



## Sensemaking in the cross-cultural contexts of projects

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### Abstract

Projects are increasingly cross-cultural and complex, both technically and relationally. The diversity of participants enhances differences in perceptions and understanding of meaning of the variety of signals (such as drawings and messages); often, the consequence is reduced performance and conflictual situations. Appreciation of such differences and of how people make sense of their worlds enables participants to appreciate the views of others and so, mitigate potential problems. Hence, a review of sensemaking literature is undertaken regarding individual and collective sensemaking, cultural schemas and the impact of cultural sensemaking on cross-culture international alliances, together with examination of application to contexts of construction, such as project realisation process and construction innovation. Conclusions advocate practical changes to secure heedful sensemaking towards improving relationships on projects and both process and product performance.

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### 1. Introduction

A vital contribution to the domain of project management by Peter Morris is the stressing of the importance of the early stages of a (possible) project (e.g., Morris, 1989, 1998, 2011, 2013; Morris and Hough, 1987; Morris and Jamieson, 2004). During those stages ambiguities are greatest and are interpreted at individual and group levels so that decisions and actions are taken regarding both *product* and *process*. "...in the early stages of a project things are typically complex, intangible and uncertain [ambiguous and equivocal]...Front-end management entails work on a truly wide range of subjects...all of which need to be planned, risk-assessed and organised appropriately." ([ ] added; Morris, 2011: 6).

People construct meaning through *processes* that enable them to make sense of their world by interpretation of the

signals (cues) which they perceive. As it is at the front-end project stages that risks, uncertainties, ambiguity, and unknowns are greatest, project definition tends to be poor (Morris, 2011). Interpretations depend on the signals (objects, artefacts, messages, events, etc.), the processes of perception and interpretation, the situation (context), and the personality of the individual. Given that the world is rather disorderly, construction of meaning involves creation of rational order to secure closer coupling (Weick, 2001). In analysing the Channel Fixed Link, Winch (2013: 729) finds that "an important feature of future-perfect strategizing is the use of artefacts as representations of the future perfect state as part of 'designer culture'".

From any project investment perspective, *product* dominates *process* (Flanagan and Norman, 1983). Since the interaction (interdependence relationship) between process and product, especially the project in use, remains under-investigated and not well understood (Leiringer et al., 2009), much of Morris's (1998, 2013) work concerns the integration of projects into the broader, business context of project executions. The relationships for project executions form chains of agency which are

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amalgamated into networks. Understanding of self and of others in these networks is essential for effective delivery of *products* (projects) and (realisation) *processes* — in particular, concerning interactions (supported by practices and use of material artefacts) through human behaviour.

Research suggests that material artefacts and practices support cognitive work, as an individual's mental representation interacts with a material environment of resources. Examples of cognitive artefacts are drawings, to-do lists, computational devices etc. that facilitate various mental processes to process information (Clark, 2008). For instance, Morris (1998: 16) stated that “The contribution of IT .... through modelling, file sharing and effective communications contributes enormously to the effectiveness of team working”. However, the way in which these artefacts and practices enable individuals and groups to construct new understandings is largely missing from the literature of collective sensemaking (Stigliani and Ravasi, 2012) — an important consideration for the development and use of BIM.

Moreover, “The practice of project management is changing. New technologies and management practices are giving managers new means to improve performance” (Morris, 1998: 16). Thus, innovation in construction has been a popular topic in project management research and past studies have shown that innovation is inherently linked to leadership and strategy making — both of which require the underpinning mechanism of sensemaking, individually as well as collectively, by the innovation champion and the management board. While prospective models of sensemaking have been applied in research of strategy making (Gioia and Thomas, 1996) and innovation (e.g. Rafaeli et al., 2009) to investigate the construction of new understandings of an environment and how to relate to it, this area of future-oriented sensemaking remains undertheorised (Stigliani and Ravasi, 2012).

In particular, the understanding of the transition from individual to group-level prospective sensemaking is fundamental in realising how collective interpretations of new ideas are made and change instigated as a response to the stimuli posed by an ever challenging and complex environment, e.g. innovation in construction. “Understanding how individuals respond to uncertain situations, therefore, requires an understanding of how individuals intuitively assess the situation they perceive, before expressing a response” (Maytorena et al., 2007: 315).

Sensemaking is about connecting cues to interpret what is going on (Maitlis and Sonenshein, 2010) and cues are represented by cultural and social practices, through external images, material artefacts and verbal conversations (see Harris, 1994; Ravasi and Schultz, 2006). For instance, there is a range of cues (e.g. collective history, organisational symbols, consolidated practices) for (re)interpreting and (re)evaluating the defining attributes of an organisation through a retrospective rationalisation of the past (Ravasi and Schultz, 2006). As Weick (1985: 382–3) maintained that definitions of organisational culture “are retrospective, summarizing patterns in past decisions and actions”, they are “embodied in actions of judging, creating, justifying, affirming and sanctioning” and that these definitions provide “continuity, identity, and a

consistent way of ordering the world.” Therefore, culture can be seen as a sensemaking device that cues existing discursive practices to serve as organising principles through which actors enact reality (Long and Mills, 2010); in which case, sensemaking is limited to the extent that the label chosen for each metaphor cues the deeper assumptions, or rules, that give meaning to the word and hence shape the reality described by it (Long and Mills, 2010). Weick (2001: 340) also asserts that “Making meaning is an issue of culture”.

