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An investigation into the merits of encouraging conflict in the construction industry

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Considerable energy is being directed towards an indiscriminate policy of conflict reduction in the construction industry but the problem of construction conflict may be in its management rather than in its incidence. Conflict reduction is a response to the industry's inability to manage conflict constructively, and it may be more productive to focus upon building skills in this area as a basis for encouraging conflict. This paper explores the merits of this idea. It does so by discussing the results of a survey which used two psychometric tests to investigate whether the industry has an attitudinal and socio-structural base which is receptive to such efforts.

Keywords: Conflict, dispute, social systems, attitudes, style, organizational structure

Introduction

The issue of conflict management has been elevated to one of the most important contemporary challenges facing the construction industry. Considerable momentum has been added by the 'Latham Report' (Latham, 1994) which has portrayed conflict as an undesirable phenomenon to be reduced and ideally eliminated from the construction process. The result has been the diversion of considerable resources and energies towards its reduction, primarily through an understanding of its causes (Fellows *et al.*, 1994; Conlin *et al.*, 1996; Kumaraswamy, 1997; Yogeswaran and Kumaraswamy, 1997).

The efficacy of the preventive approach to conflict management which predominates in the construction industry has been questioned by those who consider conflict an inevitability and see the problem in the way it is managed rather than in its existence (Hughes, 1994; Gardiner and Simmons, 1995; Osborne *et al.*, 1995; Hancock and Root, 1996). They made the distinction between functional and dysfunctional conflict, and argued that its indiscriminate reduction incurs an opportunity-cost for construction clients. Therefore, the managerial challenge is to harness the potential good in conflict rather than to develop methods of minimizing it. Indeed, the most radical view is that construction managers should positively provoke conflict because it is a doorway of opportunity to organizational learning and creativity, and to the fulfilment of organizational and individual potential (Hughes, 1994).

Although calls to tolerate or encourage conflict more closely reflect contemporary management thought (Robins, 1974; Likert and Likert, 1976; Frazer and Hippel, 1984; Argyris, 1990; Pascale, 1991; Furze and Gale, 1996), their inherent weakness lies in the unproven assumption that construction project organizations are receptive to such an approach. The validity of this assumption has not been examined, yet it determines whether claims to tolerate or encourage construction conflict remain speculative and potentially damaging. It is within this context that this paper aims to investigate the receptivity of construction project organizations to constructive conflict management.

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Organizational receptivity to constructive conflict management

The receptivity of any organization to constructive conflict management depends upon its attitudinal and socio-structural base (Blake and Mouton, 1964; Likert and Likert, 1976; Robins and Mukerji, 1994).

Attitudinal receptivity

Blake and Mouton (1964) were the first to present a conceptual scheme for classifying approaches to managing interpersonal conflicts. Their ideas were developed further by Rahim (1983) into a model of five conflict handling styles which varied along two dimensions: namely, concern for others (cooperativeness) and concern for self (assertiveness). Rahim's model is illustrated in Figure 1.

The value of Rahim's model is that it provides a basis for exploring the attitudinal receptivity of organizations to constructive conflict management. For example, the *dominating* style is underpinned by selfish attitudes and an unwillingness to understand an opponent's viewpoint and to develop mutually satisfactory solutions. Rogers (1991) indicates that the beliefs that underpin this approach are: that opponents cannot be trusted, are aggressive and have relatively little power; that only intentional war is possible; that any escalation is easily controllable and that little consideration needs to be given to the possible response of an adversary and its escalating impact; that the best approach to resolve a dispute is to be aggressive and forceful; and that the best way to define and measure success is in military rather than diplomatic terms. De-Bono (1991) and Covey (1994) argue that the dominating style of conflict management results in win–lose solutions where valuable ideas and legitimate entitlements have little influence over the conflict outcome. Rather, the party that normally wins is the one with the greatest power, meaning that the underlying tensions which represented the source of the conflict remain unresolved and suppressed, only to re-emerge later in a seemingly unrelated dispute. Ultimately, the dominating style of conflict has very little potential to generate positive conflict outcomes. Indeed, George (1991) has shown that when two competing styles confront each other, there is particularly high probability that a dispute will rapidly, uncontrollably and destructively escalate.

