Influences of Chinese Cultural Orientations and Conflict Management Styles on Construction Dispute Resolving Strategies

Jiin-Song Tsai[1] and Cheryl S. F. Chi[2]

Abstract: Investigating styles of handling interpersonal conflict across multiple situations, this study explores the orientations of Hofstede's cultural dimensions (power distance, individualism versus collectivism, femininity versus masculinity, uncertainty avoidance, and long-term versus short-term orientation) influencing the choice of dispute resolving strategies in construction industry. Combinations of the five conflict approaches (collaborating, dominating, compromising, avoiding, and accommodating) of the two concerns model are adopted to present the styles of handling conflict (or conflict management styles). Chinese residing in Taiwan are chosen as the focus group. 62 engineering students in universities and 64 engineers in industry practices, totaling 126, were interviewed, and their conflict management styles toward supervisors and equally ranked peers were assessed using Thomas-Kilmann Conflict Mode Instrument. The cultural orientations are detected and articulated by the degree of people's style adjustment that switches from one's preferable style to another style to handle conflicts with his/her supervisors and peers differently. The results of the investigation data show that the adjustment of styles facing different situations clearly demonstrates the influences of cultural orientations. Our findings on Chinese cultural orientations (high power distance, femininity, and high uncertainty avoidance) may partially explain why Taiwanese-Chinese engineers prefer handling disputes through cumbersome administration routes and why most filed disputes will eventually escalate up to the central governmental authority for final settlements.

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Introduction

Taiwan's construction industry is fully aware of the proliferation of contractual disputes as one of the fundamental problems sabotaging the prosperity of public funded projects. The once occasional burden of disputes-handling has gradually become an inevitable exercise, particularly during the economic slowdown in the last decade. Popular slogans such as "bid low for award" and "file claims for reward" now verge on truisms prevailing in real practices. In short, contractors intend to bid low in a competitive bidding scheme, and hope to recover the loss through claims. Zack (1993) calls this phenomenon "bid your claims," and Ho and Liu (2004) name this "opportunistic bidding." It is therefore not surprising that the claim suing bandwagon is becoming crowded. This phenomenon is by no means limited to this local construction community (Merna and Bower 1997). Levin (1998) points out that claim is an integral part of the building process in the United States. In the United Kingdom, claim is also an inevitable feature of major projects. Professionals involved in such projects spend a good deal of the time in making claims, assessing claims, or negotiating on claims, let alone many claims consultants participate for the chances to make money out of the alleged mistakes in the construction process (Latham 1993; Scott 1997; Scott and Harris 2004). Thompson et al. (2000) further indicate that the construction industries in the United States and the United Kingdom, both having similar working environments and being plagued with adversarial attitudes, are both facing increasing numbers of claims and high litigation costs. As a consequence, this increasingly conflicting working environment brings about another saying: unlike yesterday's "good engineer" who needs only to know the laws of physics, today a "good engineer" needs to know more about the laws of claims to survive.

Since the possibility for disputes in public construction contracts is heightened by the complexity of the scope of the contract and its subject matter, especially when only a few standardized patterns are given unilaterally by the owner's side, it is of little surprise that the possibility for disputes is magnified when the other side possesses distinct approaches to recover their loss. Real practices reveal that, as an earlier research has identified, poorly managed disputes by governmental owners cause many undesirable claims from their contractual counterparts (Ock and Han 2003). In Taiwan, the construction industry also witnesses overwhelming growth in judicial lawsuits arising from public work projects. Nevertheless, after stumbling for over one decade, the local construction industry is learning that litigation is not a preferable way to handle claim disputes since long and inefficient legal procedures can easily distract the true issues and lead to a misleading adversary game.

An investigation shows, as in Table 1, in Taiwan, that litigation is in fact the least favorite resort to resolve disputes among local

[1]Professor, Dept. of Civil Engineering, National Cheng Kung Univ., Tainan 70701, Taiwan, Republic of China (corresponding author). E-mail: jstsai@mail.ncku.edu.tw

[2]Ph.D. Candidate, Dept. of Civil and Environmental Engineering, Stanford Univ., Palo Alto, CA 94305. E-mail: sfchi@stanford.edu

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Table 1. Prioritization of Favorite Dispute Resolutions in Taiwan (Chi 2005)

Dispute resolution methods	Favorite prioritization (ordering from 1 to 5)		
	Owners	Contractors	Consultants
Negotiation	2	3	1
Intervention by a higher rank authority	3	4	3
Adjudication by the central governmental authority	1	2	2
Arbitration	5	1	4
Litigation	4	5	5

Note: Tabled results are the conclusions from a total 359 interviews of local industrial people including 161 owners, 89 consultants, and 109 contractors.

industrial players including government owners, contractors, and consultants in public construction projects (Chi 2005). Instead, most disputants tend to avoid highly uncertain litigations and retain the dispute problems within a familiar domain for better control where two-party negotiation and adjudication by the central governmental authority are the two leading options. The Complain Review Board (CRB) for government procurement of the Public Construction Commission is the official unit for handling nationwide requests for dispute adjudication. It is worth noting that arbitration is controversial among different parties simply because many appointed arbitrators tend to overemphasize the equity of contractors (the weaker parties). Some earlier important arbitration decisions seem to be biased and tend to favor contractors while being disadvantageous to government owners. Therefore, arbitration is nowadays rarely taken as an alternative for dispute resolution despite once being a must in public work contractual agreements.