Hence, this paper focuses on the impacts of culture on sensemaking to discuss two aspects:

- (1) how culture (organisational, professional etc.) underpins collective sensemaking via schemas; and
- (2) implications of cultural sensemaking where cross-cultural issues – cultural ambiguity, interpretative schemas – affect sensemaking and sensegiving in managing construction projects.

## 2. Sensemaking

Individuals are continuously concerned with the question, “what is going on?” Hence, whether people are involved in social networks, organisational settings, or life in general, they are individually and interactively engaged in processes of sensemaking. “Sensemaking involves the ongoing, retrospective development of plausible images that rationalize what people are doing” (Weick et al., 2005: 409). Thus, in academic terms, sensemaking is a process of social construction that occurs when discrepant cues interrupt individuals' ongoing activity, and involves the retrospective development of plausible meanings that rationalise what people are doing. “Central to the development of plausible meanings is the bracketing of cues from the environment, and the interpretation of those cues based on salient frames. Sensemaking is thus about connecting cues and frames to create an account of what is going on” (Maitlis and Sonenshein, 2010: 551).

However, sensemaking accounts take place within sociocultural contexts (O'Leary and Chia, 2007) to satisfy individuals' needs for achieving coherence, consistency and legitimacy in thoughts and actions. These mental connections have to be continuously enacted, reenacted, and modified by alternative experiences to proliferate interpretative schemas. O'Leary and Chia (2007) argue that equivocality is a basic condition of organisational life (an element of ontology), therefore selective censoring is a fundamental feature of the sensemaking process, i.e., an individual will actively select an aspect of experience and censor what s/he does not wish to attend to. Thus, Dunning and Bansal (1997) suggest that culture is an ‘informal institution’ that represents collective subjectivity, constrains behaviour, and structures political, economic and social interactions. “(T)he episteme of a culture organizes our sensorium ..... in such a way that we are made to attend to some types of stimuli rather than others by making an issue of certain ones while relatively neglecting other ones” (O'Leary and Chia, 2007: 395). Indeed, Morris (2013: 13) asserts that “...the effect of human behaviour

on most project management knowledge areas...would suggest that more interpretive epistemologies are needed”.

The process of sensemaking is rooted in phenomenological ontology and is inexorably nested in culture, both national and organisational (Harris, 1994; Ott, 1989). Many studies of culture are comparative and so, there is a need to adopt a formal, structural, etc approach to facilitate comparison and, for pragmatism, parsimony of dimensions (Williamson, 2002) (emic approaches indicate rather large numbers of dimensions to represent each culture which would yield a very large array for comparative studies). Thus, whether investigating national, societal, or organisational culture, realist ontology and positivist epistemology with nomothetic methodology are employed most commonly (Denison, 2015; Hofstede, 2001; Hofstede et al., 2010; House et al., 2001). More generally, Morris (2013) accords with that perspective in stating “Critical Realism seems to address this [knowledge] problem sensibly, proposing that there is a reality out there but that our knowledge of it is inevitably partial...” ([ ] added; p. 14). Consequently, as individuals endeavour to make sense of the continuous, complex, ambiguous and equivocal dynamics of project management, the adoption of ‘becoming ontology’ is advocated (Winter et al., 2006).

### 2.1. Sensemaking and interpretation

Early sensemaking theory focuses on discrepancies between a current and an expected state of the world (e.g. Weick, 1995) to investigate individuals’ responses to unfamiliar events where situations do not fit their available knowledge structures, i.e., individuals respond to cues (“...details in the environment” — Weick, 2009: 7) that disrupt the predictable flow of experience (Barr, 1998). “These cues trigger conscious attempts to interpret unexpected occurrences retrospectively and to bring order into ambiguous realities open to multiple interpretations” (Stigliani and Ravasi, 2012: 1233).

People often combine experience with their perceptions of new situations to yield hybrid combinations in a process of *bricolage* (innovatively ‘making do’ with what is available) (Scott, 2014), i.e., meaning is mediated by cognitive frames. Thus, sensemaking occurs in three processes: scanning, interpreting, and responding (Thomas et al., 1993): scanning involves information gathering (antecedent to interpretation and action), interpretation involves the act of carving out meaning from ambiguous cues (Porac and Thomas, 2002) and responding involves action determined by decision making stances based on cognitive frames (Hahn et al., 2014). Hahn et al. (2014: 478) believe that different cognitive frames lead managers to adopt different decision-making stances (e.g., pragmatic stance or prudent stance), and stance is defined as “a decision maker’s rationalised mental attitude toward an issue, which predisposes the individual to act in certain ways”. Hence, cognitive frames (with their differences in content and structure) affect the stages of the sensemaking process of ambiguous issues, i.e., individual cognition plays an important role in managerial decision making via an array of alternative cognitive frames.

However, Weick (2001, 2009) offers a perspective which separates actions and decisions. He considers that sensemaking should be used, heedfully and mindfully, to indicate appropriate actions and directions for the future (following analyses of crises using psychological theory). Decisions represent commitment to the path decided and, often, justifications comprise post hoc rationalisation that can “...turn into preferences that control subsequent attention and action” (Weick, 2001: 24). “...(S)ets of justifications should form coherent and workable systems of interpretation that create a corporate culture” (Weick, 2001: 78). Therefore, cultures promote frameworks for what is taken into account. The labels are given to the perceived content of signals/cues, and how the contents are understood (given meaning; reduce ambiguity) and used, direct action. Thus, “...labels are often sufficient to mobilize a response that fulfils the prophesy made by the label” (Weick, 2001: 49). As self-fulfilling prophesies are likely, sensemaking concerns means of determining meanings of events, etc. to indicate future pathways and foster actions which, then, are subject to further interpretation in context. That is to say (1) decisions are points of inflection at which a course of action is supposedly determined in rational pursuit of some goals, and (2) decisions tend to invoke more categorical choice of future pathways and so, involve commitment (and defence in the face of criticism); in either case, self-fulfilling prophesies are likely (Winch and Maytorena, 2009: 186; and discussed by, e.g., Weick, 2001).

