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Exploring Safety Management Challenges for Multi-National Construction

Workforces: A UK Case Study

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Abstract

Large construction projects frequently operate with multi-national workforces, utilising migrant workers to provide both skilled and unskilled labour. Multi-national workforces are also brought together through joint ventures, as companies from different countries collaborate and share their expertise to construct large and complex construction projects. A multi-national joint venture in the UK provides the case study for an examination of the safety management challenges found on such projects. Whilst language and communication issues amongst workers are typically primary concerns, here they have not been prioritised. Instead, findings are presented that illuminate more nuanced and unquantifiable problems that faced the safety management team. An ethnographically-informed approach was mobilised, with the lead researcher spending three years on the site with the safety team gathering data. Analysis revealed several challenges: problems with non-UK company compliance with UK legislation and standards; differences in working practices amongst both non-UK workers and their managers; differences associated with national cultures;

and problems of poor worker welfare. It is suggested that awareness of these challenges should inform both the way in which such projects are initially contracted, as well as the development of more sophisticated safety management systems that better support multi-national construction projects in practice.

Keywords: Ethnography, migrant workers, multi-national project, safety.

Introduction

It is common in many parts of the world for large construction sites to operate with multi-national workforces, The competitive, irregular and peripatetic nature of the work has led to a reliance on cheap and flexible migrant labour, often necessitated by a lack of skilled workers in host countries (Fellini *et al.* 2007) and supplemented by the growth construction globalisation – Ngowi *et al.* (2005:135) commenting that ‘political borders become increasingly more irrelevant’. Workers from many different nationalities and ethnic groups are brought together on such sites, either as traditional migrant labour or labour local to one of the international project partners. Whilst many migrant workers are legally employed, it is also worthy of note that despite efforts around regulation and control in the processes of worker migration, there are still illegal migrant workers in many countries (Paredes Gil and Werna 2009). Migrant labour is also closely associated with informality in the labour market and, as Tutt *et al* (2013) revealed, migrant labour movement in the UK construction industry often occurs through informal recruitment practices such as word of mouth and other known networks, which can circumvent formal employment practices. Such informality has consequences for worker welfare, and as Paredes Gil and Werna (2009) note, even those legally employed can still be at risk of exploitation, such as deprivation of union membership or other worker rights. Therefore, whilst a nomadic multi-national workforce may be readily able to meet the UK construction industry’s labour demands, such work can also leave migrants vulnerable and compromise their welfare in a variety of ways, including their safety at work.

Literature has suggested that migrant workers experience larger numbers of accidents than native-born workers compared to their employment levels (Goodrum and Dai 2005, Centre for Construction Research and Training 2008, Centre for Corporate Accountability 2009, Orrenius and Zavondy 2009). For example, in the USA the construction industry accounts for 35% of total Hispanic/Latino worker fatalities, with the relative deaths of workers on sites as 74% foreign-born vs. 26% native-born (Byler 2013); whilst in 2009 migrant workers made up only 8% of the UK construction workforce, but

accounted for nearly 17% of the total industry fatalities (Centre for Corporate Accountability 2009). It is important to note that while data on UK accidents suggest a large increase in foreign construction workers' deaths (from two in 2002-3 to 12 in 2008-9), numbers are too low to be significant (Meardi *et al.* 2012). Nevertheless, the safety risks are probably higher for migrant workers (Ibid). The reasons for this are complex, and to statistically determine causality in such relationships would be challenging if not impossible, because of the variety of influencing factors such as work task allocation, levels of training and supervision, employment terms and security, and the potential for illegal or other vulnerable workers to willingly accept dangerous work in exchange for a wage. However, despite the fact that there are potentially many reasons for inequalities between migrant and native-born workers, it must be recognised that the consequences of these inequalities in the form of increased accidents and incidents still remain.

Construction safety research has duly explored this trend, but in unpicking such causality it is perhaps unsurprising that attention has focused on language barriers and communication (e.g. Trajkowski and Loosemore 2006, Sells 2007, Bust *et al.* 2008, Hare *et al.* 2012, Tutt *et al.* 2011, Guldenmund *et al.* 2013, Oswald *et al.* 2015) as the dominant safety management challenge (Hallowell and Yugar-Arias 2016). However, the potential problems facing safety management in this context are arguably much more subtle. Indeed, a UK study by the Health and Safety Executive (2013) suggested inexperience, a lack of understanding of UK Health and Safety standards and cultural differences to also be problematic, although these phenomena are often much more nuanced and unquantifiable and therefore harder to illuminate using traditional research approaches.

This paper presents selected findings from a longitudinal research study, the overarching aim of which was to explore unsafe acts on a large multi-national construction project. Over a period of three years, the lead researcher had the opportunity to essentially become a member of the site health and safety management team on the case study project (of value +£500m) located in the UK,

and was present on the site for between one and three days per week. Taking on this 'participant-observer' role enabled the mobilisation of an ethnographic approach to data collection, including observations from site 'walk-arounds' and inspections, conversations with workers and safety team members, and attending site safety meetings. Through this exploratory approach, various safety management problems other than language and communication issues emerged that could be readily associated with the multi-national workforce found on the site. Therefore the aim of the work presented here is better articulated as the exploration of the challenges faced by those tasked with the safety management of a multi-national workforce on a large construction project.

Despite the research being limited to one case study project, various characteristics of the project and the construction industry itself lend support to claims of generalisation, or rather transference and fit to other such projects as suggested by Lincoln and Guba (1985). Further, the richness of the data collected promotes exceptional internal and ecological validity. The project inducted approximately 250 multi-national workers during the research study, each of whom brought with them their own background, experiences and perspectives, making them individual units of analysis within the collective site workforce. Furthermore, the peripatetic nature of construction workers essentially creates an inherent level of transferability, as the nomadic workforce establishes and re-establishes very similar site environments on each new construction project. Therefore, it is argued that the findings here are readily able to make an empirical contribution to this growing area of research and contribute to the development of effective safety management systems specifically for multi-national projects (as called for by Bust *et al.* 2008 and Tutt *et al.* 2011), by revealing the more subtle challenges that sit alongside straightforward language barriers to communication when managing construction safety in this context.

