

A CROSS-CULTURE ANALYSIS OF CONSTRUCTION PRACTICE THROUGH KNOWLEDGE EVENTS

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It has long been believed that culture causes differences in construction practice in different countries. Few practical cross cultural studies have been conducted in construction due to the complexity, richness, abstractness and subtlety of national differences. Culture is a disputed concept whose meaning depends on the context of its use. Knowledge-Event Management (KEM), using audio diaries to capture knowledge events and debriefing to analyse and transfer knowledge, has been chosen to enquiry into construction practice in different countries as it accesses deep knowledge in practice. It is proposed that those real-life knowledge events contain rich contents from which not only the embedded tacit knowledge can be extracted and then shared but also some national differences in cultural pattern of learning and practicing may be detected. This paper presents two typical knowledge events collected from construction professionals in Britain and China respectively and uses a cross-culture lens to identify differences in people's thinking and learning as well as their practice in construction. The findings present evidence of different national construction practices and link these to cultural differences. This will surface learning to assist international projects and for the learning of international students.

Keywords: knowledge event, cross-culture, construction practice.

INTRODUCTION

The concept of internationalization is a critical aspect of the modern world through the developments in travel, communications and finance. The impact of this has become known as globalization and this affects locations of activities, processes and operations and people. Globalization is already a fact of life in the 21st Century and the construction industry in particular has seen growth in both international and multinational collaborations over recent years. This includes involvement in infrastructure developments, with investment, and with the construction team of developers, architects, engineers, project managers, contractors, suppliers, labours and end-users coming from different countries. For example, the Burj Dubai, the world's tallest building, is developed by Emaar Properties from UAE, designed by Skidmore Owings and Merrill from USA, and constructed by Samsung from Korea. The

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National Swimming Centre in Beijing (known as the Cube), currently under construction for the 2008 Olympics, is co-designed by PTW Architects from Australia and ARUP from the UK, constructed by China State Construction Engineering Corporation, and the unique acoustically transparent envelop material ETFE is from the UK company Vector Foiltec (Olcayto and Smith, 2007).

The complexity of these developments requires participants to have expertise in construction management in an international context and be capable of seamless transition between the various local construction industries around the world. Even for UK domestic projects, internationalization has meant that many of the professional and trade resources are provided by people from other countries which challenges previous approaches and is creating a new context for the industry. In addition, the expectations of design, efficiency and management are more and more being set globally again challenging past practice and requiring new skills. This includes the extension of the procurement of materials from many international locations with differing quality and production values which impact on the delivery and desirability of the project. All this is set within a pervasive internationalization around attitudes to culture, the environment, legislation and the financial world. This internationalization is a growing challenge for people working in the industry both at a personal level and at an organizational level as past knowledge and skills may be inadequate. Thus, a study of different international practices is needed to help practitioners engaged in international projects and also for the learning of students for international practice.

This research has selected Britain and China, pragmatically because of the availability of contacts in each, to pilot a method of enquiry and analysis. The work is based on Knowledge Event Management (KEM) (Boyd and Xiao, 2006) which it is demonstrated can assist the extraction of rich knowledge about practice and so enquire into the cultural aspects of this. The analysis was partly based on the debriefing technique of KEM, which involves a dialogue between respondent and researcher, and partly on the dialogue between the cross cultural positions of the researchers. The conclusions relate to the value of the method as well as to the specifics of the cultural differences.

CULTURE RESEARCH METHOD

In the social sciences, culture is a disputed concept (Wright, 1994). One of its roots is in anthropology where it was used to define and distinguish national and tribal groups. The use of the concept is seen as imposing a set of conditions on people as an apparently homogeneous group. Thus, individuality is lost within the predominance of the normal conditions. Once these norms have been established, research looks for them in the actions and demeanour of the subjects. This reinforces the norms by making it evident that they exist. At its worst this involves racism. In more critical studies of such research into culture, it can be said that it says as much about the researchers as about the researched, in their desire to establish (and sometimes measure) differences between people.

It is evident phenomenologically that people see differences; this gives themselves identity as well as defining others. It is also evident that people find others who are different strange and this can be problematic when people have to work together and when people have to be educated. The differences between Britain and China are extremely evident on this basis. These extreme differences start with language and even alphabet. The socio-political systems both currently and historically are also very

different. These are the settings in which construction practice occurs and which frame cultural actions by practitioners. In searching for a method to enquire into this it was important to access the richness of the context and the thinking of the practitioners. The technique of Knowledge Event Management was considered ideal.