Sensemaking, also, may involve forward-looking thinking which is referred as prospective or future-oriented sensemaking (Gephart et al., 2010) where ambiguous situations require individuals to develop novel understandings to “structure the future by imagining some desirable (albeit ill-defined) state” (Gioia and Mehra, 1996: 1229). In project management, Morris (2013: 18) holds that “one of the first tasks in establishing the project is to develop its strategy and ensure that this is effectively aligned with the sponsor’s aims and strategy”. In strategising, prospective sensemaking takes place when “(T)he refinement of emerging interpretations results from cycles of sensemaking and sensegiving, as group members attempt to influence other actors’ interpretations” (Stigliani and Ravasi, 2012: 1234) in ambiguous situations.

Ambiguities are abundant during changes or crises (Maitlis and Sonenshein, 2010) when organisations and individuals respond to stimuli caused by either or both of external and internal forces. Examples of response include innovation and organisational culture change — which are topics often investigated in construction (e.g. Biggs and Biggs, 2013; Bossink, 2004). Innovation in a low-technology sector, such as construction, includes mostly hidden innovation, as seen in business models and procurement methods (NESTA, 2008) which, arguably, focuses more on the *process* than the *product*. During the process of innovation (adoption, diffusion etc. as in BIM implementation), ambiguities abound and sensemaking is vitally important to the individuals (and groups) involved in the process.

As sensemaking is a process in which people attempt to interpret novel and ambiguous situations in a complex world,

individual level (Weick, 1995) and group-level sensemaking (Balogun and Johnson, 2004; Maitlis, 2005) are related, and are determined by cognitive frames.

## 2.2. Cognitive frames — sensemaking and sensegiving

Walsh (1995) distinguishes between the content and the structure of a cognitive frame. The structure and content of a cognitive frame lead to a particular interpretation of a situation and, in turn, to a particular managerial response (Tikkanen et al., 2005). While cognitive content “consists of the things he or she knows, assumes and believes,” cognitive structure is “how the content is arranged, connected or studied in the executive’s mind” (Finkelstein and Hambrick, 1996: 57). Hahn et al. (2014) investigate how differences in cognitive content and structure influence the three stages of sensemaking in scanning, interpreting and responding, and propose that managers with different cognitive frames adopt varied decision making stances to interpret ambiguous issues (such as strategising). Cognitive frames act as “cognitive filters that admit certain bits of information into the strategizing process while excluding others” (Porac and Thomas, 2002: 178).

There is increasing research emphasising sensemaking capabilities as critical to what managers do in many different areas, such as championing change and implementing strategic change (e.g. Gioia and Chitpeddi, 1991). For instance, Rouleau and Balogun (2011) argue that skilled managers are able to use their knowledge of their organisational context and their colleagues to influence those around them to adopt their point of view — as in developing a strong culture to foster competitive advantage and performance (Cox et al., 2004). Managers are engaged in intertwined cycles of interpretation and action, i.e., where interpretation shapes action and vice versa in a reciprocal relationship through time, which is also intertwined with, and influenced by, the simultaneous cycles of interpretation and action of others. Empirical research often conceptualises sensemaking as a social process of meaning construction and reconstruction through which managers create sense for themselves (sensemaking) as well as creating sense for others (sensegiving) of their changing organisational context and surroundings (e.g. Balogun and Johnson, 2004; Maitlis and Sonenshein, 2010). Thus, the processes and outcomes of (organisational) strategic sensemaking are shaped by the intertwined and mutually reinforcing reciprocal/multiple acts of individual sensemaking and sensegiving. Maitlis (2005) further states that when attempting to influence others’ understanding of an issue through sensegiving, the interactions between diverse stakeholders are relevant and must be taken into account.

Rouleau and Balogun (2011: 956) argue that “strategic sensemaking does not exist just in cognitive structures or in routines and systems”; rather, it is constituted and reconstituted in ongoing discursive activities of middle managers who craft and share messages and meanings by referring to a complex maze of knowledge. Their study of a multinational engineering company involves longitudinal real-time tracking of change projects. The two discursive activities, performing the conversation and setting

the scene (in which middle managers enact sensemaking and sensegiving), are underpinned by the managers’ ability to draw on symbolic and verbal representation of the *sociocultural* systems they belong to (e.g. private and public organisations from different countries).

Thus, symbolic representation of artefacts helps individuals to make sense of (i.e. sensemaking) and give sense to (i.e. sensegiving) an organisation or social structure. However, Stigliani and Ravasi (2012) argue that little is known of the social interaction and cognitive work that underpin the transition between individual development of new interpretations and collective engagement in giving a sense of emerging interpretations to relevant stakeholders, i.e., research focus is suggested to be on the transition from individual to group level sensemaking (both of which are underpinned by cultural beliefs and values).

## 3. Cultural sensemaking

Culture underpins the collective construction of meanings through convergence of common interpretation — collective sensemaking. Generally defined as the shared beliefs, values, and assumptions that guide sensemaking and action in organisations (Ott, 1989), organisational culture encompasses both individual and collective sensemaking.