Method

The Case Study Project

While there is no universally accepted figure for the number of multi-national migrant workers in the UK construction industry, it has been estimated to represent around 12% (240,000) of the site-based workforce (McMeeken 2015). In addition to this, recent developments amongst large construction companies, mainly from developed countries, have seen them adopt internationalisation strategies that enable them to benefit from the global marketplace (Horta *et al.* 2013) and resulted in an increase in truly 'multi-national' projects. On such projects, companies from different countries collaborate, often creating joint venture partnerships or other project-specific vehicles to combine their expertise in order to win work of a large scale and/or complex nature (Ngowi *et al.* 2005). This process had occurred for the case study project: a multi-national joint venture had been created between four organisations (based in Europe and North America) to deliver the +£500m value project, which resulted in workers local to the participating companies' host countries traveling to the UK to deliver the work on site. This case study project involved approximately 100 multi-national (or more specifically non-UK) workers at any one time, predominantly from the Czech Republic, Spain, Portugal, and the USA; but there were also workers from Romania and Poland. Migrant workers undertook roles at a variety of levels within the project's hierarchal structure including project management, safety management, foremen and workers, with a similar distribution to that normally found within such hierarchies, meaning there were far more multinational workers on the project than, for example, project managers. This case study project provides an ideal representative context to explore the safety management of a multi-national workforce in practice.

An Ethnographic Approach

Dominant methods within construction management research remain rooted in positivist traditions (Dainty 2008, Zou *et al.* 2014) that have enabled focused but arguably narrow advances in

knowledge (Phelps and Horman 2010) given the social nature of the industry and its work practices. Such approaches have limited researchers' abilities to grasp the meaning of social action from the perspective of the actors involved (Dainty 2008) and therefore struggle to reveal and illuminate more nuanced interactions and social processes at play within the construction site context. Indeed, there have long been calls for a paradigmatic shift from the traditional methods applied in construction (Seymour *et al.* 1997, Dainty 2008, Zou *et al.* 2014) to better reveal and illuminate such phenomena.

One such method that has proved fruitful for such research within the construction context is that of ethnography (see for example Tutt *et al.* 2011, Pink *et al.* 2012). While still an unconventional and little understood approach in construction management research, ethnographic approaches can engage with theories of practice, knowing and aesthetics, and propose more theoretically sophisticated ways of understanding work on construction sites (Pink *et al.* 2012). In doing so, they provide an under-utilised and powerful research tool for projects that aim to make applied interventions in actual construction work processes (*ibid*). Considering ethnography is a written representation of culture, or of selected aspects of culture (Van Maanen 2011), this is a fitting approach to exploring the problems surrounding safety management for a multi-national, or rather multi-cultural, workforce.

Ethnography is a method that mobilises participant observation as a data collection tool. In participant observation the researcher enters an environment, for example attending a site safety meeting or joining the safety team on a walk-around, and learns principally through the instruction of other members of those settings (Rooke *et al.* 2004). For this project, the lead researcher spent three years as a participant observer following the case study project's JV health and safety management team, spending between one and three days per week on the site. A 'moderate' participant observation approach was implemented, which DeWalt and DeWalt (1998) argue can provide a good balance of essential involvement and necessary detachment to remain objective.

Rather than passive participation (purely observer role) or complete participation (activities are observed in the setting with complete participation in the culture), moderate participation involved undertaking activities with almost complete participation. For example, during safety walk-arounds the researcher would participate by raising and discussing potential safety issues with the safety advisor (as would be expected by all those participating in a site safety walk-around); but was not directly involved in any safety intervention that occurred between the safety advisor and the workers, instead taking on the role of observer in such situations.

Data were collected in a variety of ways, including observations made during site safety walk-arounds, talking informally to workers on-site, attending safety meetings, and through discussions and observations of the site safety team both on site and in their own designated office space. Field notes were made either during or as soon as possible after relevant interactions (Pole and Morrison 2003:26), and an interaction protocol, developed specifically for the project (see Oswald *et al.* 2014a). This protocol implemented to ensure consistency in the steps involved in the collection and recording of any interactions and observations in the field, and to reduce the risks of reactivity, such as the Hawthorne effect. Further data was collected in the form of project documents, such as lesson learned reports, incident reports, site safety survey responses (from the contractor-led site safety climate survey which was not an empirical part of this research project), safety observation reports and meeting minutes. These supplementary data sources have the capacity to reveal to the researcher details about the context and social world they were created in (Pole & Morrison 2003). During the three-year study, over 1500 hours were spent at the research setting, over 200 field note records were written and approximately 150 units of documentary data were collected.

Ethnographic approaches are often challenged in terms of their reliability and validity, where the very nature and arguably strength of the method can also become its major flaw: whilst the researcher can gather relevant and valuable data by 'being there', they also need to be able to ensure that 'there' is the right place and the right time for relevant and typical manifestations of the

phenomena under examination – in ethnographic terms, where the ‘action’ is (Goffman 2005) – and that they are able to record and analyse this data from as objective a position as possible. Although it must be acknowledged that ethnographically informed research is to some extent ‘... inherently partial – committed and incomplete’ (Clifford 1986:7), and researcher bias can never be totally eliminated, this does not discount its ability to provide relevant insights and illuminations of phenomena in-situ when appropriate mitigation measures are employed. For this study, internal reliability was critical, and so the triangulation of multiple data sources (Freebody 2003), e.g. conversations and observations, collected and compared at different phases of the fieldwork and involving different participants and contexts (Hammersley and Atkinson 2007:183) was used to ensure this criteria was met. This data triangulation was supplemented by the use of ‘participant researchers’, where informants from the field were asked to discuss and comment on ethnographic interpretations as they were developed.