Similar to many alternative dispute resolution (ADR) processes, the adjudication by the central governmental authority, i.e., CRB, offers benefits of noncourt connected dispute resolution. The CRB members are scholars and experts of engineering and law, and they intervene in dispute cases through an expert determination process. This is a voluntary process designed to allow all parties engaged in public constructions to obtain an umpire's opinion quickly and inexpensively on whatever contractual disputes may arise among them. The CRB's decisions are endorsed by the governmental administration power that can easily enforce an award without facing significant hurdles once handed down to keep the procedure advancing. Local practices are learning that this process provides an opportunity for redress of complaints through less-pain, lower-cost adjudication instead of the long and uncertain processes in courts. Moreover, this alternative is seen to fill a void within the gamut of dispute resolution, usually as a binding interim measure which provides contractual stability without prejudice to the parties' ultimate entitlements to seek the assistance of a court or arbitrator in finally redressing issues pertaining to the contract.

Experience shows that many disputes can be avoided at the job site entirely, but much too often, contractors and field engineers fail to negotiate and solve disagreements in the first place. Once an issue leaves the field, a disagreement that lingers inevitably becomes a dispute. Unless the dispute is resolved promptly, it tends to drag on, escalate, and ultimately require higher-level manipulations or litigation proceedings for resolution. It is worthy to note a seminal work of Stinchcombe (1959) on administration herein. He describes a craft administration is applicable to where the work process is governed in accordance with the empirical lore that makes up craft principles, and the organizations or crews on the work site make important decisions. On the other hand, a bureaucratic administration is the one not on the work crew who plans the work process in advance, and decisions are communicated through a centralized apparatus. Construction projects surely need an effective craft administration system to forward most work and to ease many potential disputes as early as possible. Nevertheless, as described below, an unanticipated side effect of the government's anticorruption policy precludes this ideal and turns the escalation of incidences of construction disputes through a bureaucratic style administration into a doomed choice of prisoner's dilemma game (Kuhn 2003).

The CRB adjudication is not merely to reach a final settlement between the disputant parties who apparently strive to reflect the cultural notions of fairness and justice. The CRB process shields the disputant parties, especially engineers of government side, exempt from possible criminal charges. This extraordinary benefit is crucial for people in a bureaucratic administration system.

Government can directly affect the construction industry by financing public projects and influencing the general level of demand in the economy. Whenever the economy is weak, the industry will suffer, and its participants will try to alleviate the suffering at the expense of others, mostly the major player—government. Once everyone is struggling to avoid losses, a project team even starting with a positive relationship between all members can easily degrade to a fault finding contest. The accordingly adversarial exercises by far attract the attention of an anticorruption unit, the Bureau of Investigation (BI), the Ministry of Justice. Similar to the Independent Commission Against Corruption and the Vigilance created by the Hong Kong government and the Indian government, respectively, the Taiwan's BI is charged with investigating any discrepancies on projects in an attempt to root out corruption. It was once not uncommon to see a change orders case asking for reimbursement being accidentally transformed into criminal accusations with engineers being booked on charges of malpractice, bribery, profiteering or embezzlement. Punitive interrogations plus examinations were levied as consequences, even on those who were not guilty but were merely being investigated. As a result, engineers were discouraged from exercising any form of judgment, as they feared incurring the wrath of the BI's vigilance. This has led to an inclination to abide by the written rule, as much as possible, often increasingly causing friction and disputes on the project. The vigilant nuisance is also not uncommon in some countries, e.g., India and China, where clean-handedness is an important value embedded in their cultures, and anticorruption cleanup is on top of the job list to their governmental institutions (Mahalingam et al. 2005).

As mentioned earlier, the popular choice of CRB is a dual-purpose institutional strategy to resolve contractual disputes without invoking vigilant interferences. This rational decision-making behavior is an integrated result of both people and systems. Taking into account the consequences of anticorruption investigation, previous research, and works mostly regard the systems as an issue and introduce many ADR methodologies to better the systems. This study, on the other hand, is an attempt to understand the special rule-oriented and bureaucratic characteristics of people so as to figure out why the prisoner's dilemma game is entangled in the dispute resolution practices. In the following, the writers review literature pertinent to the theoretical framework of the present study on social behavior: culture orientations, five conflict handling approaches, and assessment of conflict management styles.