### 3.1. Collective sensemaking

According to Weick et al. (2005), collective sensemaking occurs as individuals exchange provisional understandings and try to agree on consensual interpretations and a course of action. The process begins when people confront situations they cannot interpret readily using available mental structures (Kiesler and Sproull, 1982); interpretive efforts are then spent to create an account of “what is going on”. Such collective construction of meanings generally arises from the sharing of accounts — descriptive construction of reality embodying possible interpretations of events and situations (Maitlis, 2005; Maitlis and Lawrence, 2007).

Stigliani and Ravasi (2012) point out that (1) collective sensemaking research placed emphasis on conversational practices such as argumentation (Weick, 1995), metaphorical communication (Cornelissen, 2012) and the exchange of narratives (Sonenshein, 2010) and accounts (Maitlis, 2005) that support convergence around a common interpretation of unexpected or ambiguous events; and (2) individuals also make use of material practices and artefacts to support conversational practices, e.g. drawings and prototypes (Carlile, 2002), visual maps (Doyle and Sims, 2002), and Lego bricks (Oliver and Roos, 2007).

Through conversational practices, individuals exchange, combine and construct interpretations as they collectively engage in prospective sensemaking (Gioia and Mehra, 1996) which underpins future-oriented group processes, e.g., strategy making, and the planning of organisational change. Research on material artefacts as boundary objects shows how artefacts facilitate the transfer of understandings across different communities, e.g., boundary objects play an important role in

construction organisations (Styhre and Gluch, 2010) and construction project teams (Phelps and Reddy, 2009) as vehicles for the sharing of knowledge. “(B)oundary objects extend beyond their traditional role as information artifacts used to communicate between teams to serve a more influential role as guides for team collaboration” (Phelps and Reddy, 2009: 125).

Stigliani and Ravasi (2012: 1253) extend the notion of the role of material artefacts as interactive tools that “support the transition from individual to collective sensemaking by facilitating the emergence and the resolution of “representational gaps” among team members (Cronin and Weingart, 2007) and their collective convergence around new interpretations”. What makes individual and collective interpretation and sensemaking possible is the underlying code of a culture that governs values and *schemas* of perception (O’Leary and Chia, 2007).

### 3.2. Schemas

Louis and Sutton (1991) define culture as shared schemas. Schemas refer to the dynamic, cognitive knowledge structures regarding specific concepts/entities used by individuals to encode/process incoming information (Markus, 1977). As an individual’s knowledge is retained and organised in schemas which direct information acquisition and processing (Harris, 1994), the concept of schema can be defined as stocks of organised knowledge, which evolve gradually, become more complex, and are related to personal experiences and associated feelings (Ivanova and Torkkeli, 2013). Schema-guided sensemaking can occur relatively unconsciously (e.g. automatic processing with little conscious intervention or reconciliation) or consciously (e.g. schema manipulation, tacit and reflective processing) — as in Kahneman’s (2011) ‘system 1’ and ‘system 2’ where the intuitive/auto practice and the cognitive/thoughtful effort occur in systems thinking.

Schema theory offers a perspective which highlights the significance of individual-level dynamics in organisational culture research. Harris (1994) proposes that organisational culture’s influence on an individual’s sensemaking is revealed in the operation of a patterned system of organisation-specific schemas, and proposes five categories of schemas to capture the range of knowledge needed for sensemaking. Self schemas refer to individuals’ generalisations regarding aspects of themselves in the organisational context, such as roles and behaviour, which direct their responses to organisational stimuli consistent with self. Person schemas are organised impressions and expectations regarding behaviours and preferences of other individuals, e.g. “my boss is extroverted” and “she is in management”. Organisation schemas correspond most closely to an individual’s knowledge of his/her organisation’s culture and refer to knowledge regarding organisational groups as entities (e.g. headquarters) rather than individual members (e.g. an executive at headquarters). Object/concept schemas guide the interpretation of physical and verbal cultural artefacts to facilitate organisational communication by providing a framework within which verbal terms can be understood. Event schemas refer to

knowledge regarding social contexts and situations to guide interpretation of behavioural artefacts such as ceremonies and rituals. Taken together, these five categories of schemas capture the range of information that individuals use to make sense of organisational life.

As individuals’ schemas can become similar as a result of shared experience and shared exposure to social cues regarding others’ constructions of reality, Harris (1994: 311) develops a schema-based perspective on cultural sensemaking; “much of the individual experience of culture is a product of an intrapsychic mental dialogue between self and culturally relevant others”. Organisation culture is, thus, reflected in congruent schemas which shape (and are shaped by) the sensemaking process between self and others.

### 3.3. Cultural schemas and culturally influenced sensemaking

While organisational schemas are referred as shared frames of reference amongst organisation members (Harris, 1994), the groups with which the individual interacts represent different ‘cultural circles’ (national, organisational, professional etc.) and, perhaps, different traditional heritage circles. As individuals’ cultural backgrounds and understandings are pluralistic, certain actions hold different meanings in intercultural relationships. Hence, a major focus of culture studies in business research is on the constitutive aspects of culture, which are socially constructed and form systems of meaning that define actors’ interests.