With regards to validity, LeCompte and Goetz (1982) argue that this is actually ethnography’s major strength. They note that being amongst participants and undertaking data collection for extensive periods in the field allows for continual data analysis and refinement. This supports the researcher in the mitigation of any bias, as they grow in experience and knowledge of their research environment, and become able to make effective judgements to follow the action and so reinforce and develop insights, rather than compromise them (Shipton *et al.* 2014). Indeed, such longevity in the field also lends credence to arguments of construct and internal validity, the growing experiences of the researcher enabling them to check and re-check inferences made in the field as the body of data also grows through the period of the fieldwork. LeCompte and Goetz (1982) also note that as participant observation is conducted in a natural setting, this reflects the reality of the participant life experiences more accurately than contrived settings, thereby making a strong argument for the ecological validity of the approach.

With regard to external validity, it has already been noted that the generalisation of this research method is realised through the evidenced transferability of the case study context (Lincoln and Guba 1985). Many of the UK and non-UK managers had vast construction industry experience, and revealed comparisons of this project with others, which helped approach external validity. For example, a migrant project manager drew upon his experience on construction projects of different sizes in Spain, explaining that the safety standards were much higher in the UK (see Oswald *et al* 2014b). However it has also been suggested by Pink *et al.* (2010:657) that ‘the situated nature of ethnography need not preclude the generation of recommendations for informing practice, so long as they can be appropriated in ways that reflect the nuances of the contexts in which they are subsequently applied.’ Consequently during the process of analysis of the data collected for this study, specific characteristics of the site have been muted enabling the findings and recommendations of this work to instead ‘... highlight pertinent insights or areas of promising practice’.

The data analysis itself involved a qualitative thematic approach (Guest 2012), which consisted of six stages: familiarisation with the data, generating initial codes, searching for common themes, reviewing them, defining and naming themes and producing a final report (Braun 2006). The analysis was conducted by the lead researcher, who mobilised an iterative-inductive approach to data collection and analysis (O’Reilly 2009), the ongoing analysis able to support or challenge the findings as they emerged. From the vast volume of data and analysis generated from the three-year study, the findings able to better illuminate the challenges and problems surrounding the safety management of a multi-national workforce have been drawn out here. Four key themes emerged: rules and regulations; different working practices; different management practices; worker welfare. These findings have been presented alongside the wider literature where relevant, in the form of a themed discussion illustrated by representative quotations where appropriate, to better illustrate their empirical and theoretical contribution to this specific field of safety management research.

Where names have been used these are pseudonyms, and for the purposes of clarity the term 'non-UK workers' has been used to identify those who had travelled to the UK to work specifically on *this* project. It must be recognised that the UK construction workforce is itself inherently diverse in terms of characteristics such as worker ethnicity and nationality, and therefore includes many workers native-born in other countries yet have been part of the UK construction industry for many years.

Findings and Discussion

Rules and Regulations

Safety management within the UK construction industry is firmly grounded in a significant amount of workplace legislation. Alongside the all-industry applicable requirements of the Health and Safety at Work Act etc. 1974 (which sets requirements for the management of safe workplaces) and the Management of Health and Safety at Work Act 1999 (which legally formalises the requirements for risk assessments for hazardous work), sit many other specific legislative requirements. For example, this includes regulations around lifting operations, work equipment, work at height, and the Construction (Design and Management) Regulations 2015, which are specific to construction activity. However, for those seeking to manage safety on this multi-national project, this robust framework of legislation did not provide a supporting mechanism to assist them in any pro-active safety management, but rather shifted their role to one of straightforward enforcement and compliance. As one UK safety advisor noted:

In some places in the world, regulations such as CDM are just like three letters on a scrabble board

Even for workers from countries where the European Union Directive 92/57/EEC that underlies the UK's Construction (Design and Management) Regulations is also legally in force, this did not directly translate to equity in working practices. For example, while in the UK, management involvement

and worker engagement in the development of their own safety processes is expected, such regulatory compliance was dealt with in other ways by the non-UK contractors:

In [EU Country] the safety advisor is expected to do all the paperwork and everything safety related...all the RAMS, presentations, meeting minutes, disciplinary action, everything, but that is not how it is done in the UK.

This created frustration amongst the safety team as they were faced with a constant battle to ensure compliance to UK Regulations in a number of ways, including ensuring robust management approaches to safety, plant and equipment requirements and standards, and ultimately to worker behaviour on the site. Even compliance with UK standards for basic construction equipment was problematic for the safety management team:

The ladders you are using are not UK compliant. It has been months now. When are you getting ladders that comply with the UK regulations?

As was ensuring site workers met basic UK Personal Protective Equipment (PPE) standards:

It was clear from day one that there were going to be issues when they turned up with no steel-toe cap boots, and we still have problems today – they find the rules stricter than they are used to.

Issues around regulatory compliance did not go unrecognised by the non-UK site-based workers, who acknowledged that the lack of conformity to UK standards was causing problems for the health and safety management team. Indeed, the workers often respected and appreciated the emphasis placed on health and safety in the UK. As one non-UK foreman noted:

Safety in [EU Country] is very different. They do not care about safety. Even for safety PPE such as glasses, they are very reluctant to purchase, and if they get scratched or damaged, you would have to buy another pair yourself.

Yet, despite the ability of the safety management team to develop such positive relationships with the workers on the site, they frequently faced problems when requesting similar compliance from non-UK company management, as this discussion between a UK construction manager and non-UK subcontractor manager illustrates:

This basic safety design had been requested for months, yet when a temporary design change was needed for a concrete pour to commence, it is ready in two hours. What does this tell us? That concrete pours are more important than safety? Why can you not get us this safety design?