The new technique of KM, called Knowledge-Event Management (KEM), was developed and tested (Boyd and Xiao, 2006) to not only access the abstract factual knowledge of an activity but also the process knowledge concerning how people involved in the activity think and make judgments in practice. It is based on both cognitive learning theory (Kolb, 1984) and the theory of organizational behaviour (Argyris and Schön, 1974), and developed by Boyd and Robson (1996). KEM focuses on 'events' and stories about the events. KEM has three stages: event-collection, debriefing-analysis, and dissemination. An audio diary is used for event-collection in order to capture the richness of the day-to-day events and minimize the disruption to participants' daily job. This relating of the story in this way also captures the emotions of the event indicating the challenge to personal constructs and the potential for deeper learning. After a few diary entries, the participants are debriefed, which establishes the immediate impacts of the events (i.e. the consequential issues which is experienced and the contributing issues which produce the event), and the deeper and wider issues which set the way that the organization does things generally or even the way that the industry operates. Debriefing involves a dialogue where the personal constructs of the event can be explored.

The technique surfaces and records the rich knowledge in context that is required for a study of cultural practices. The significance of events is particularly important in the construction industry where these are generated by continual change in activities during a project (Boddy and Buchanan, 1992). Events are occurrences that can be distinguished from the general flow of experiences that we normally expect (Hommel *et al.*, 2001). It is this break with expectation that makes events particular and also very useful for learning and KM and cross cultural learning. In our expectations, we have in our minds a model of what we believe should happen (Boyd and Wild, 1996). In an event, we find that our model is not quite right. What we do then is a critical skill involving making 'sense' of the event (Weick, 1995) and managing the consequences. It is this making sense and the thinking behind the action that we believe represents cultural differences.

Events are useful in enquiring into culture as they maintain the richness of experience and the thinking behind action. This ties the thinking to the individual as described in their story about their action. The debriefing allows for the thinking to be explored and for the respondent to state their own cultural position. These cultural differences are expressed within stories in a number of ways. The category of event itself may be different. (We have chosen ones that are similar in this analysis). The sequence of actions may be different; in that sense that something can happen that is unlikely in a culture. The personal reaction to the event may be different, including how this is interpreted and the actions performed as a consequence. This includes an emotional element which again may be culturally or individually determined. What the respondent is willing to tell about is also conditioned by culture but this cannot be determined. Finally the use of words may be different. In this research the Chinese was translated by one of the authors and paraphrased into an English format. There is no expectation that these stories are generally applicable (statistically valid). They are being used to determine learning about construction in different countries and cross cultural understanding.

The final analysis by the researchers involved using a cultural framework developed by Hampden-Turner and Trompenaars (1995). They contend that there are seven dimensions underpinned in our value system: 1) universalism vs. particularism; 2) analyzing vs. integrating; 3) individualism vs. communitarianism; 4) inner-directed vs. outer-directed orientation; 5) time as sequence vs. time as synchronization; 6) achieved status vs. ascribed status; and 7) equality vs. hierarchy. Different cultures place themselves differently on these scales and this allows an understanding of different approaches to practice. There are dangers in the use of a framework in the study of culture as it prescribes what will be found. Hampden-Turner and Trompenaars (2000) have developed their use of the framework in a more contextual manner, stating:

'Cultures have always been reflections of the world mirrored in the eyes of members. Who is to say where we should look first, or in which direction our eyes should scan? Neither direction is "normal". Cultures have simply made different initial choices.'

The authors of this paper were very sensitive to this in their analysis and considered their different cultural positions protected against excesses of this. The seven dimensions have been well researched and information of differences have been published which allow for a comparison with this research.

The analysis involves a conversation between the two authors who have Chinese and British background respectively. Our different cultural backgrounds enable us to debrief each other to explicate the cultural context embedded in the case events and reveal the cultural differences in construction practice between the countries. We are acutely aware of these methodological problems, in our desire to undertake this cross cultural study. It is critical then that we explore our own prejudices and search for methods that see the richness of cultures rather than the homogeneity. Even though the analysis is mainly grounded in the case events themselves, it is not possible to avoid our own past work, past methods and personal perceptions; this all becomes part of the research to be commented on. Important is the purpose of the inquiry and in our case this is to learn from each culture and to assist people working across cultures to work more easily.