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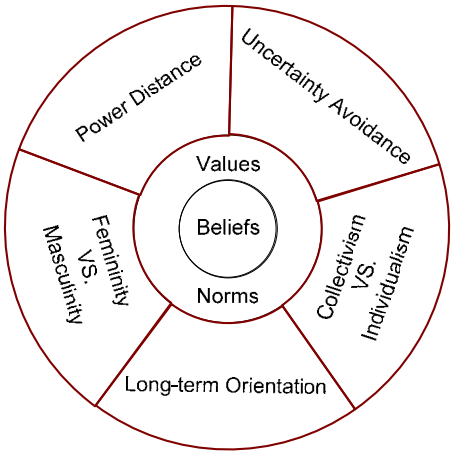

Fig. 1. Five-dimensional model of culture

Cultural Dimensions

Culture serves as a socially shared knowledge schema giving meaning to incoming stimuli and channeling outgoing reactions (Triandis 1972). Most nations have their own unique culture as a result of sharing a common history and a series of common struggles and successes (Hofstede and Hofstede 2005). Every national culture describes distinct beliefs (what is true), values (what is important), and norms (what is appropriate) that are deeply embedded in people's mind and demonstrated in their behaviors accordingly (Trompenaar 2004).

Cultural beliefs, values, and norms are three central ingredients that drive cultural group members in both the choice of strategies of appropriate social action (Shank and Abelson 1977) and the interpretation of the situation and the behavior of others (Fiske and Taylor 1991). As a matter of fact, disputes or conflicts occur within the framework of a culture's institutions need the particular culture to provide a context for their resolutions. Much research has shown that the preferable strategies for handling disputes or conflicts are affected by the three central cultural ingredients, e.g., the involvement of third parties (Leung 1987); the reliance on interests, rights, or power in the resolution of disputes (Tinsley 2001); the treatment of in-group versus out-group members (Leung and Bond 1984); the appropriateness of types of persuasive appeals, directness of communication, and concession patterns (Leung 1997; Ting-Toomey 1985).

To measure the cultural orientations of people, Hofstede (1983) first proposes a set of human constants, or so-called cultural dimensions, including power distance, collectivism versus individualism, femininity versus masculinity (or relationship versus achievement orientation), and uncertainty avoidance. Later, on the basis of another research among students in 23 countries centered in the Far East (Hofstede and Bond 1988), a fifth dimension, long-term versus short-term orientation, is added. Rooted in the three central ingredients, they form a five-dimension model of differences among national cultures (Fig. 1). Each country in this model is characterized by a source on each of the five dimensions. In this study, our general perspective is that the often chosen CRB strategy is culturally linked to some extent.

Power distance refers to a culture's preference for differentiated, hierarchical relationship within the society in which members of a society expect power to be unequally shared (Hofstede 1983). It reflects the value of dominance and control of the less powerful by the more powerful. This value has implications for how power is perceived and used in handling conflicts. In hierarchical cultures, social status implies power; lower-status individuals are expected to concede to higher-status individuals.

Collectivism refers to the emphasis on relatedness and the needs of others, and Hofstede (1983) defines this term as the individuals who are encouraged by societal institutions to be integrated into groups within organizations and society and are interdependent with others. It differs from the view of individualism that the self is autonomous and independent from the groups (Markus and Kitayama 1991). In such cultures, group cohesion is highly valued, and group consensus is paramount. Important decisions are made by groups, especially through formal meetings, rather than individuals. People tend to prefer behavior similarly in accordance with orders, regulations, and rules rather than individual autonomy and mutual adjustments. Triandis (1995) further distinguishes between vertical and horizontal types of both collectivism and individualism. Horizontal collectivism (individualism) emphasizes equality, whereas vertical collectivism (individualism) emphasizes hierarchy. This split is to enable one to differentiate the dimension of collectivism versus individualism; nevertheless Hofstede (2006) indicates that the dimension of large versus small power distance already covered the horizontal/vertical aspect.

Femininity-masculinity dimension is first only applied to the gender role view; however it emerges as a pattern of female nurturing (femininity) that is associated with harmony, helpfulness, and humility, and a male assertiveness pattern (masculinity) that is associated with aggression, exhibition, and conceit once applying to the national culture as a whole (Hofstede 1983). Uncertainty avoidance is defined as a society's reliance on social norms and procedures to alleviate the unpredictability of future events (Hofstede 1983). Javidan and House (2001) refer to it as the extent to which its members seek orderliness, consistency, structure, formalized procedures and laws to cover situations in their daily lives.