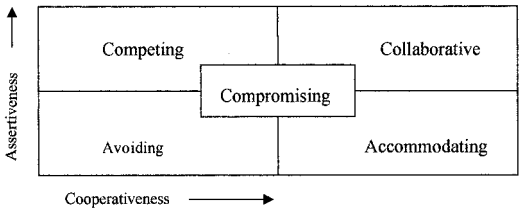

Figure 1 Rahim's five conflict handling styles. Source: Rahim (1983)

In contrast to the dominating style, the *integrating* style emphasizes exploration, participation and cooperation and produces win–win, long term solutions to conflicts which harness the creative capacity of an organization. This is achieved by encouraging people to explore potential solutions to problems which are outside those initially suggested by opposing parties but which may be more beneficial to both. The result is a dissipation of tensions and a reduction in the potential for an uncontrollable and destructive conflict escalation. Rogers (1991) suggests that the beliefs which underpin this style of conflict management are:that an opponent is not aggressive and exploitative; that there are more than two solutions to the problem; that there is the possibility of discovering a solution which better serves the interests of both parties; that those involved have the ability and desire to find these mutually beneficial solutions; that the control of a dispute is possible until a point where unintentional escalation is possible; and that coercive strategies are dangerous since they can lead to misunderstanding, mistrust and escalation.

Between the extremes of domination and integration are the *avoiding*, *compromising* and *obliging* styles of conflict management. The avoiding style of conflict management is characterized by withdrawal, ignorance and suppression, and is motivated by beliefs: that disputes will eventually disappear if ignored; that it is not possible to win against an opponent; that the control of a dispute's escalation is extremely problematic if not impossible; that there is no time or resources to deal with disputes; that there is no way of satisfying the demands of all parties in a dispute; that disputes will highlight issues which cause embarrassment or threat; and that disputes are intensely uncomfortable events for all involved. Although the avoiding style creates the illusion of control in the short term, it results in no solution to a conflict and has no potential to produce anything positive from it. Indeed, the opposite is likely in the long term as the tensions which are the source of the dispute remain latent until they grow to a point where they result in a dysfunctional crisis which can threaten the viability of an organization.

The obliging style of conflict management is characterized by one party giving up something for nothing in return and this produces a lose–win solution. The beliefs which underpin this style of conflict

Table 1 Profile of system characteristics. Adapted from Likert and Likert (1976)

System	Socio-structural characteristics
One	Exploitative, autocratic, threatening and punitive environment characterized by little mutual trust between managers and subordinates and where the bulk of decision-making is highly centralized. In response to this confrontational environment, the informal organization usually develops strongly into a mechanism through which subordinates subversively oppose organizational goals and follow their own agendas.
Two	A benevolent, authoritarian environment characterized by a high level of control but less confrontation. This behaviour results from subordinates feeling a reluctant and condescending trust in them, reflected in token gestures of decentralization and the maintenance of important decision-making powers at higher organizational levels. While there may be some delegation to middle management, subordinates still work within a constrained framework, particularly at the lower organizational levels, have little identification with organizational goals and feel little responsibility for achieving them.
Three	A consultative environment characterized by a reasonably trustworthy and decentralized decision-making structure where information flows both up and down the organizational hierarchy. Within this environment there is a moderate amount of participation in decision-making, frequent economic rewards and occasional punishment, which is the exception rather than the norm.
Four	An environment which emphasizes participative-group work and is characterized by complete and mutual trust and confidence between all organizational levels. Such an environment would be characterized by highly decentralized decision-making and a widespread sense of identity with organizational goals. The result is a highly open and integrated culture with little differentiation between formal and informal information systems and a healthy level of horizontal and vertical communication, cooperation and teamwork.

management correspond closely to those which underpin the avoiding style and, similarly, it has little potential to produce anything positive from a conflict.

Finally, the compromising style of conflict management is characterized by an emphasis upon sharing. While the approach has some potential to produce a constructive conflict outcome, essentially it results in a lose–lose solution where both parties give up something. The beliefs which underpin this style of conflict management are: that no party has the ability to win outright; that both parties deliberately start from an untenable position; that both parties are prepared to make sacrifices to resolve a dispute; that there are many unpredictable paths to escalation; that the control of a dispute is extremely problematic if not impossible; and that accommodation and compromise are the best means of resolution.