Thus, Ivanova and Torkkeli (2013: 717) apply a cultural perspective on sensemaking of interactions within business relationships, where culture is treated “as a system of meaningful knowledge, i.e. a repertoire of cultural schemas, used by individuals in their sensemaking of business interaction”. Cultural schemas are cognitive structures that constitute knowledge for interaction in a certain cultural context (see Nishida, 1999) or a certain cultural group. Managers have significant culturally based differences in their managerial understanding of business interactions (e.g., Das and Kumar, 2010) and divergent cultural schemas differ in metaphors and idioms used for symbolic expression, therefore, the difference in application of cultural schemas (and communication styles) may lead to misunderstandings and problems in business interactions (Ivanova and Torkkeli, 2013).

As Morris (1998, 2013) highlighted the business context of construction projects, the understanding of cultural schemas in sensemaking is crucial for managing international projects and construction networks/alliances.

Sensemaking is applied in management research to business network studies (e.g. Colville and Pye, 2010), but the role of culture is, often, not considered. Ivanova and Torkkeli (2013) argue that cultural context (whether national or organisational culture) imbues business interactions — managers apply their cultural schemas when making sense of business relationships and, thus, cultural differences manifest themselves in the sensemaking of interaction events. Their argument is that, first, sensemaking is the mechanism by which an individual attributes meaning to events, and, second, culture is one of the basic tools

for cognitive meaning-making; therefore, managerial sensemaking of interaction events, particularly in an intercultural context, stems from an individual's cultural background. That perspective, which is consistent with Harris (1994), regards “cultural sensemaking as a process in which an individual cognitively applies cultural constructs in order to make sense of an inter-organisational interaction event and ascribe meaning to it” (Ivanova and Torkkeli, 2013: 718). Thus, individual cultural schemas incorporate organisational, professional, national (and other levels of culture), plus historical/traditional cultural knowledge. Endicott et al. (2003) assert that the more intercultural experience the individual has, the greater his/her repertoire of cultural schemas will be; that accords with the importance of international (inter-cultural) experience for open-mindedness in managing international projects (Orr and Scott, 2011), especially when projects are viewed as business networks of cross-cultural participants.

### 3.4. Networks

Project management has ventured into the socio-technical research trend in exploring the network and knowledge economy, alliances, technological complexity, culture etc. Those aspects are deeply intertwined in multifaceted network relationships in the cognitive aspects of management (e.g. organisational learning, dynamic capabilities, knowledge management).

Usually, networks in construction are studied from the perspectives of collaboration (see Smyth and Pryke, 2008), information/knowledge transfer (Carlan et al., 2012), value networks (Anvuur et al., 2011), overseas construction (Park et al., 2011) and, in particular, innovation (e.g. Andersen et al., 2004; Bossink, 2004; Bygballe and Ingemansson, 2014; Wu et al., 2008). However, relatively little has been done to understand how organisations make sense of and navigate in networks. “In techno-economic networks groups with differing cognitive schemas (views on innovation or technology) are linked relationships that are shaped and defined by intermediaries. Intermediaries are defined as everything (objects, things or structures) passing between actors defining their relationships” (Thrane et al., 2010: 934).

Take innovation network as an example. Business applications concerning inventions and innovative ideas are often ambiguous about the possible causal relationships between existing and emergent knowledge. An individual has a specific cognitive representation of the network (based on network position, role, experience) which guides his/her behaviour in the network and influences ongoing sensemaking. Thrane et al. (2010: 933) offer the combined perspective of innovation as a cognitive process of incorporating technological, services and strategic innovation, thus, analysing “innovation as a network defined and shaped by intermediaries open up for an analysis of more reflexive and open search processes with multiple actors and organisational negotiation...”. As organisations make sense of their network environments and influence the sensemaking of other actors in the network (Moller, 2010), organisations with advanced sensemaking capability can anticipate the potential innovation-development paths to give them strategic advantage over other organisations.

## 4. Cross cultural contexts of projects

Morris has, consistently, emphasised the importance of context for determination of project contents and processes (Morris, 1998, 2013). Projects are embedded in the cultures of the organisations which participate in their realisation and use and, further, in the national cultures involved which, together, constitute the fundamentals of context through beliefs/assumptions, values, practices, language, behaviours. (Hofstede et al., 2010; Schein, 2004). In considering the role of culture in international business, usually, a functionalistic approach has been adopted to construct culture models (e.g. Leung et al., 2005). For instance, Schneider (2000: 26) describes organisational culture as “how we do things around here in order to succeed”, (implying causality of organisational culture on performance) and Weick and Sutcliffe (2001: 121–2) as “what we expect around here”. The concern over context (environment) and causality reflects the positivist/functionalist — social constructivist/interpretivist debate: whether environmental factors causally impact the organisation or whether (large) organisations causally impact their environment (Weick, 2001, 2009); whether culture is something an organisation *has* or *is* (Smirchich, 1983); whether culture affects project/organisational performance or vice-versa (Hofstede, 2001).

Despite the contestations, certain fundamentals of culture are accepted generally — that it is a human group construct, that its base lies in deep-seated beliefs/assumptions, that it is long-term, and change is difficult to effect (Hofstede, 2001; Ogbonna and Harris, 1998; Schein, 2004).<sup>2</sup> Thus, in intercultural encounters, the persons involved may modify their behaviour (BMod) in an effort to accommodate cultural differences (a fairly superficial form of cultural accommodation)<sup>3</sup> but acculturation (integrating into a different culture) requires immersion in the other culture for a long period (Navas et al., 2007). Commensurately, only long-term, major projects can ‘brew’ their own organisational culture; for most projects, the culture(s) which is evident is an amalgam of the cultures of the dominant participant organisation(s) (and powerful agents in the project governance) yielding a ‘project atmosphere’ (Liu and Fellows, 2008).