This KEM approach has been applied both in the UK and China and events from their construction companies have been collected. Over 300 events have been collected in the UK and a dozen events have been collected from China. In the next section, only two such real life events and their debriefing are presented. Similar problems were chosen to fix some of the context of the events so that a cross cultural analysis will reveal some differences in their construction practices and the cultural background embedded in. The two example events presented do not display all the seven dimensions so their similarities and disparities were investigated in the cross cultural debate conducted by the authors and presented in the analysis.

KNOWLEDGE EVENTS

UK Event: Groundwork subcontractor has to be replaced

A is a chief QS of a general contractor. He had a project which was to excavate trenches and install external services including new gas lines, new high-voltage cables, and new service ducts for IT cables. A's company allocated a very young site manager for this job. A expressed his concern about this manager's experience, however, the construction director

thought this was just a simple job. From the first week, there were problems from the groundwork subcontractor. They put the gas mains in incorrectly and the line and level was also wrong. Since then, numerous more problems occurred. They hit existing underground services (gas mains, electric cables) 5 times because of not following directions. The fact that the young site manager assigned to this project was inexperienced did not help the situation. In the end, the client had had enough with the subcontractor and A's company had to terminate their contract. A had to get another groundwork subcontractor in with short notice who would only do the work on day rates. To make things more complicated, this subcontractor could not get all his people cleared because of the security requirement of the project. So A had to employ yet another groundwork subcontractor who charged even more extortionate rates for labour (twice as much as the previous subcontractor).

UK Event: Debriefing Analysis

Consequential Issues:

- Extra cost was incurred because of the termination of the contract and change of groundwork subcontractor.
- Extra cost was spent on another site manager.
- The project was delayed.
- The client was not happy at the performance of the project.
- The relationship with the client was jeopardized.
- Extra effort had to be spent to deal with the contract issues.
- There were fears of a dispute on the fees and reimbursement with the first groundwork subcontractor.
- The groundwork subcontractor was now out of the supply chain.

Contributing Issues:

- The groundwork subcontractor had poor management and workmanship.
- The subcontractor did not follow the instructions correctly.
- The supervision from the site manager was not sufficient.
- It was wrongly assumed that this was an easy job.
- The project had extra personnel security requirements.

Wider learning issues:

- Relationship with sub-contractors needs to be built around effective performance and not just lowest cost.

China Event: Poor quality of contractor's work

S is a design division director in a large consulting company in Beijing, China. His team designed a steel-framed factory for a client of a town-owned company. The client contracted the project to his own nephew. S knew that the client did not have competent technical staff to manage the project nor did the nephew's company and therefore was not competent for the job. So, S suggested that they subcontract the job to a well-qualified contractor to ensure the quality of the project. But the client's nephew did not follow S's advice and subcontracted the project to another poorly qualified contractor at a very low price. After the steel work and the concrete job on top of it were completed, S was asked to check the quality

and sign off the job. S found out the steel work was so poorly done that he had to order the contractor to dismantle most of it and took measures to strengthen steel members which couldn't be dismantled. The contractor tried to bribe S but S refused.

China Event: Debriefing Analysis

Consequential issues:

- The contractor had to remedy the job at his own cost.
- The designer had to spend time ensuring the quality and safety of the building.
- The building would be below the desired quality standard.
- The project would be severely delayed as a result.

Contributing issues:

- The client did not know much about construction and had very weak in-house technical support.
- The client's consulting engineers were not technically competent.
- It is very common to win contracts through connections ("Guan Xi") in China.
- Small and poorly staffed contractors can pass the prequalification by articulating with qualified contractors through paying fees.
- The small contractors win contracts by low price.
- Contractors are renowned to try to overcome quality problems by bribing.
- The government has all kinds of management regulations in place but they are not strictly enforced.

Wider learning issues:

- To achieve high project quality, requires a network of competent participants (client, designer, contractor, engineer, and quality inspector), not just a single competent professional.

CROSS-CULTURE ANALYSIS

The stories and the debriefing analyses were reviewed by the authors using the seven dimensions of Hampden-Turner and Trompenaars (1995).

