of racism – discourse and the legitimization of exploitation*, Harvester Wheatsheaf, Hertfordshire, UK.
- Wetherell, M., Taylor, S. and Yates, S. J. (2010), *Discourse Theory and Practice: A Reader*, Sage Publications Limited in association with the Open University, London, UK.
- Wiggins, S. and Potter, J. (2007), "Discursive Psychology", in: Willig, C. and Stainton-Rogers, W. (Eds.), *The Sage Handbook of Qualitative Research in Psychology*, Sage Publications Ltd., London, UK.