Socio-structural receptivity

Likert and Likert (1976) produce a typology of four socio-structural systems which have varying potential to produce positive results from conflict, independent of the style of management which is applied. These are depicted in Table 1. The central tenet of Likert and Likert's arguments is that the potential to stimulate constructive behaviour in a conflict depends upon the socio-structural environment in which it occurs, 'system-four' being the most productive. Typical types of conflict behaviour which characterize each system type are described in Table 2.

Method

The above research indicates that the greatest opportunities for constructive conflict management exists in organizations which are characterized by system-four socio-structural characteristics and which are underpinned by attitudes that facilitate integrative conflict management styles. Investigating the extent to which these attributes exist within construction projects will enable a judgement to be made about the validity of recent calls to encourage conflict in the construction industry.

Investigating attitudinal receptivity

Rahim's (1983) model of conflict handling styles, which was illustrated in Figure 1, was the end-product of research which questioned 1219 executives from a range of industries about the extent to which they agreed with 105 statements concerning their behaviour during a dispute. From the results, Rahim constructed factorially independent scales for measuring his five conflict handling styles, and provided evidence via a factor analysis of their reliability and validity. This process resulted in a series of 35 statements which significantly reflected an individual's conflict handling style, and these are listed in Table 3, in which the figures are eigenvalues which resulted from the factor analysis and indicate the degree to which each statement reflects a particular conflict handling style. The statements were presented to respondents in their

Table 2 Types of behaviour expected in each system during a conflict

Conflict characteristics	System 1	System 2	System 3	System 4
Willingness to understand different viewpoints, needs and objectives	Selfish and self-centred attitudes	Inward-looking with minimal concern for others	Some attempts to explore mutual interests	Significant efforts to understand diverse interests
Willingness to solve problems jointly	Suspicious and highly individualistic decision-making	Cautious and reluctant to allow involvement; token gestures if any	Limited involvement of some interest groups	Full and meaningful involvement of all interests groups
Willingness to communicate openly	Extremely guarded	Quite guarded, suspicious	Some careful willingness	Open, unguarded and candid
Attempts at deception	Try hard to deceive	Frequent deception	Occasional deception	Consistently try to inform
Insistence on centralized, bureaucratic procedures and control of decision-making	Highly centralized; emphasis upon vertical communication and hierarchical protocol	Reluctant involvement of rank and file and centralized control imposed over communications	Limited control over information flow supported by opinions of rank and file	Minimal control; emphasis upon open communication and participation of rank and file
Methods of resolving conflict	Suppression	Some suppression, win–lose confrontation	Negotiation, bargaining and compromise	Creative and consensus seeking
Willingness to use independent third parties to resolve disputes	Secretive and resentful of third-party intervention	Suspicious of external involvement	Consideration given to external views	Encouragement of independent intervention
Willingness to accept solutions and implement them	High levels of covert resistance	Some covert but considerable overt resistance	Acceptance with some reluctance	Full acceptance and positive implementation
Long-term consequences	Maintained or increased hostility	Continued hostility	Cooperation lingering hostility	Cooperative attitudes prevail.

numbered order and have been grouped together according to their reflection of a particular conflict handling style. For example, statements 1, 4, 6, 15, 28, 29 and 35 reflect most strongly the integrating style of conflict management, whereas statements 2, 7, 22, 23, 32, 33 and 34 reflect the avoiding style most strongly.

The value of Rahim's research is that it enables the construction of a rigorously developed attitudinal instrument for measuring the conflict handling styles of construction project managers. This was done by replicating Rahim's original survey method, where respondents were asked to indicate on a Likert scale of one to eight the extent to which they agreed or disagreed with the statements, and to relate their answer to a recent dispute which was fresh in their minds.

An important consideration in the selection of respondents was the direction of the dispute to be explored. For example, Philips and Cheston (1979) found that a dominating approach is more likely in conflicts with subordinates than it is with peers and superiors, and that the avoiding style is more likely with superiors than it is with peers and subordinates. This was considered an

Table 3 Factor matrix for assessing conflict handling styles. Source: Rahim (1983, p. 371)[a]