Despite the fact that a lack of understanding of UK standards has been highlighted as a problem for migrant workers (e.g. by the Health and Safety Executive 2013), it should be noted that on this project the problem was not only one of worker misunderstanding or lack of awareness, but much more significantly also one of organisational compliance. This is a finding that cannot be readily reduced to language or communication issues, given that these companies had readily entered into contracts for this project. Rather, it suggests that those tasked with the preparation and finalisation of such contracts should have placed much more emphasis on the need to comply with UK health and safety practice prior to their finalisation, and perhaps even spelt out such requirements within their clauses.

Over time, the volume and constancy of the problems with compliance to UK regulations inevitably had an impact on the safety team. It metamorphosed into a desultory over-reliance on rules and control, a manifestation of the 'bureaucracy of safety' (Dekker 2014) where a petty focus on compliance with the safety rules becomes more important than safe practice itself. This was perhaps an inevitable consequence of the position the safety team found themselves in; the frustration and frequency with which they had to deal with compliance resulting in the rigid enforcement of requirements becoming the norm, as this conversation between a UK principal contractor's manager and UK safety advisor shows:

Manager 'They are using a scaffold system that we have never seen. They have all the required documentation and expertise to demonstrate they are competent to carry out the work in this way. But the thing is, I know we have to monitor them, but how do we check competence when we don't know what they are doing?'

Safety Advisor: 'They need to use a system that is recognised in the UK. I know that is not the answer they will want to hear, but that's my advice.'

Although UK regulation does not specify types of scaffold systems that can be used on UK sites, and indeed the legislation is intended to be flexible within its own parameters given due attention to risk assessment and other standards, here the UK safety advisor was not willing to even consider an unfamiliar construction system suggested by the non-UK company. This is yet another manifestation of Dekker's (2014) bureaucratisation of safety, in which innovation is frequently stifled and new approaches safe working are immediately rejected, before the advantages and disadvantages of alternative approaches are closely considered. In this case, the resistance from the principal contractor did not manifest from safety concerns, but instead from their legal responsibility to monitor the works, and their concerns of doing so in a system that was unknown to them. Whilst this cannot truly be associated with compliance to UK regulations, the frustrations borne of a continued need to enforce regulations at the site level which should arguably have been dealt with during the tender stages of the project, and the consequential emergence of a bureaucratic approach to safety can perhaps be more readily understood. That companies were unwilling or unable to meet UK requirements despite working on a UK project is certainly cause for concern, yet in turn this also did not facilitate the development of a supportive safety approach from the site safety team. Indeed, the magnitude of the frustrations in having to deal with such problems at the site level was frequently evident, one query regarding a lack of willing to comply with the safety rules was met with the following response from a UK safety advisor:

Then they can pack their bags and get out of here - this is how we work here and if you don't like it, then go work somewhere else.

Different Working Practices

A further phenomenon closely associated to that of regulatory compliance was identified as the safety management challenges surrounding general working practices. As one UK safety advisor noted:

What we absolutely need is an acceptable agreement on what is unsafe out there.

Otherwise it is torture.

Ideas of acceptable working practices can be closely linked to those around culture. Ways of thinking and actions are dictated by hidden and unconscious values, including for example the way individuals approach carrying out a task, their attitudes towards authority, communication patterns, concern for efficiency and learning styles (Tirmizi 2008, Johnson *et al.* 2009). It must be noted that in the majority of cases it is not that one culture is right and another wrong, but rather there is a shared view of what is considered right or wrong, logical and illogical, fair and unfair (Ochieng *et al.* 2013). Safety is itself one such shared concept, although creating an accepted shared view of what is safe and what is not is often a significant challenge on construction projects where environments rapidly change and there is the potential for things to become 'just a bit unsafe' (Sherratt 2016:77).

Within a multi-national workforce, the role of national cultures inevitably has bearing on how shared ideas of safety fit with accepted working practices. Indeed, Helmreich and Merrit (1998) noted the relationship between safety and national culture, whilst Seymen and Bolat (2010) claimed it is necessary to manage the interaction between national culture and organisational culture efficiently to form a positive organisational safety culture. Work carried out by Hallowell and Yugar-Arias (2016) in the USA found that Hispanic migrant workers on construction sites brought with them several national characteristics that influenced their approach to safety including an internal

pressure to work quickly, a fear of challenging authority, a readiness to accept unfair work assignments without complaint, to ignore criticism, to make careless decisions and defy safety rules. That multi-national workforces have the potential to bring with them such different national characteristics is duly noted, and whilst this study was not intended to explore national cultures individually with specific reference to safety, the consequences of such influences in creating challenges for the safety management team were readily apparent.

For example, working practices that were deemed unsafe for UK culture were often identified on the project, either during safety team walk-arounds or reported through the site safety observation reporting system. Risk taking and other behavioural concerns were frequently noted, and over time these became associated by the safety team with the different non-UK workers on the site, for example after witnessing a worker walk along a steel beam without a fall-prevention harness, one UK safety advisor noted:

Typical [Country] steel worker, he thinks he can float in mid-air.

Awareness of such poor working practices were also duly acknowledged by the non-UK workers themselves, as one non-UK supervisor who was making efforts to ensure his team were following accepted UK practices noted:

If we turned a blind eye they would finish this project very quickly, they will monkey around scaffolds, and that is an accepted method of work there, but people on this job would have a heart attack.

However, while such working practices not only created problems for the safety team because of the potential risks to the workers' own safety, they were also easily witnessed by other workers on the project thus leading to wider problems around the consistency of discipline and punishment for breaking safety rules. The need for a just culture is acknowledged as essential for the development of a positive safety culture (Dekker 2007), where there is shared agreement of what constitutes

unacceptable behaviour and the recognised need for punishment where appropriate (Remawi 2011), yet on this site the safety team struggled to ensure such consistency in practice. As one safety advisor noted:

The guy was caught jumping from MEWP to MEWP. Everyone knows what he did but the foreman wouldn't dismiss him because the work is nearly done and they are leaving soon anyway. It still sends out the wrong message though.*

*Mobile Elevated Working Platform

The struggle between productivity and safety is well-documented (Sherratt 2016) and so its manifestation on this site is perhaps unsurprising. However, the usual challenges this brings for safety management were further exacerbated by the differences in working practices of the non-UK workforce, and the inability of the safety team to ensure consistency in enforcement. The 'politics' of the project, particularly with relation to the non-UK companies involved and the differences in their management of their native workforces created many problems for the safety team, mainly because, as one non-UK manager noted:

People don't want to discipline or remove their own men.