### 4.1. Levels of culture

Hofstede (2001) and others (e.g. Lu, 2006) have portrayed and discussed the quasi-continuum of cultural ‘levels’ to embrace a taxonomy including society and ethnicity relating to *nation*, and occupation, profession, firm, industry and project relating to *organisation*. These levels are the primary places at which socialisation occurs, and the relative importances of values and practices (comprising heroes, symbols, and rituals) impact on the development/awareness of culture (Hofstede,

<sup>2</sup> As culture is a construct, it does not exist in a tangible way but occurs through its constituent variables — the beliefs/assumptions and values which determine the (national) culture; thus, changing culture requires changes in those fundamental variables.

<sup>3</sup> BMod can occur ‘immediately’ in response to a change in rules/legislation but it is a change in behaviour only, not a change in the beliefs and values which underpin a person's ‘natural’ behaviour.

2001: 394). That typology of culture levels raises a number of issues. Lu (2006: 204) asserts that culture exists at multiple levels, and “on any given attribute, the within-culture variance may be as large as or even larger than the between-culture variance. Therefore, culture at the societal level involves mainstream average tendencies but cannot involve all behaviors of all people in any culture.”

That aspect is complicated further through globalisation and human migration — both occupationally and geographically. Chinese persons in mainland China, Taiwan, Hong Kong, and in other countries are of the same ethnicity but different life contexts; quantity surveyors in consultancy practices and those in contracting firms do different jobs in the same profession; site engineers and (head office) design engineers do different jobs in the same profession and firm. They have different ‘lenses’ for interpretation. Movements between groups may yield additional considerations, as do the varying impacts of gender and generational groups. The essence is to determine (and to study) the group in relation to the research question, and not to conflate, i.e., avoid the ecological fallacy.

The levels of culture are subject to embedding. Although gender and generational groups are constituents of a national culture, their changing (power) position within it leads to evolution of that culture. Organisational cultures are embedded in the national culture of the organisation’s head office (governance base), although internationalisation and glocalisation (global brand with local tuning) of major organisations lead to embedding in other national cultures also. (For discussion of embeddedness – how social structure affects economic life through cognitive, cultural, structural, and political institutions – see Dequech, 2003; Schwartz, 2009).<sup>4</sup>

National culture is believed to impact on organisational culture; notably, from a functionalistic approach, Hofstede (2001: 375) determines that “...power distance [is associated] with “concentration of authority” (centralization) and uncertainty avoidance with “structuring of activities” (formalization)” ([ ] added); although the extent of impact is contested (see: Winch et al., 1997; Gerhart, 2008). In a case study of the channel tunnel project organisation, Winch et al. (1997), while generally supporting the findings of Hofstede (1980) on national culture relativities, reject the hypotheses relating to organisational structure – PDI vs. UAI (French more bureaucratic) and motivation – MAS vs. UAI (British more individual performance oriented). However, their scores on Hofstede’s four dimensions were rather different from those of Hofstede (1980) – most were closer together, especially PDI – perhaps due to sampling managers only within the single organisation of Transmanche-Link. A further consideration is that variances of each measure are not noted, especially in view of the assertion of Au (2000) that intracultural variability may exceed

intercultural variability. Of much value for research is Winch et al.’s (1997) four observations requiring further research, especially the relationship of national culture to organisational culture and behaviour, etc. Their conclusion that the “... assumption...that national culture strongly affects behaviour in organizations...has been found wanting...”, echoed by Gerhart (2008), is acknowledged to be potentially due to issues of the restricted sample (with possible bias), thereby representing a sub-set of the broader national culture.

#### 4.2. Projects

Construction projects are invariably complex and laced with ambiguities and uncertainties. Projects are realised through TMOs (temporary multi-organisations) which are characterised as shifting multi-goal coalitions operating with fluid power structures (Liu et al., 2003) to undertake a myriad of diverse individual transactions that are variously brought together in project realisation processes. The interdependencies between those transactions and the organisations participating through agents of various types (employees, consultants, designers, regulators, constructors), generate the complexity of the project realisation system (Miller and Hobbs, 2005) leading to the well-known issues of governance, integration (communication, coordination, cooperation), and commitment to impact performance and outcome (success at first level, and satisfaction at second level) (Liu and Walker, 1998).

Research on project management stresses the need for “a flexible strategic process” (Miller and Hobbs, 2005: 47) in which governance adapts and evolves in response to changes in the project environment, emergence of unforeseen events, and requirements of the different stages in project realisation (Miller and Hobbs, 2005; Ruuska et al., 2011) — a reflection of the impact of related formal systems (e.g., procurement models in RIBA, 2013). Those systems constitute frameworks/models for projects which incorporate formal *pinch points* (gateways, decision points in OGC, 2007) for important approvals etc. during the progression of the project. Thus, the pinch points denote the required culmination of each project stage in which sensemaking and sensegiving occur but the model remains committed to linear straight-jacketing of the project’s development. Such constraining is occasioned by the major realisation parameters of time and cost but, as is well-known, leads to detrimental project and realisation performance (over-runs and poor quality) and mal-approvals (Flyvbjerg, 2006, 2009; Morris, 1989). “Only a few engineering projects are ever completed exactly as set out in the initial plans and specifications” (Brown and Elms, 2013: 178).