Long-term versus short-term orientation relate to the choice of focus for people's efforts: the future or the present and past. Values associated with long-term orientation are thrift and perseverance; values associated with short-term orientation are respect for tradition, fulfilling social obligations, and protecting one's "face." Both the positively and the negatively rated values of this dimension are found in the teachings of Confucius around 500 B.C., and long-term orientation represents a focus on the future-oriented maxims of Confucianism, at the expense of the past-oriented ones. The dimension applies equally well to countries without a Confucian heritage (Hofstede 2006).

This study is an attempt to understand the Chinese strategies that lead to resolving construction disputes in public projects. As mentioned earlier, Chinese in Taiwan specify particular expectations on how disputes should be preceded for resolutions—with profound effects on the styles people learned as participants in this culture. We anticipate that particular orientations can be partially traced by inferring people's behaviors of handling conflicts subjected to two situations, dealing with equally ranked peers and dealing with seniorities or supervisors, which account for the effects of cultural values and norms in workplace. Based on the assumption that cultural orientations affect interpersonal conflicts, this study explores the correlation between cultural orientations and conflict management styles at the individual level.

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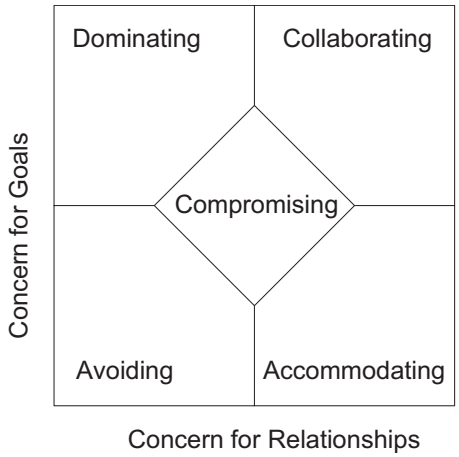

Fig. 2. Conflict management styles: the five conflict handling approaches

Five Conflict Handling Approaches

The controlling of dispute resolution process mainly depends on the interaction of the handling approaches chosen by disputant parties. Based on the conceptualization of Follett (1940), Blake and Mouton (1964), Thomas (1976), and Rahim and Bonoma (1979) differentiates that the types of handling interpersonal conflict (dispute) on two basic dimensions, concern for self and for others. The first dimension explains the degree (high or low) to which a person attempts to satisfy his or her own concern. The second dimension explains the degree (high or low) to which a person attempts to satisfy the concern of others. The identified two "concerns" are the basic building blocks of a theoretical framework named the Dual Concerns Model (Rubin et al. 1994). Moore (1996) and Groton (1997) further distinguishes the two concerns into the personal level of concerns satisfying (1) personal goals and (2) disputants' relationships in resolving disputant conflicts in project environments. Coupling the two concerns results in five specific approaches of conflict handling (Rahim 1983; Rahim et al. 2001). Shown in Fig. 2, the five approaches are further described below.

1. Collaborating (high concern for both personal goals and relationships) approach involves openness, exchange of information, and examination of differences to reach an effective solution acceptable to both parties. It is associated with problem-solving, which may lead to win-win solutions.
2. Dominating (high concern with personal goals but low concern with relationships) approach is identified with win-lose intention or with forcing behavior to win one's position.
3. Compromising (moderate concern for both personal goals and relationships) approach involves give-and-take whereby both parties give up something to break even the total loss and make a mutually acceptable decision.
4. Avoiding (low concern with both personal goals and relationships) approach is to put the problems on hold, and is sometimes associated with withdrawal, buck-passing, or sidestepping actions to reach a no-deal outcome.
5. Accommodating (low concern with personal goals but high concern with relationships) approach is associated with attempting to play down the differences and emphasizing commonalities with yielding attitude to satisfy the concern of the other party.

These five approaches are recognized in view of their effectiveness in deriving an atmosphere that can bring about wishful results in a conflict. It is thus worthwhile to understand, as a preceding step, what kinds of handling approaches and their reference behavioral attitudes in the process of resolving a dispute. It is also noted that these five approaches imply five distinct strategic attitudes referring to people's intentions toward conflicts: problem-solving, forcing, breaking-even, holding, and yielding. Table 2 presents the distinctions among the five approaches and their relationships with the handling attitudes. In a case study, Ock and Han (2003) study Korean project managers applied these five approaches to resolve a construction dispute that occurred between two functional entities of a local government. This case demonstrates a dispute resolution process engaged with these approaches as well as the disputants' psychological transitions and changeovers. Also, Singh and Johnson (1998) employ a method with the five approaches to diagnose conflict within a governmental organization (i.e., the State Public Agency) that engaged in civil engineering design and construction projects.