The establishment of such 'protectionist' stances between the non-UK companies was a further challenge to safety management seeking to resolve and bring in line different working practices, as well as a negative influence on the site safety culture as a whole.

At times the need to challenge such behaviours was inevitable, and again created conflict around safety on the site. This even led to breakdowns in the relationships between the safety team and different non-UK companies and their workgroups. As one safety advisor noted:

I had to stop the work ... the works manager went mental for stopping the works. He was shouting and swearing saying that this is how they have always done this. I said just cause this is the way you have always done does not mean it is the right way to do it. For months

there was tension every time I saw him, but I've found a few common interests with him since and our relationship has improved.

Again the safety team had to negotiate between safety and productivity, and draw on people management skills to ensure the job progressed within the required acceptable UK safe working parameters. This insight suggests that the role of the safety advisors on this multi-national site developed beyond that of simple enforcers to positions that should be duly recognised as critical mediators between safety and productivity, enabling the challenges of different working practices to be overcome.

Different Management Practices

Alongside differences in working practices, the site safety team also faced challenges in dealing with the non-UK company management, and specifically how they managed the safety of their own workforces on the site. In the UK, safety leadership and worker engagement are considered critical to the development of a positive safety culture (Wamuziri 2011), yet differences in how management and workers interact have been identified at the national level. In his seminal work, Hofstede (1980) identified four different dimensions relating to culture: power distance, uncertainty avoidance, individualism/collectivism and masculinity/femininity. Although there have been debates and critics on Hofstede's cultural dimensions, his work has remained influential (Mearns and Yule 2009) and found to be applicable to practice (Hallowell and Yugar-Arias 2016). With regard to safety management, the dimension of power distance has been found to be highly influential as the larger power distance between workers and management, the lower the workers' awareness and beliefs regarding safety (Mohamed *et al.* 2009). On the case-study project, this dimension emerged from the data as a safety management challenge. Without awareness of Hofstede himself, it was all too apparent to the safety team, as one non-UK advisor noted:

It doesn't sit with them culturally. You can see that divide between management and workers is much bigger than you would expect from a UK workforce but this normal, it is a

culture thing. The managers make the rules and policies to keep them safe, and the workers accept them. It is not a two-way conversation.

This advisor was talking about a company with a high power distance dimension (Hofstede 1980), where superiors are expected to exercise power and subordinates are expected to be passive, including decisions made around safety (Gyekye and Salminen 2006). Indeed, the fact that workers were reluctant to speak out about poor working practices, unsafety or put forward any criticism of their managers was a significant management challenge for the safety team and they consequently struggled to develop a culture of worker engagement with safety amongst the non-UK workforce.

The team also faced problems in engaging non-UK senior management with safety, as one non-UK safety advisor noted:

Frederic has never been on a safety walk-around. I have tried to drag him and other of his management staff to come on site, but it is not happening.

This led to further frustrations for the safety team. From the UK perspective, a country with low power distance, worker engagement is commonplace, and it is well recognised that senior management involvement in worker's safety welfare, made visible through such site walk-arounds, is vital in improving a company or construction site's safety culture overall (Mohamed 2002). Indeed, Reason (1997), argues that in a low PD country an 'efficient' safety culture can be realised through eager and active participation from employees, which makes a low PD culture a more convenient structure for the development of a positive safety culture. This insight therefore provides further empirical support of the influence the theoretical power distance dimension has with regard to construction site safety, from both worker and management perspectives. Yet although the safety team were able to recognise such differences between the management practices of the non-UK companies working on the site, this awareness did not, in itself, enable them to overcome the challenges they created in practice.

Worker Welfare

The welfare of migrant workers within the construction industry has long been recognised as cause for concern. For example, Holmes (2006) concluded that structural racism and anti-immigrant practices determine the poor working conditions, living conditions, and health of migrant workers in the USA, whilst the recent project for the FIFA World Cup in Qatar has also highlighted serious concerns around the welfare of the migrant workers on the stadium sites (Amnesty International 2016). Poor worker welfare, including accommodation and wage provision, has been linked to poor safety performance in practice (Loosemore *et al.* 2010), and can therefore bring challenges to safety management. For a construction project in the UK, where the industry prides itself on high levels of Corporate Social Responsibility (Rawlinson and Farrell 2010), it would perhaps be assumed that the welfare of all workers on this site was a management priority, yet this was not found to be the case.

It became apparent that despite working on a UK construction site, many of the non-UK workers were not able to secure equality with the UK workers, as one UK safety rep noted:

They are on coppers...

Suggesting they were earning less than their UK counterparts. It is well documented that migrant workers are often prepared to take on work at wages and conditions that many UK workers would not consider (Anderson 2010), simply to secure some form of employment. Indeed, many of the non-UK workers on the site had travelled from countries with very high unemployment rates (Eurostat 2014) and so were perhaps even less likely to complain. Yet on this project longevity of work was not assured; when the non-UK workers arrived on the site they were initially placed in temporary accommodation, such as local hotels and hostels, accommodations which are often themselves cramped and unsuitable. It became apparent to the safety team that the non-UK companies were employing a 'probationary process' for the workers, as this non-UK worker explained:

We have been told that they will be here for a minimum of 3 months, and if they are good they will stay, and if not they will be sent home.