Universalism vs. particularism

Universalism emphasizes finding and using general rules in a situation while particularism considers a situation's unique merits (Hampden-Turner and Trompenaars, 1995). In the UK, a lot of things are done uniquely, and the degree of universalism is not particularly high. People try to find the particular and then amend the rule to make it cover the particulars. The advantage of a high degree of particularism is that it allows people to be more flexible in uncertain situations. The difficulty is that it also means that people never develop a more universal approach which is more optimum and which they are skilled at.

The particular aspect in A's story is that the problems are allowed to occur because the participants just think that these problems are the nature of the job. They were not alerted to the real problem of incompetence as a 'show stopper'. The groundwork subcontractor was incompetent, the site manager was not experienced enough to identify this and A's company were not managing the problems. A had been led into a false sense of security as the groundwork subcontractor had worked for him before and had been competent. However this time, the labours were not the same gang. This

shows that in the UK although we live in a world of particulars, we do not manage them as particulars.

In China, like other eastern cultures there is a great belief in universals. This extends to actions where if everyone does something, even if this is wrong, then individuals can do this without punishment. For example, in S's story, the bribe, the imperfect practice, is part of the norm, part of the universalism; thus the contractor believed he could get away with his poor quality through the payment of money. On the other hand, the event also has the element of particularism. S took it on himself to drive quality against the normal practice.

The construction manager thought it was a simple project, so he thought it could be dealt with by universal. In fact, it still had sufficient particulars which the young site manager did not have the skills to cope with. But the system expects the young site manager to have the capacity to cope with the particulars. As regards learning, the experience of the young site manager in A's event encouraged the development of particularism skills through having to 'sink or swim' in an adversarial environment. While in the universalist system in China, young and inexperienced site managers would not have had such chances to manage such a project independently. They will be assigned someone to supervise you to make sure everything goes well and is done properly.

In both case, there is a mixture of the universalism with particularism. But China seems to have a higher degree of universalism while the degree of particularism in the UK is higher.

Analyzing vs. integrating

When facing a problem, some people deal with it by analyse it into parts, while others look at the whole patterns, relationships and wider contexts in an integrative way (Hampden-Turner and Trompenaars, 1995). There were no aspects that showed differences in the cultures.

Individualism vs. communitarianism

Individualism sees the rights, motivations, rewards, and attitudes of the individual as being paramount whereas communitarianism sees the rights of the whole company, family or country as being most important. Eastern cultures are identified as communitarian in comparison to the UK which is very individualistic (Hofstede, 2001).

S concluded in his wider learning that everyone needs to work towards the quality of the project in order to guarantee it. This demonstrates his strong sense of communitarianism as identified for his culture. However in the event, he personally took the responsibility for the project quality, indicating his individualism. In a bureaucratic culture, people let things happen because they do only their job and if their job is okay they are fine. It is not the case with S as he thought it was his moral responsibility to make sure the project was a success. This shows how cultures are really in tension and that in the changing socio-economic situation of China, then individualism may be increasing.

The client in S's event demonstrated communitarianism by awarding his nephew the project even though he knew his nephew did not have the competence to do the job; it is a family affair. In contrast, the incompetent company in China passed the pre-qualification by affiliating to a big qualified company through paying fees. The big

company have little industry or social communitarianism; they take the money without doing anything and hoping nothing goes wrong as most of the time, they can get away with it. People in China, now, will take social risk for individualistic economic benefit using existing communitarian connections. Even though people are more individualistic as a result of the market economy nowadays in China, there is still very strong sense of the communitarian spirit right through the hierarchy. On the contrary, in the UK, people have little communitarian spirit in that and traditionally they tend to be highly individualistic (Hofstede, 2001).

Inner-directed vs. outer-directed orientation

This dimension of culture deals with the guides people use for their action, whether it be the inner-directed judgements, decisions and commitments, or the signals, demands and trends in the outside world to which we must adjust (Hampden-Turner and Trompenaars, 1995).

In a sense, both A and S were acting the same way in that both of them act professionally. It comes from an inner-directed sense of duty. Even though there were problems out there, they dealt with it with their sense of duty.

However, S also shows a degree of the outer-directed orientation. For example, he knew the contractor was not good enough, but he also knew he could not change that. Instead, he adjusted himself to the situation, through increased quality checks and advising the contractor to subcontract the project to a qualified subcontractor. He still let the contractor do the job, but pointed out the problem and ordered them to rectify it so that every party would not lose face. S designed the measures for remedying the rest, which was extra work for himself, and not part of his job. People in China normally try to maintain a harmonious relationship and avoid as much as possible any confrontation.