Table 2. Five Conflict Handling Approaches

Behavioral approaches	Strategic attitudes	Concerns	
		Personal goals	Disputant relationships
Collaborating	Problem-solving	High	High
Dominating	Forcing	High	Low
Compromising	Breaking-even	Moderate	Moderate
Avoiding	Holding	Low	Low
Accommodating	Yielding	Low	High

Assessment of Conflict Management Styles

People have various behavioral instincts and intuitions, called conflict management styles, that impact the way they handle interpersonal conflicts. The many unique behavioral patterns set boundaries on the range of situations within which people will be at their peak in terms of effectiveness. The styles are, in the words of Gilkey and Greenhalgh (1986), "patterns in individuals' behavior that reappear in various situations" through the mechanism of "predispositions" toward particular courses of conduct. For example, people who strongly dislike interpersonal conflict will likely carry this dislike into many their encounters. This trait affects their effectiveness when the dispute shows signs of becoming confrontational.

For probing the "conflict management style," there are a variety of psychological assessment tools in use (Womack 1988; Knapp et al. 1988) including a multirater system developed at Harvard's Kennedy School (Allred 2000), the Machiavellian Scale (Christie and Geis 1970), the FIRO-B questionnaire (Schutz 1958; Gluck1983), the Rahim Organizational Conflict Inventory-II (Rahim 1983), and Thomas-Kilmann Conflict Mode Instrument (TKI). Among them, the TKI is one such tool developed by Kilmann and Thomas (1977) to explicitly include the five conflict approaches posted by the Dual Concerns Model. It measures self-reported preferences or predispositions by using the five approaches. Subjects are forced to choose between statements exemplifying these approaches in 30 paired sequences. Sentences representing each of the five conflict approaches appear 12 times in the instrument. Womack (1988a) concludes that "used appropriately, the TKI can be beneficial to both trainers and researchers."

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Table 3. Examples of Conflict Management Styles

Subjects	Cases (conflict with)	Conflict handling approaches					Indexes	
		CLB	DOM	CMP	AVD	ACM	IX	DX
A	1 (peers)	[99]	23	50	59	42	[40]	−19
	2 (supervisors)	[94]	51	34	72	42	[22]	9
	3 (intimates)	80	[94]	50	40	13	40	[81]
B	1 (peers)	50	[90]	68	40	42	10	[48]
	2 (supervisors)	50	37	50	72	[93]	−22	[−56]
	3 (intimates)	80	[90]	19	72	42	8	[48]
C	1 (peers)	80	[84]	68	25	42	[55]	42
	2 (supervisors)	37	34	80	[97]	40	[−60]	−6
	3 (intimates)	68	[90]	50	40	42	28	[48]

Note: 1. Acronyms: collaborating (CLB), dominating (DOM), compromising (CMP), avoiding (AVD), accommodating (ACM), integrative index (IX), and distributive index (DX); 2. IX and DX are further illustrated in the following section; and 3. Boxed numbers shows the dominant (default) approaches in the designated situations.

The TKI does not allow subjects to make their choices based on what they would do in any given conflict, relationship, or social setting. Thus, the assessment results show "overall" predispositions rather than "best practices" for resolving any particular conflict-of-interest situation. In order to elicit the cultural influences onto people's conflict management styles from the subjects' choices, the original TKI pattern is enhanced to give subjects with identity cues as to three social contexts: dealing conflicts (1) with equally ranked peers in workplace; (2) with seniorities or supervisors in workplace; and (3) with her or his most favorite intimates in privacy. A TKI-type questionnaire in Chinese is then developed using equally desirable (or undesirable) phrases representing each conflict attitude. In particular, the results of the first two cases are strongly linked to subjects' desire to exhibit socially desirable traits, and the third one is to reveal their true preferences. For example, one may not wish to display dominating or collaborating approach in the workplace and so she (or he) would adjust her (or his) attitude to the more socially praiseworthy traits of avoiding or accommodating. The variance between one's true preferences (the third case) and the adjusted approaches (the first two cases) will distinguish the cultural influences in the designated social contexts.

The classifications of the five conflict approaches come from placing the two concerns of the Dual Concerns Model into relationship with one another in five dynamic pairs. One's conflict management style can be displayed as unique combinations of the five approaches. In order to effectively present people's styles, the combinations are derived from adapting the raw scores to a "standard scale grid" established by Shell (2001). This grid summarizes the scores from a sample of more than 1,600 participants from all over the world and from a wide variety of professional fields. It proves to be a useful reference on the style variable. Table 3 shows examples of people's conflict management styles employed in three different situations, and the numbers associated with the five approaches are based on Shell's standard scale grid.