However, high rates of non-UK worker turnover may also be associated with other potential factors. As previously discussed, cultural constraints around challenging seniority for some of the non-UK workers with reference to work practices, work type or even safety (Hallowell and Yugar-Arias 2016), may have resulted in workers preferring to leave the job and return home, as identified in work by Roelofs *et al.* (2011) in their study of Hispanic workers in the US. In addition, more personal factors should also be considered, as one non-UK worker noted:

It is much more expensive [here] than home as well, some of the guys are finding it hard being away from wives and girlfriends, and are considering bringing them over, but it is hard to find suitable accommodation.

Such fundamental 'human factors' have also been acknowledged in previous research of migrant workers, and indeed on this project it was suggested that temporary accommodation was initially provided for exactly these reasons.

These issues around worker welfare resulted in several different challenges for the safety team, as they tried to build relationships and rapport with the workers in order to support safe working on the site. When the non-UK workers first arrived on the site, they were keen to demonstrate their worth to their managers in order to pass through probation and retain their place on the project. Yet the exploitation of economic disadvantage is often associated with the disparity in migrant worker injury rates (e.g. Pransky *et al.* 2002) and a strive for individual productivity linked to poor safety practices such as risk taking, over-exertion and fatigue, which the safety team subsequently had to manage. As one UK worker suggested:

The ones that stay are hard-working. I think they fear for their jobs.

The high levels of turnover within the non-UK workforce on the project, either as a result of workers leaving voluntarily or otherwise, also created frustration for the safety team, as they tried to develop a coherent safety culture on the project. A relatively stable workforce has been linked to low accident rates (Gherardi and Nicolini 2002), yet for this project this was never truly realised amongst the non-UK workforce.

One further aspect of interest that emerged with relation to worker welfare was that, as one safety advisor noted:

Some of the migrant workers have been told that if they have an accident they will be gone, so they are being very cautious.

Safety here was being used as a 'threat', yet another consideration for the workers to manage in order to ensure their employment on the project. However, when this is considered alongside the other aspects discussed within this paper, such as the lack of company compliance to UK safety regulations and standards, the differences in normal working practices and the lack of management engagement with safety, and the inevitable need to balance safety and productivity, such a 'promotion' of safety seems rather hollow in practice.

Conclusions

An ethnographic approach was used to explore the challenges faced by those tasked with the safety management of a multi-national workforce on a large construction project. The findings presented here have deliberately ignored the obvious safety management challenges that arose as a consequence of language and communication and instead sought to go beyond this well-documented factor for consideration when seeking to manage the safety of multi-national workforces. The key findings from this work are found below, with additional recommendations where appropriate, and summarise how this approach made a valid empirical contribution to the body of knowledge in this specific context.

Issues with the rules and regulations of safety were found to be a significant safety management challenge on the case study project. Although a lack of awareness of UK safety legislation has previously been noted as problematic amongst multi-national workforces, this study was able to reveal that legislative unawareness was also a problem for non-UK companies, as a result of either ignorance or negligence, and subsequently influenced their management approach to safe working. The consequences of this for safety management were considerable; the safety team found themselves in the role of enforcers rather than facilitators, frequently having to stop work and punishing workers for their lack of compliance, even when it was not necessarily their fault, creating conflict and damage to working relationships and stifling the development of any positive safety culture on the site. That the companies and sub-contractors from outside of the UK frequently did not meet even basic legislative compliance requirements is certainly cause for concern, and created a significant frustration for the site safety management team. A further consequence of this challenge was the emergence of an over-bureaucratisation of safety on the project by the safety team themselves, perhaps understandable given their frustrations, but which was again not conducive to open and pro-active safety dialogue and practices on the site. It is therefore suggested that host-nation safety standards should be clearly explicated within contractual documentation to ensure both awareness and compliance long before works commence on any multi-national project site.

The differences in both working and management practices as a consequence of differences in national cultures was also revealed by the research. Although Hofstede arguably paints with a very broad brush, and potential variations in culture and their subsequent manifestations around safety have been previously explored in much more focused detail, here the findings are still able to make a contribution with regards to wider safety management practices. The need to establish 'what safety looks like' was essential for the site safety team, and their role here was one of facilitators, seeking to encourage both non-UK worker and management engagement with safety in order to support the development of a positive safety culture on the site. Although arguably unsuccessful for this case

study, these findings are still able to illuminate the need for a better understanding of the skills required by a safety advisor on such a project, and the 'softer' management tools and knowledge required to bridge the consequences of power distance dimensions (amongst others) on multi-national projects. Such insights are also able to contribute to the development of safety management systems specific to multi-national projects, where differences in national culture should be duly acknowledged. However, it is certainly not suggested that worker engagement as found in the UK is the 'best' or 'right' way forward, and instead a fully-flexible approach should be developed that is able to fit with the different cultural characteristics of a specific project teams, yet able to harmonise with the host-country legislative requirements.

Finally, the study revealed that worker welfare should always be a paramount concern on any multi-national project, even in developed countries such as the UK which consider themselves 'world-leaders' in corporate social responsibility. Poor worker welfare, in terms of wages, accommodation and security of employment was found on the case study project, raising further safety management challenges as workers took risks and over-exerted to either secure or retain their employment. The need to acknowledge the potential for high turnover, both as a consequence of such probationary practices or more fundamental migrant worker unhappiness, should also inform the shaping of any safety management system for multi-national projects to seek to enhance its effectiveness within such a turbulent and challenging workforce conditions.

It is suggested that the longitudinal, ethnographically-informed approach made within this research has been able to reveal and better illuminate many of the safety management challenges that are unique to multi-national construction projects. These empirical findings, when considered alongside relevant theory, are likely able to find fit within many other national and project contexts. Their strengths lie in the ecological validity of the method as mobilised, and the potential for transference to other projects. That said, it should be noted that the extension of the findings of this paper to

other geographic regions, project contexts and other domains is theoretical only. Further research is suggested to explore the extent to which the findings presented here are generalizable elsewhere.