Statements	IN	AV	DO	OB	CO
1 I try to investigate an issue with my . . . to find a solution acceptable to us.	**0.53**	0.02	0.05	0.01	0.09
4 I try to integrate my ideas with those of my . . . to come up with a decision jointly.	**0.55**	0.02	–0.08	0.04	0.20
6 I try to work with my . . . to find solutions to a problem which satisfy our expectations.	**0.56**	0.01	–0.07	0.08	0.07
15 I exchange accurate information with my . . . to solve a problem together	**0.61**	–0.07	–0.01	0.10	0.01
28 I try to bring all our concerns out in the open so that the issues can be resolved in the best possible way	**0.58**	–0.12	–0.00	–0.06	0.01
29 I collaborate with my . . . to come up with decisions acceptable to us.	**0.49**	–0.05	0.04	0.14	0.11
35 I try to work with my . . . for a proper understanding of a problem.	**0.60**	–0.02	–0.01	0.03	0.03
2 I attempt to avoid being . . . 'put on the spot' and try to keep my conflict with my . . . to myself	0.05	**0.60**	0.06	0.07	0.12
7 I usually avoid open discussion of my differences with my . . .	–0.09	**0.58**	–0.04	0.03	0.03
22 I try to stay away from disagreement with my . . .	–0.13	**0.53**	0.00	0.22	0.09
23 I avoid an encounter with my . . .	–0.21	**0.48**	–0.03	0.25	0.08
32 I try to keep my disagreement with my, . . . to myself in order to avoid hard . . . feelings	–0.05	**0.61**	0.04	0.12	0.03
33 I try to avoid unpleasant exchanges with my . . .	0.10	**0.42**	–0.00	0.16	0.06
34 I generally avoid an argument with my . . .	0.02	**0.36**	–0.11	0.16	0.08
8 I usually hold onto my solution to a problem	–0.15	0.13	**0.32**	0.02	–0.02
10 I use my influence to get my ideas accepted	–0.00	–0.03	**0.64**	0.06	0.11
11 I use my authority to make a decision in my favour	0.12	0.01	**0.69**	0.01	0.02
18 I argue my case with my . . . to show the merits of my position	0.07	–0.06	**0.33**	0.06	0.04
24 I use my expertise to make a decision in my favour	0.00	0.04	**0.54**	0.11	0.01
27 I am generally, firm in pursuing my side of the issue	0.12	–0.06	**0.44**	–0.02	–0.03
31 I sometimes use my power to win a competitive situation	–0.03	–0.03	0.64	–0.02	0.02
2 I generally try to satisfy the needs of my . . .	0.19	0.12	–0.03	**0.48**	0.08
12 I usually accommodate the wishes of my . . .	–0.02	0.11	0.11	**0.68**	0.18
13 I give in to the wishes of my . . .	–0.13	0.26	0.06	**0.59**	0.09
16 I sometimes help my . . . to make a decision in his favour	0.27	0.02	0.21	**0.27**	–0.01
17 I usually allow concessions to my . . .	0.02	0.11	0.07	**0.42**	0.14
25 I often go along with the suggestions of my . . .	0.14	–0.03	–0.02	**0.42**	–0.03
30 I try to satisfy the expectations of my . . .	0.14	0.06	0.07	**0.57**	0.02
5 I give some to get some	0.11	0.02	0.04	0.07	**0.31**
9 I try to find a middle course to resolve an impasse	0.06	0.14	0.02	0.16	**0.59**
14 I win some I lose some	0.03	–0.01	0.09	0.13	**0.18**
19 I try, to play down our differences to reach a compromise	0.08	0.22	0.06	0.08	**0.39**
20 I usually propose a middle ground for breaking deadlocks	0.07	0.07	–0.00	0.06	**0.82**
21 I negotiate with my . . . so that a compromise can be reached	0.14	–0.03	0.07	0.03	**0.49**
26 I use 'give and take' so that a compromise can be made	0.14	–0.04	–0.00	0.09	**0.50**

[a] IN=integrating; AV=avoiding; DO=dominating; OB=obliging; CO=compromising. The word boss, subordinates, or peers appeared in each blank space depending upon the relationship being investigated.

important issue in the investigation of construction disputes because of the hierarchical nature of construction project organizations (Newcombe, 1994). Although parties to a construction project are able to wield a considerable amount of informal power from their tactical astuteness in bargaining processes (Newcombe, 1994), there is considerable evidence to suggest that there are long-standing perceptions of superior/subordinate relationships within construction project relationships, particularly between the architect and main contractor and main contractor and subcontractor (Bowley, 1966; Crinson and Lubbock, 1994; Hindle and Muller, 1996). For this reason, the conflict handling styles of contractors in dealing with their superiors (architects) and subordinates (subcontractors) were investigated. However, it is recognized that the nature of conflict management styles in other project relationships also needs investigating to build a complete picture of conflict management within construction projects and that this should be the focus of further work.