We infer that a person with a high collaborating number (CLB) is an advocate of the win/win attitude, seeking to accomplish her or his interests as well as the goals of others to maintain their relationship in between. A person with a high dominating number (DOM) is a tough fighter who attempts to meet the goals at all costs. And, a high compromise number (CMP) shows that a person tries to find a solution that allows each conflict party to get some degree of satisfaction. It is worth to note that people tend to prefer one approach, most likely as a result of psychology, character, and personality (Antonioni 1998; Moberg 1998). Although no one approach is supposed to be better than the other in every situation, the Colorado Bar Association (1995) suggests that collaborating and compromising approaches are effective to manage disputant conflicts in project environments. Separate study by Cheung et al. (2006) further encourages the contingent use of these two approaches, which are useful in resolving construction disputes and to achieve functional outcomes.

Integrative and Distributive Dimensions

To exploit insights into the five approaches, Prein (1976) and Thomas (1976) suggest two additional dimensions, i.e., the integrative and distributive dimensions, to better depict people's employment of their favorite conflict approaches. These two dimensions were first proposed by Walton and McKersie (1965) in a study of labor-management negotiations. Rahim et al. (2001) adopted them to study the correlation between power, conflict management styles, and job performance in organizations. Fig. 3 shows the five conflict approaches and their reclassifications into the integrative and distributive dimensions. Measurements of the two additional dimensions are calculated by

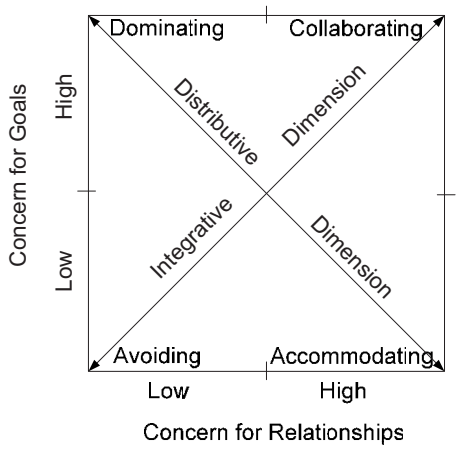

Fig. 3. Integrative and distributive dimensions

$$\text{Integrative index (IX)} = \text{CLB} - \text{AVD} \quad (1)$$

$$\text{Distributive index (DX)} = \text{DOM} - \text{ACM} \quad (2)$$

The two dimensions disclose personal preferable orientations (habits) for handling conflicts. The integrative dimension reveals one's dominant inclination on pursuing both goal "and" relationship concerns, whereas the distributive dimension reveals one's dominant inclination on pursuing either goal "or" relationship concerns. A high (positive) IX indicates a high collaborating tendency toward finding unique solutions to increase the satisfaction of both sides. A low (negative) IX indicates a high avoiding tendency away from confronting and solving problems or toward putting the problems on hold. A high (positive) DX indicates high dominating tendency toward obtaining high satisfaction of self. A low (negative) DX indicates high accommodating tendency toward the opposite. Examples shown in Table 3 demonstrate some typical cases. Most of the data show subjects' dominant (default) approaches (indicated by boxed numbers) are quite compatible to her/his preferable orientation revealed by the higher index between IX and DX. In the same table, however, despite the dominating approach appears to be subject C's preference when dealing conflict with his peers (Case 1) the high IX (55) reveals his collaborating tendency in real practices.

We assume that people shift their favorite conflict approaches to adapt to the changes in the contexts or situations. This is because that most people make use of all five of the conflict approaches, in varying degrees, depending on the contexts and situations, in which the five cultural dimensions shape human behaviors significantly. Analyses regarding the changes of the two calculated DX and IX indexes between contexts or situations are to trace out the cultural influences.

Survey Method and Procedure

Participants of this study are from two focus subgroups: (1) students of civil engineering and (2) engineers in construction industry. The research design is to collect data from people with very little and sufficient practical experiences. The writers collect data from students in a class of negotiation and mediation for construction disputes at National Cheng Kung University. The conflict situations for students are in particular associated with their class works and after class activities. The data for industry participants is collected via field investigations to fourteen selected job sites around the country. All the sites carry on important national construction projects and their contractual values are all above U.S. $100 million. Participants of the surveys are the engineers of owners, contractors, and consultants. Combinations of the five conflict approaches are primarily elicited from them using the TKI-type instrument described above. Each survey begins with a briefing of the purpose and procedure, and the writers personally distribute the questionnaires to each participant along with additional illustration for completing the instrument. The investigation follows up with some personal interviews to better understand the meaning of the survey responses. Over one half respondents of university students are appointed for further individual interviews while the post-survey observation to those industry respondents is to a much lesser extent.