The researchers made every effort to remove researcher bias; however, it is to some extent inevitable within ethnographic work, and so limitations around internal validity and construct validity may remain. It is therefore recommended that further research be carried out that is able to overcome these limitations by adopting other, complementary methods of enquiry. It is also recommended that further research of an ethnographic nature be mobilised to continue the exploration of such complex and nuanced phenomena with relation to construction safety, in order to better inform and support the development of suitable and effective safety management systems for multi-national projects.

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References

Amnesty International, 2016. *The Ugly Side of the Beautiful Game – Exploitation of Migrant Workers on a Qatar 2022 World Cup Site*. London: Amnesty International Ltd.

Anderson, B., 2010. Migration, immigration controls and the fashioning of precarious workers. *Work, Employment and Society*, 24 (2), 300-317.

Author reference, 2014.

Byler C.G., 2013. Fatal Injuries to Hispanic/Latino Worker, USA. Department of Labor. *Monthly Labor Review* (February 2013).

Braun, V., 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2):93.

Bust, P. D., Gibb, A. G., and Pink, S., 2008. Managing construction health and safety: Migrant workers and communicating safety messages. *Safety Science*, 46 (4), 585-602.

Center for Construction Research, and Training (CPWR), 2008. *The construction chart book—The U.S. construction industry and its workers*, 4th Ed. Silver Spring, MD: CPWR.

Centre for Corporate Accountability, 2009. *Migrants' workplace deaths in Britain*. London: Irwin Mitchell and the Centre for Corporate Accountability.

Clifford, J., 1986 Introduction: partial truths. In: J. Clifford and G.E. Marcus eds. *Writing Culture: The Poetics and Politics of Ethnography*. University of California Press: London, 1-26.

Dekker, S.W.A., 2007. *Just Culture – Balancing Safety and Accountability*. Aldershot: Ashgate Publishing Limited.

Dekker, S.W.A., 2014. The bureaucratization of safety, *Safety Science*, 70, 348-357

DeWalt, K.M. and DeWalt, B.R., 1998. Participant observation. In: H. Russell Bernard ed. *Handbook of Methods in Cultural Anthropology*. Walnut Creek: AltaMira Press, 259-300.

Dainty, A., Green, S. and Bagilhole, B., 2007. *People and Culture in Construction: A Reader*. Oxon: Taylor and Francis.

Dainty, A., 2008. Methodological pluralism in construction management research. In: A. Knight and L. Ruddock eds. *Advanced Research Methods in the Built Environment*. Oxford: Wiley-Blackwell, 1–13.

Eurostat, 2014. News Release April, European Commission.

Fellini, I., Ferro, A. and Fullin, G., 2007. Recruitment processes and labour mobility: the construction industry in Europe. *Work, Employment and Society*, 21 (2), 277-298.

Gherardi, S. and Nicolini, D., 2002. Learning the trade: A culture of safety in practise. *Organisation*, 9, 191-223.

- Gyekye, S. A. and Salminen, S., 2006. The self-defensive attribution hypothesis in the work environment: Co-workers' perspectives. *Safety Science*, 44 (2), 157-168.
- Goffman, E., 2005. Where the action is. In: E. Goffman ed. *Interaction Ritual: Essays in Face-to-Face Behaviour*. Brunswick, NJ: Transaction Publishers, 149-270.
- Goodrum, P. M. and Dai, J., 2005. Differences in occupational injuries, illnesses, and fatalities among Hispanic and non-Hispanic construction workers. *Journal of Construction Engineering and Management*, 131 (9), 1021-1028.
- Guest, G., 2012. *Applied thematic analysis*. Thousand Oaks, California: Sage Publications Limited.
- Guldenmund, F., Cleal, B. and Mearns, K., 2013. An exploratory study of migrant workers and safety in three European countries. *Safety Science*, 52, 92-99.
- Hammersley, M. and Atkinson, P., 2007. *Ethnography: principles in practice* (3rd ed.). Routledge: Abingdon.
- Hallowell, M.R. and Yugar-Arias, I.F., 2016 Exploring fundamental causes of safety challenges faced by Hispanic construction workers in the US using photovoice. *Safety Science*, 82, 199-211.
- Hare, B., Cameron, I., Real, K.J., and Maloney, W.F., 2012. Exploratory case study of pictorial aids for communicating health and safety for migrant construction workers. *Journal of Construction Engineering and Management*, 139 (7), 818-825.
- Helmreich, R.L. and Merrit, A.C., 1998. *Culture at Work in Aviation and Medicine; National, Organisational and Professional Influences*. Aldershot: Ashgate Publishing Limited.
- Hofstede, G., 1980. *Culture's Consequences*. London: Sage Publications.
- Holmes, S. M., 2006. An ethnographic study of the social context of migrant health in the United States. *PLoS Medicine*, 3 (10), e448.

Horta, I.M., Camanho, A.S., Johnes, J. and Johnes, G., 2013. Performance trends in the construction industry worldwide: an overview of the turn of the century. *Journal of Productivity Analysis*, 39 (1), 89-99.

Health and Safety Executive, 2013. *Migrant Workers* [online]. Health and Safety Executive. Available from: <http://www.hse.gov.uk/migrantworkers/construction.htm> [Accessed 3 April 2014]

Johnson, S.K., Bettenhausen, K. and Ellie Gibbons, E., 2009. Realities of working in virtual teams: affective and attitudinal outcomes of using computer-mediated communication. *Sage Journal: Small Group Research*, 40 (6), 623-649.

Lincoln, Y.S. and Guba, E.G., 1985. *Naturalistic Inquiry*. London: Sage Publications Limited.

Loosemore, M., Phua, F., Dunn, K. and Ozguc, U., 2010. Managing cultural diversity in Australia construction sites. *Construction Management and Economics*, 28 (2), 177-188.

McMeeken, R., 2015. Crossing the Line. *Building Magazine*.