Another important consideration was to define clearly the meaning of 'conflict' for respondents, since it is a progressive phenomenon which moves through a number of phases (Philips, 1988). Furthermore, people may adopt different conflict handling styles at different phases of a dispute. To overcome this problem, respondents were asked to focus upon a dispute which had reached the point where they felt that interpersonal relationships had begun to deteriorate. According to a model of dispute dynamics produced by Philips (1988), this point corresponds to the 'limited warfare' stage of a dispute's escalation. While it is also possible that people may adopt different managerial styles to deal with different types of construction disputes no attempt was made at classification, and the data related to a randomly selected sample of dispute types.

As a final point in relation to research variables, respondents were asked only to relay their experiences of traditionally procured projects. There were two good reasons for this focus, namely that the majority of construction projects by value and number in the UK are procured in this way and there is evidence to suggest that it is within such systems that conflict is most pronounced (NEDO, 1983; Naoum, 1991; Bound, 1994; Dulaimi and Dalziel, 1994; Newcombe, 1994; Conlin *et al.*, 1996). One of the defining characteristics of the traditional procurement system is the strong distinction between design and construction, and this made the timing of the research important. Although the issue of conflict is important in both design and construction, the relatively high cost of resolving conflicts in construction ensured that this stage was the focus (Gardiner and Simmonds, 1995).

The data from respondents was tabulated (Table 4), the eigenfactors associated with each statement being used to weight responses to more closely indicate the extent to which they reflect certain management styles. The total score for each conflict management style was then normalized because Rahim's eigenvalues indicate that his questionnaire is more effective in measuring some conflict handling styles than in others. For example, the sum of the weightings under each style in Table 3 indicates that it is most effective at measuring the integrating style (3.92), then the dominating style (3.60), then the avoiding style (3.58), then the obliging style (3.43) and finally the compromising style (3.28). If a normalizing adjustment were not made to take account of this bias then the data from the questionnaire would be naturally skewed in favour of the integrating style.

Table 4 Calculation of conflict handling styles using Rahim's eigenvalues[a]

Conflict handling styles																			
Integrating				Avoiding				Dominating				Obliging				Compromising			
q	l	f	s	q	l	f	s	q	l	f	s	q	l	f	s	q	l	f	s
1		0.53		3		0.60		8		0.32		2		0.48		5		0.31	
4		0.55		7		0.58		10		0.64		12		0.68		9		0.59	
6		0.56		22		0.53		11		0.69		13		0.59		14		0.18	
15		0.61		23		0.48		18		0.33		16		0.27		19		0.39	
28		0.58		32		0.61		24		0.54		17		0.42		20		0.82	
29		0.49		33		0.42		27		0.44		25		0.42		21		0.49	
35		0.60		34		0.36		31		0.64		30		0.57		26		0.50	
Average score (A) Normalized score (3.92/3.92)×A				Average score (A) Normalized score (3.92/3.58)×A				Average score (A) Normalized score (3.92/3.60)×A				Average score (A) Normalized score (3.92/3.43)×A				Average score (A) Normalized score (3.92/3.28)×A			

[a] q = question number; 1-Likert scale rating; f = factor weighting (eigenvalue); s = score (w1).

Investigating socio-structural receptivity

Likert and Likert's (1976) work provides a useful framework for investigating an organization's socio-structural receptivity to constructive conflict management. However, the profile of system characteristics identified in Table 1 is of limited use as a research instrument because the socio-structural characteristics identified therein are difficult to measure reliably (Pugh, 1973). In contrast, the behavioural characteristics in Table 2 are more easily measured because it is possible to classify behaviour by asking a range of people from a variety of perspectives to provide their perceptions of it. The inter-relationship between Tables 1 and 2 then permits inferences to be drawn about the socio-structural environment within which it occurred. This process of collecting data from a variety of perspectives is essential in building a reliable picture of behaviour in traditionally procured construction projects because of the varied interests which exist within them. Data collection from a single source would be likely to result in a biased picture from one perspective.