The respondents consist of a total of 62 students and 64 engineers. By gender there are 110 males (50 students and 60 engineers) and 16 females (12 students and 4 engineers). The student respondents are seniors and postgraduates. Their average age and work experience were 22.5 (standard deviation (SD)=1.8) and 0.6 (SD=0.3) years, respectively. The engineer respondents are 28 from owners, 24 from contractors, and 12 from consultants. They are in various fields (structural, geotechnical, transportation, environmental, hydraulic, and construction engineering) and functional areas, such as design, build, procurement, safety, administration, and accounting, etc. They represent top (number of respondents $n=14$), middle ($n=33$), lower ($n=12$) management, and nonmanagement ($n=5$) levels. Their average age and work experience are 39.2 (SD=9.8) and 17.0 (SD=9.5) years, respectively. Their average work experience with the present job and educational level are 9.4 (SD=8.2) and 18.4 (SD=2.7) years, respectively.

Results and Analyses

Table 4 shows the means and the standard deviations of the assessment results of the five conflict approaches in both the student and the engineer respondents. As indicated in Table 4, there is little difference in the distribution of the five approaches between the two subgroups facing the three designated situations. It is thus appropriate to give analyses and discussions in the following. Table 5 shows the preferable approaches (the highest score) of the respondents in different situations.

The survey results presented in Tables 4 and 5 show that people's conflict management styles are contingent on the situations although one of the total 126 respondents affirmed that he employs a unique style despite any varying case. Earlier studies (e.g., Kahn et al. 1964) report that people commonly employ dominating approach to handle differences straightforwardly, while the shift to using accommodating or avoiding approaches is much more likely facing conflicts with their supervisors and peers. Our results give supportive evidence to this hypothesis showing construction people behave alike. In Table 4, the magnitude of style change subjected to different cases shows the amount of adjustment of the focus group.

In the following, the empirical validity according to the obtained results will be tested against measures of the situation variation, and the influence of Chinese culture orientations will then be exploited.

Cultural Orientations and Conflict Approach Favoritism

Literature clearly suggests that cultural orientations affect conflict management styles. He et al. (2001) finds that individualistic and masculine orientations are related to dominating favorite. Another survey (He et al. 2002) points out that masculinity would lean toward adopting dominating and collaborating approaches, while uncertainty avoidance and power distance predict the adoption of two of the five conflict approaches respectively: collaborating and avoiding approaches for the former, and the dominating and accommodating approaches for the later. Their data also depicts that cultures that feature collectivism, high power distance, and femininity would favor accommodating and avoiding approaches.

Table 6 summarizes the above and other studies' findings, including Lewicki et al. (1992), Sternberg and Dobson (1987), and Ting-Toomey (1985), creaming off a correlation between cultural orientations in Hofstede's five dimensions and the conflict handling approaches. First, power distance is correlated with the tendency of employing dominating or accommodating approach

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Table 4. Means and Standard Deviations of Results

Case (conflict with)	Participants	Item	Conflict handling approaches					Indexes	
			CLB	DOM	CMP	AVD	ACM	IX	DX
1 (peers)	All	Avg.	45.0	45.9	54.1	65.9	67.7	−21.9	−20.0
		SD	25.0	23.4	27.5	21.8	24.8	40.5	37.3
	Student	Avg.	45.4	45.2	53.2	65.2	69.4	−24.2	−19.2
		SD	25.4	22.2	27.5	20.0	23.9	36.5	35.6
	Engineer	Avg.	44.7	46.5	54.9	66.5	66.1	−19.7	−20.8
		SD	24.9	24.2	27.7	22.9	25.4	42.7	38.4
2 (supervisors)	All	Avg.	30.6	30.9	56.3	75.4	83.3	−52.5	−44.1
		SD	22.7	21.3	25.7	21.6	17.0	33.1	36.0
	Student	Avg.	29.9	29.4	56.8	76.0	85.3	−55.9	−46.1
		SD	20.7	17.5	25.1	19.3	16.2	28.7	29.7
	Engineer	Avg.	31.3	32.4	55.9	74.9	81.5	−49.2	−42.2
		SD	23.9	23.2	26.2	23.0	17.3	35.2	39.2
3 (intimates)	All	Avg.	54.1	59.1	47.7	56.8	60.2	−1.0	−3.1
		SD	25.2	24.1	25.6	23.9	24.8	40.9	38.6
	Student	Avg.	54.3	59.5	50.3	53.5	59.8	−0.2	0.9
		SD	27.8	25.9	24.8	23.7	23.4	40.5	41.6
	Engineer	Avg.	53.9	58.8	45.2	60.0	60.5	−1.7	−5.2
		SD	23.7	23.2	26.1	23.8	25.7	41.3	36.8

Note: 1. Case 1 dealing conflicts with equally ranked peers, Case 2 dealing conflicts with seniorities or supervisors, and Case 3 dealing conflicts with intimates in privacy; 2. Acronyms: standard deviation (SD) and average (Avg.).