On projects, the important aspects of sensemaking in the cultural context are to achieve (1) common understanding (the issue of interpretive schemas and congruent sensemaking), (2) trust and commitment (to foster a common communication base for cultural sensemaking) and (3) appreciation of interdependency (the issue of securing behaviours conducive to performance enhancement, including accommodation of organisational/national cultural differences).

<sup>4</sup> Most literature on embeddedness examines the impact of social institutions (notably structural) on economic activities; however, organisational culture is, to a contested extent, (similarly) embedded in national culture — of home country and, internationally, of local offices and project sites. See also, Orr and Levitt (2011).

#### 4.2.1. Common understanding

Project briefing is problematic, often hurried and linear such that common understanding, and acceptance of optimal requirements is rather rare (but may be imposed by powerful participants). It is important to note that power differentials play a major role in explaining flawed sensemaking during crises (Maitlis and Sonenshein, 2010). In addition, what is comfortable for designers may not always accord with the client's or the contextual needs; ostensibly, project managers tailor services to the context but, in reality, tailor them to their own 'comfort zones', i.e., use of 'experience' (Wells and Smyth, 2011). Thus, given the "difficulty of eliciting and managing requirements...by the time users receive the product, their needs may well have changed, thus either the requirements/scope have to change or the delivered product functionality has to be accepted as not adequate..." (Morris, 2013: 10).

The extensive requirements of comprehension amongst project participants necessitate significant translations between communities of knowledge and practice (organisational, and, increasingly, national, cultures) and incorporate boundary management activities to enable groups to understand the array of emerging requirements — which are expressed in languages that differ in varying degrees (Fellows and Liu, 2012). As decisions are made under conditions of risk, uncertainty, limited ignorance, ambiguity, and equivocality, sensemaking activities are central in determining meaning and, hence, outcomes. However, it is essential that such sensemaking is open-minded and heedful, with cultural empathy and informed of the prevailing (local) social institutions, otherwise it can operate as a major impediment through closed-mindedness with ethnocentric, experiential bias (see Orr and Scott, 2011). However, Weick (2001: 279) cautions that "A culture that encourages individualism, survival of the fittest, macho heroics, and can-do reactions will often neglect heedful practice of representation and subordination" — thus, it seems that Western construction organisations have a problem.

#### 4.2.2. Trust and commitment

While contracts are acknowledged as important components of business relationships, it is generally accepted that informal understanding based on trust provides more powerful and successful relationship-building. Higher order considerations/behaviour, notably, trust and commitment, operate to foster development of a common communication base and sensemaking processes amongst participants (Weick, 2009). For instance, Adobor (2005) explores the theoretical proposition that trust creation is a process of sensemaking in interfirm alliances when small cues are enlarged through the incremental accumulation of evidence. However, trust building in partnerships may be self-fulfilling prophecy (Adobor, 2005) — as initial expectations positively impact behaviour and trust building, and cues are then enlarged.

Trust and commitment are enhanced through long-term relationships, according to the theory of familiarity (Aldrich, 1971; Das and Teng, 1998). Unfortunately, despite advocacy of partnering, etc., in the construction industry, such long term relationship developments are severely restricted through the

lack of continuity of employment of organisations and personnel over series of projects (programmes) to foster 'organisational learning'.

Commitment serves as a foundation for sensemaking (Maitlis and Sonenshein, 2010: 562) because "individuals often generate explanations retrospectively to justify actions to which they have committed". However, the organisation (embedded in a social system) can become blinded by the public commitment of a few to secrecy thereby limiting future repertoires of meanings and actions. Sensemaking is a process of social construction; it is important to understand both the individual level sensemaking, and the social processes through which shared meanings (and sense) emerge.

#### 4.2.3. Appreciation of interdependency

The current situation is encapsulated by Owen et al. (2010: 235) who note that "The increased performance requirements and complexity of constructed facilities require additional specialists and increase the need for integration skills. Multi-skilling is rare and document-based thinking is prevalent... Appreciation of linkages between work products in different functional areas, and the ramifications of this interdependency, is limited". Thus, it seems appropriate to regard all projects as joint ventures as the performance achieved depends on both self and other participants. However, differences in the national culture of joint ventures/alliancing firms give rise to cultural ambiguity — "the greater the cultural distance between the national cultures of the alliancing firms, the greater the potential for cultural ambiguity between them" (Kumar and Patriotta, 2011: 523).

Kumar and Patriotta (2011) argue that cultural ambiguity manifests in expectation gaps (e.g. different understandings of trust-based business relationships) that cannot be resolved through individuals' sensemaking. Therefore, interdependence must be recognised to secure the behaviours (collaboration, heedfulness, etc.) conducive to performance enhancement (see, e.g., Nicolini, 2002; Dainty et al., 2005), including accommodation of organisational and national cultural differences.

#### 4.3. National culture and cultural sensemaking

There is widespread acceptance of the importance of national culture in shaping managerial behaviour and alliance dynamics (e.g. Earley, 1993; Kumar and Das, 2009). Researchers have examined the relationships between national culture and strategy formulation (Schneider, 1989), alliance negotiation (Kumar and Patriotta, 2011) etc. In particular, Das and Kumar (2010: 26) argue for the role of national culture over organisational culture in shaping alliance evolution, "it is important to recognise that national cultural differences reflect differences in core assumptions across culture while corporate cultural differences are indicative of differences in organisational practices across cultures". It is argued that differences in core assumptions are relatively enduring but differences in practices have a transient character, thus, "while corporate culture may readily modify the behaviour of organisational members, it is



unlikely to be able to redefine the basic assumptions of national culture” (Das and Kumar (2010: 26)).