In A's case in the UK, his company sacked the groundwork subcontractor which was a different form of calculative adjustment with no thought of harmonious relationship. Also, A had thought through the situation and considered that the site manager was too inexperienced which he pointed out to his construction manager. In this sense, he was inner-directed because instead of passively adjusting himself to the situation, he was trying to change things which he thought was not right.

Time as sequence vs. time as synchronization

This distinguishes the way people see events in time. Some see the separated items linked together sequentially others see events in parallel with synchronized completion (Hampden-Turner and Trompenaars, 1995). Construction project in the UK are run in a sequential way to meet a deadline. A's company did this at the expense of less profit. There is no value in elegantly completing a project late.

Achieved status vs. ascribed status

In some achieved status cultures, people's status depends on what they have achieved and how they have performed. But in ascribed status cultures, it depends on other characteristics such as age, seniority, gender, education, potential and strategic role, (Hampden-Turner and Trompenaars, 1995).

It is still very common in China that ascribed status, rather than ability, gets preferential treatment. Education and degrees mean achievements but people respect those with degrees (and particularly with higher education) as part of ascribed status. S is working against the ascribed status as he now works in a world of achieved status,

and he understands that he's got the skills. He has the sense of duty as well. However in the opposite way, S was in a better ascribed position in the relationship with his client (the boss of a town-owned company), who he regarded as an upstart with money but not much education.

Similar things happen here in Britain as well, but in a different way. It is not just about achievements, but about who you are in the class system. In a strange way, people accept that and it also allows people to achieve things. Within the construction industry in Britain, status is given to experience and there is a negative view of education, especially in the SME construction companies like A works for. A himself does not have a degree even though he is professionally qualified.

Equality vs. hierarchy

This dimension deals with the differences in whether the culture believes people should be treated equally so as to elicit from them the best or whether people should respond to the judgement and authority of the hierarchy (Hampden-Turner and Trompenaars, 1995).

The literature presents that power distance is larger in eastern cultures than in the UK (Hofstede, 2001). S had quite a bit of power, but he could not use it with the client and the contractor. He could only modify the situation to find the outcome and to make it work. In some sense, A did the same. For instance, he did not go back the client to ask for more time, whatsoever. They thought the gap between the client and them was better to maintain.

In a bureaucratic system, the hierarchy is the most important thing. Although China is changing to have a flatter organization, hierarchical position is still very important. This includes the seating at a dinning table which will show the status and have to match the hierarchy and power. It would be assumed in the UK that this kind of hierarchy would slow down work because of having to check all the time if you are presenting yourself in a correct way. However in situations it may be more efficient because everyone knows his/her position and just fits into his/her own role without always challenging decisions.

CONCLUSIONS

This pilot study collecting and analysing events through Knowledge-Event Management (KEM) successfully captured the richness of the cultural positions in events. Although only two example events collected from the UK and China were presented, this allowed an analysis through Hampden-Turner and Trompenaars' (1995) seven dimensions of culture to reveal the similarities and differences in culture and construction practice between the countries.

The analysis of the events indicates that the common understandings of Chinese culture being more universalistic, communitarian, out-directed orientated, ascribed status and has larger power distance were evident, while the UK culture was more particularistic, individualistic, inner-directed, achieved status and has shorter power distance. However, there was also evidence of opposite behaviour and in particular in China, there were examples of changes taking place from external influences and the rise of the individual. Thus, in reality the events do not just show the extreme of cultural difference, but examples of the dimensions being in tension with outcomes determined by the particular context and personalities of the respondents. After all, "foreign cultures are not arbitrarily or randomly different from one another. They are

instead mirror images of one another's values, reversals of the order and sequence of looking and learning" (Hampden-Turner and Trompenaars, 2000).

The construction industry has been increasingly internationalized and people in the industry have to work with people from different cultural background. This process of cross-culture analysis will help the practitioners working in an international context and for students being educated for the global construction industry to understand themselves and others better, facilitating a more effective cooperation in the globalized economy. It can be anticipated to produce more interesting results if the UK and the Chinese practitioners can be facilitated to debrief themselves directly on similar cases.

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