As in the investigation of attitudinal receptivity, a questionnaire was used to identify peoples' perceptions of their behaviour during a conflict. While observational techniques would have also been valuable, the unpredictable nature of conflict behaviour in terms of its physical location and timing made observation difficult. Furthermore, the case study approach which this would have demanded would have reduced the possibility of covering such a wide range of conflicts and projects. While it is recognized that a case study approach could have produced more in-depth insights, this research was exploratory in nature and was designed to produce generalizable results across a wide range of projects as the basis for further investigations.

Discussion of results

Rahim's attitudinal survey was distributed to 300 randomly selected site managers in 35 contracting organizations. The site managers were involved in a broad range of commercial, domestic and industrial developments throughout Australia and the response rate was 31%. Likert and Likert's socio-structural survey was distributed to a further 50 randomly selected site managers, 50 engineers, 50 quantity surveyors and 50 architects in Australia and the overall response rate was 56% (45%, 57%, 64%, 58%, respectively).

Socio-structural receptivity

The results of the research relating to socio-structural receptivity are depicted graphically in Figure 2 using the method of presentation developed by Likert and Likert (1976), where the horizontal axis indicates the behavioural characteristics in Table 2 and the vertical axis the extent of their perceived existence on a scale of one to eight. In this sense, system-one is contained within the horizontal band of one to three, system-two within the band of three to five, system-three within the band of five to seven and system-four within the band of seven to nine. The lines within the body of Figure 2 represent the mean score attributed by a particular profession for each type of behaviour listed along the horizontal. The position of each line indicates the system of behaviour which is perceived to exist by each profession during a conflict episode.

Figure 2 indicates almost universal agreement across professional divides that the type of behaviour which characterizes construction conflict episodes is system-two in nature. With reference to Table 2, this indicates that during a dispute within a traditionally procured project, people's behaviour is typified by: confrontation, inward orientation and a reluctant willingness to understand different viewpoints, explore common interests and develop mutually satisfactory solutions; a guarded and suspicious attitude towards communication; common attempts at information blocking, distortion and deception; tactical manoeuvring to gain power in negotiations; reluctant tolerance of third party intervention; reluctant acceptance of conflict solutions; and some lingering hostility in the long term.

The inter-relationship between Tables 1 and 2 also enable inferences to be drawn about the socio-structural environment of traditionally procured construction projects, which is best described as one of 'benevolent authoritarianism'. This is characterized by a relatively high degree of control where there is a reluctant trust in people which is reflected in token gestures of decentralization and the maintenance of

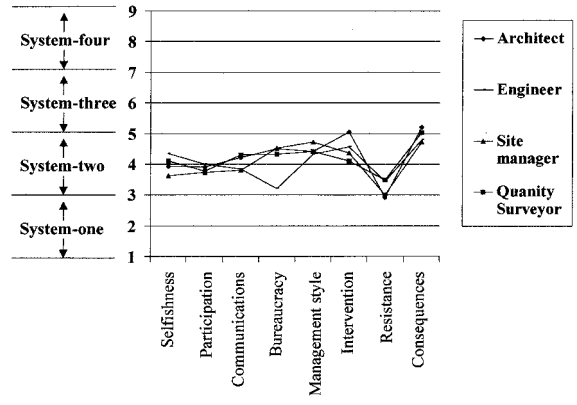

Figure 2 Profile of perceived conflict behaviour by contractors and architects

decision-making powers at higher organizational levels. While there may be some delegation to middle management, subordinates still work within a constrained framework, particularly at the lower organizational levels, have little identification with organizational goals and feel little responsibility for achieving them. In essence, the research results indicate that the socio-structural systems that pervade traditionally procured construction projects are unreceptive to constructive conflict management.

Attitudinal receptivity

The results of the research relating to attitudinal receptivity are depicted in Figure 3. As would be expected, a 'pure' style of conflict management does not exist in the relationships explored. Rather, conflict management styles are a combination of integrating, obliging, dominating, avoiding and compromising, the integrating style being predominant, although not strongly so. This conflicts with considerable anecdotal evidence that relatively high levels of division and mistrust in traditionally procured projects, compared with those procured under alternative arrangements such as design and build, would induce dominating tendencies (Emmerson, 1962; Banwell, 1964; NEDO, 1983; 1988; Latham, 1994). Contrary to what is commonly portrayed, the results indicate that within traditionally procured projects there is an underlying degree of goodwill in relationships and a desire to cooperate in achieving long-term, mutually satisfactory solutions. They also indicate that the contractors' beliefs which underpin these relationships are: that an opponent is not aggressive and exploitative, and that there are more than two solutions to the problem; that there is the possibility of discovering a solution which better serves the interests of both parties; that those involved have the ability and desire to find these mutually beneficial solutions; that the control of a dispute is possible until a point where unintentional escalation is possible; and that coercive strategies are dangerous since they can lead to misunderstanding, mistrust and escalation. In essence, Rahim's attitudinal survey indicates that in traditionally procured projects, the relationships investigated would be characterized by an attitudinal environment which provides a receptive basis for constructive conflict management, at least from the contractor's perspective.