Hofstede’s work (e.g. Hofstede, 1980), although functionalistic, has gained widespread adoption as a predominant way of looking at culture (Das and Kumar, 2010; Venaik and Brewer, 2010); however, criticisms also abound (e.g. Fang, 2003; McSweeney, 2002). Triandis (1995) suggests that the choice of culture definition depends on the goals of the researcher. As there is no one all-encompassing definition of culture, it can be viewed as consisting of two components: cognitive and behavioural. The behavioural component focuses on interactional patterns extant in a particular culture, and the cognitive component focuses on meaning, where a series of rules is implied that provides the basis for making interpretations to ascertain meaning (Das and Kumar, 2010) — i.e., interpretive schemas are rooted in the cognitive component of culture.

Thus, an alternative view from Hofstede’s functionalistic approach (which, according to Das and Kumar, 2010, is more behavioural than cognitive in content) is to argue that culture is seen as ‘a repertoire of cultural schemas’ (Ivanova and Torkkeli, 2013) without the restriction to view it as ‘national’ or ‘organisational’ culture, and individuals make use of cultural schemas to make sense of business relationships and interactions. That repertoire of cultural schemas assists individuals when making sense of certain intercultural encounters (Friedman and Antal, 2005).

As inter-personal sensemaking occurs at all stages of construction alliance evolution, research needs to focus on the impact of conflicting interpretive schemas embedded in different cultures (e.g. national, organisation, professional). In particular, the notion of cultural sensemaking in cross-national business alliances is the focus of many researchers, e.g., Das and Kumar (2010), Cardon et al. (2011), and Kumar and Patriotta (2011).

As any given situation is subject to multiple interpretations, Das and Kumar (2010) argue that the differences in frames of reference amongst alliance participants who socialised in different national cultures may lead them to interpret alliance functioning differently and result in interactional conflict. “Interpretive schemas operate as shared, fundamental (though often implicit) assumptions about why events happen as they do and how people are to act in different situations” (Bartunek, 1984: 355); thus, interpretive schemas are tools to cope with ambiguity and uncertainty when interruptions are caused by (1) the failure of an expected event to occur, and (2) the occurrence of an unexpected event. Das and Kumar (2010) propose that the interpretive schemas (as a result of interruptions) can be labelled as (1) ‘sensemaking of chaos’ which operates through the principle of ‘complexity reduction’ to understand the drivers of complexity where agents act upon it directly, and (2) ‘sensemaking in chaos’ which assumes chaos is normal where agents must thrive in ambiguity as they cope with interruptions through the process of ‘complexity absorption’.

In the complex environment of projects, especially in international alliances where cross-national partners are involved, it is of much significance to extend research into sensemaking from the perspectives of cultural (interpretive) schemas.

## 5. Conclusion

It is widely believed that culture impacts performance but what is less well understood is the impact mechanisms and consequences and their causal relationships are yet to be determined. The properties of the main culture theories are subject to limitations in application — taxonomies, typologies and dimensions can be restrictive and constraining in determining how projects are executed; fundamental, emic investigations of projects (as in ethnomethodology, grounded theory) seem appropriate to help reveal the dynamic trajectories of realisation performance and what impacts the variables involved (see also: Brookes et al., 2014).

Much learning and decision making in construction is experiential — which reinforces a primary element of sense-making. Individuals’ sensemaking is enhanced through reflective practice and recognition of the emergent and iterative nature of situations (context, objectives and parameters) — implicitly acknowledging the applicability of bounded rationality. That is in stark contrast to many models of project realisation which seek to fix required performance early and pursue linearity of progression through the process. However, the trajectory of the development of a project is dependent on power-plays amongst the participants.

Further complication is occasioned through equivocality/indexicality and lack of open-minded and heedful sensemaking and communication practices which should aim to ensure that cues/signals are given common meaning, appropriate to the prevailing institutional context, amongst the project participants — from strategic goals to operational design details and instructions. Sensemaking accounts take place within sociocultural contexts. Cultural artefacts and practices (e.g. design drawings, procurement models) serve as context for sensemaking and sensegiving by providing people with a range of cues for (re)interpreting the ambiguities in a complex environment. That is of particular importance in international alliances where the notion of cultural sensemaking is affected by differences in core assumptions inherent in national cultures.

Culture impacts sensemaking at both organisational and national culture levels. Selective censoring is a fundamental feature of the sensemaking process as people censor what they do not wish to address. Culture (national, organisational etc.) plays a role as a source of cues supporting individual- and group-level sensemaking. Individuals evaluate and re-evaluate their conceptualisation of the situation and carry out sense-giving actions aimed at effecting shared understandings/consensual interpretations, i.e., collective sensemaking.

As culture is a group construct; an important question is ‘what group’? The perspectives, and, hence, perceptions, vary dependant on the philosophical base adopted – anthropological, sociological – and the purpose of the question — whether concerning the nature of a particular (culture) group or comparison across two or more groups; the third aspect is the level of analysis — usually national or organisational. As project realisations occur through TMOs, the lives of which are short and the involvement of many participants is even shorter, the concept of project culture is problematic. The realities of

practices in project realisations still fall far short of the rhetoric of win–win, collaborative teams and partnering, and flexible governance, especially in the face of major unknowns and decisions. That applies also to recognising the importance of culture in establishing project processes and understanding to accommodate the diversity of cultures which occur on every project.

### Conflict of interest

The authors declare that there are no conflict of interest.

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