Mearidi, G., Martín, A., and Riera, M. L., 2012. Constructing uncertainty: Unions and migrant labour in construction in Spain and the UK. *Journal of Industrial Relations*, 54 (1), 5-21.

Mearns, K., and Yule, S., 2009. The role of national culture in determining safety performance: Challenges for the global oil and gas industry. *Safety Science*, 47 (6), 777-785.

Mohamed, S., 2002. Safety climate in construction site environments. *Journal of Construction Engineering and Management*, 128 (5), 375-384.

Mohamed, S., Ali, T.H. and Tam, W.Y.V., 2009. National Culture and Safe Work Behaviour of Construction Workers in Pakistan. *Safety Science*, 47, 29-35.

Ngowi A., Pienaar E., Talukhaba A., and Mbachu J., 2005. The globalisation of the construction industry - a review. *Building and Environment*, 40 (1), 135-141.

Ochieng, E.G., Price, A.D.F., Ruan, X, Egbu, C.O. and Moore, D., 2013. The effect of cross-cultural uncertainty and complexity within multicultural construction teams. *Engineering, Construction and Architectural Management*, 20 (3), 307 – 324.

O'Reilly, K., 2009. *Key Concepts in Ethnography*. Sage Publications: London, UK.

Orrenius P.M. and Zavodny M., 2009. Do immigrants work in riskier jobs? *Demography*, 46 (3), 535-551.

Oswald, D., Sherratt, F., and Smith, S., 2014a. Handling the Hawthorne effect: The challenges surrounding a participant observer. *Review of Social Studies*, 1 (1), 53-73.

Oswald, D., Smith, S. and Sherratt, F., 2014b A Spanish subcontractor in a UK culture In: Raiden, A B and Aboagye-Nimo, E (Eds) *Procs 30th Annual ARCOM Conference*, 1-3 September 2014, Portsmouth, UK, Association of Researchers in Construction Management, 259-268

Oswald, D., Smith, S. and Sherratt, F., 2015. Doing the 'funky chicken' to communicate on multinational projects. In: A.B. Raidén, and E. Aboagye-Nimo eds. *Procs 31st Annual ARCOM Conference*, 7-9 September 2015, Lincoln, UK, Association of Researchers in Construction Management, 589-598.

Paredes Gil, M. and Werna, E. 2009. Local Authorities and the Construction Industry, in Lawrence, R. and Werna, E. (Eds) *Labour Conditions for Construction: Building cities, decent work & the role of local authorities*, 51-81.

Phelps, A. and Horman, M., 2010. Ethnographic theory-building research in construction. *Journal of Construction Engineering and Management*, 136, 58-65.

Pink, S., Tutt, D. and Dainty, A.R.J., 2012. *Ethnographic Research in the Construction Industry*. London: Routledge.

- Pransky, G., Moshenberg, D., Benjamin, K., Portillo, S., Thackrey, J. L. and Hill-Fotouhi, C., 2002. Occupational risks and injuries in non-agricultural immigrant Latino workers. *American Journal of Industrial Medicine*, 42 (2), 117-123.
- Rawlinson, F. and Farrell, P., 2010 UK construction industry site health and safety management: An examination of promotional web material as an indicator of current direction. *Construction Innovation*, 10 (4), 435-446.
- Remawi, H., 2011. The relationship between the implementation of a Safety Management System and the attitudes of employees towards unsafe acts in aviation. Thesis (PhD). Griffith University.
- Roelofs C., Sprague-Martinez L., Brunette M. and Azaroff, L., 2011. A qualitative investigation of Hispanic construction worker perspectives on factors impacting worksite safety and risk. *Environmental Health*, 10 (1), 84.
- Sells, K., 2007. Safe In Every Language. *The Builder*, 11 (3), 14-15.
- Seymen, O.A. and Bolat, O.I., 2010. The role of national culture in establishing an efficient safety culture in organisations: an evaluation in respect of Hofstede's cultural dimensions. *Eurasia Business and Economic Society (EBES) Conference*, Athens.
- Sherratt, F., 2016. *Unpacking Construction Site Safety*. Chichester: John Wiley and Sons.
- Shipton, C., Hughes, W. and Tutt, D., 2014. Change management in practice: and ethnographic study of changes to contract requirements on a hospital project. *Construction Management and Economics*, 32 (7-8), 787-803.
- Tirmizi, S.A., 2008. Effective multicultural teams: theory and practice. *Advances in Group Decision and Negotiation*, 3, 1-20.
- Trajkovski, S. and Loosemore, M., 2006. Safety implications of low-English proficiency among migrant construction site operatives. *International Journal of Project Management*, 24 (5), 446-452.

Tutt, D., Dainty, A., Gibb, A., and Pink, S., 2011. *Migrant construction workers and health and safety communication*. King's Lynn: CITB-ConstructionSkills.

Tutt, D., Pink, S., Dainty, A. R.J., and Gibb, A., 2013. Building networks to work: an ethnographic study of informal routes into the UK construction industry and pathways for migrant up-skilling. *Construction management and economics*, 31 (10), 1025-1037.

Rooke, J., Seymour, D and Fellows, R., 2004. Planning for claims: An ethnography of industry culture. *Construction Management and Economics*, 22 (6), 655-62.

Seymour, D., Rooke, J. and Crook, J., 1997 The role of theory in construction management: A call for debate. *Construction Management and Economics*, 15 (1), 117–119.

Van Maanen, J., 2011. *Tales of the field: On writing ethnography*. Chicago: University of Chicago Press.

Wamuziri, S., 2011. Factors that Contribute to Positive and Negative Health and Safety Cultures in Construction. *Proceedings of the CIB W099 Conference: Prevention - Means to the End of Construction Injuries, Illnesses and Fatalities*. 24–26 August, Washington DC. CIB, Rotterdam.

Zou, P.X.W., Sunindijo, R.Y. and Dainty, A.R.J., 2014. A mixed methods research design for bridging the gap between research and practice in construction safety. *Safety Science*, 70, 316–326.