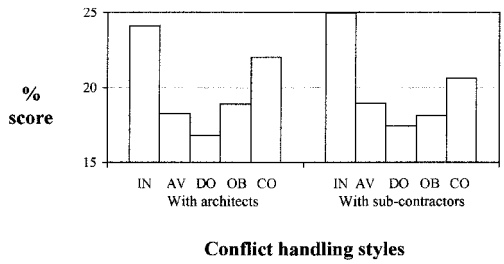

Figure 3 Profile of conflict handling styles for contractors dealing with architects and with subcontractors

Conclusions, limitations and recommendations

The aim of this paper was to investigate the attitudinal and socio-structural receptivity of construction project organizations to construction conflict management. This would enable a judgement to be made about the efficacy of current calls to encourage conflict in the construction process. The investigation's focus was the construction stage of traditionally procured projects plus the relationships between contractors and architects and contractors and subcontractors, from the contractors' perspective. The results indicate that contractors' attitudes are receptive (although not strongly) to constructive conflict management but that they exist in an unconducive socio-structural environment. In view of the popularity of the traditional procurement system, the results indicate that current calls for the encouragement of conflict may be premature and potentially counterproductive. That is, there is justification for the current emphasis upon conflict reduction in the construction industry.

Clearly, this conclusion needs to be supported by more research to investigate the conflict handling attitudes of other occupational groups in subordinate and superior relationships, at different stages of a project, at different stages of a conflict, for different types of conflict and in different procurement systems. Indeed, a more beneficial long-term strategy than continuing with current attempts to eliminate conflict may be to act upon the underlying attitudinal and socio-structural characteristics of construction projects to provide the future foundations for constructive conflict management. As it stands, the preventive emphasis, if successful, would incur significant opportunity costs for the construction industry by reducing the possibility of future benefits arising from the constructive management of conflicts. The real value of the research reported within this paper is that, having identified the current position of traditionally procured projects, recommendations can be made about changes which are needed to achieve this objective.

For example, Likert and Likert's model suggests that the construction industry should reduce its reliance upon extrinsic economic incentives and make fuller use of intrinsic non-economic incentives such as those arising from group processes. There also needs to be wider involvement in setting project goals, in re-appraising them and in improving methods for their

achievement. Currently, the industry's contractual practices provide little incentive for this to occur, yet such a change would create a greater affinity with project goals and would engender a stronger sense of collective responsibility, trust, goodwill and confidence within construction project teams.

In a more specific sense, Likert and Likert's model suggests that also there needs to be less reliance upon prescribed rules and procedures, greater attention to lateral communication (through both informal and formal routes) and a willingness to decentralize decision-making authority within construction projects. This would enable more efficient problem-solving. There should also be stronger pressures to ensure decisions are made upon complete and accurate information and to conduct rigorous peer-based (rather than management-imposed) reviews of performance. In the relatively flat organizational structure of construction project organizations, this would increase the accuracy of perceptions between project participants and the level of psychological identification between those of opposing interests. Ultimately, the result would be a greater level of cooperative teamwork and less misunderstanding between structurally disparate parts of project organizations. Collectively, these changes would create an attitudinal and socio-structural environment, characterized by understanding and consensus between opposing parties and an emphasis upon joint problem-solving as a mechanism for exploring innovative and mutually satisfactory solutions in an integrative, cooperative and constructive atmosphere.

To conclude, it is worth returning to the Latham Report, which was identified in the Introduction as the driving-force behind the current emphasis towards conflict reduction in the UK construction industry. Our research indicates that, if successful, Latham's attempts to increase trust as a means of conflict reduction will, ironically, generate conditions which will enable it to be managed more constructively. In this sense, tragically, it will have simultaneously created and removed an important opportunity to improve the construction industry's productivity record.

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