since people's mindset toward social status identity or equality between people behaves differently. Second, uncertainty avoidance is mostly related to the tendency of employing collaborating approach or avoiding approach otherwise, since the willingness to pursue a better possibility or to stay put avoiding worsening the status quo governs, respectively. Third, collectivism enhances the tendency of employing collaborating and accommodating approaches while individualism betters the employment of dominat-

Table 5. Favorite Approaches in Three Situations

Case	Participants	Item	Conflict handling approaches				
			CLB	DOM	CMP	AVD	ACM
1	All	No.	28	12	21	22	43
(peers)		(%)	22.2	9.5	16.7	17.4	34.1
2	All	No.	10	2	11	41	62
(supervisors)		(%)	7.9	1.6	8.7	32.5	49.2
3	All	No.	24	35	18	24	25
(intimates)		(%)	19.0	27.8	14.3	19.0	19.8

Note: Boxed numbers shows percentage of the majority of focus group employing the particular approach in the designated situations.

Table 6. Influences of Cultural Orientations to Conflict Handling Approaches

Cultural dimensions	Values driven orientations	Conflict handling approaches				
		CLB	DOM	CMP	AVD	ACM
High power distance	Status	—	—	—	—	X
Low power distance	Equality	—	X	—	—	—
High uncertainty avoidance	Harmlessness	—	—	—	X	—
Low uncertainty avoidance	Pursuit	X	—	—	—	—
Collectivism	Relatedness	X	—	—	—	X
Individualism	Self-fulfillment	—	X	—	X	—
Masculinity	Achievement	X	X	—	—	—
Femininity	Harmony	—	—	—	X	X
Long-term Orientation	Flexibility	—	—	X	—	—
Short-term Orientation	Steadiness	—	—	—	—	—

Note: X represents that the specified cultural dimension very likely enhances the tendency of the pointed approach while the influence on the tendency of others is less obvious or uncertain.

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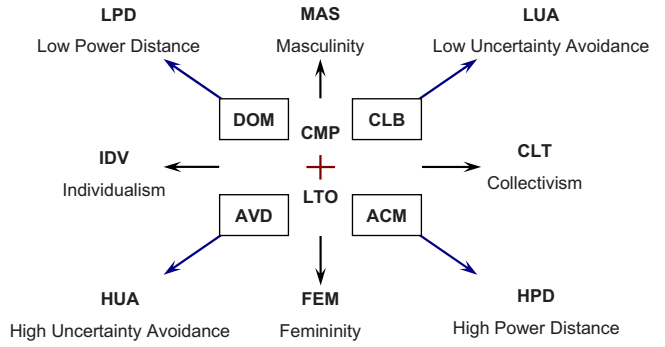

Fig. 4. Cultural orientation diagram: correlation between cultural orientations and conflict handling approaches

ing and avoiding approaches simply due to their emphases on relatedness or self-fulfillment, respectively. Fourthly, masculinity uplifts the employment of dominating and collaborating approaches while femininity is associated with avoiding and accommodating approaches, because of their different concerns on achievement and harmony, respectively. Fifthly, long-term orientation increases the preference of compromising approach that involves give-and-take to reach a mutually acceptable agreement, since it encourages the concern of future gain which might be at the expense of the past or the present having. On the other hand, short-term orientation is less likely to motivate any adjustment of style against situation changes. The result-in correlations explained above are further interpreted in a cultural orientation diagram as shown in Fig. 4.

Employing the data of Table 4, a cultural orientation diagram is developed (Fig. 5) to conceptually visualize the influence of cultural orientations. Two vectors, V_{13} and V_{23}, are drawn in IX-DX coordinates to present the variations of IX and DX indexes corresponding to the overall (or average) changes between situations

$$V_{13} = \text{influence of peers} = (-21.9, -20.0) - (-1.0, -3.1) = (-20.9, -16.9) \quad (3)$$

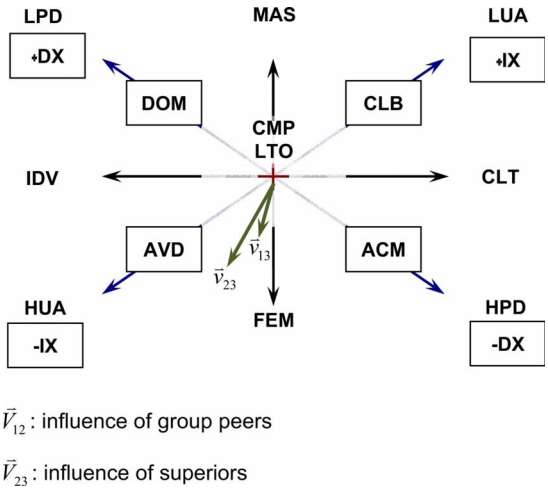

Fig. 5. Vectors showing the changes of IX and DX on the cultural orientation diagram

$$V_{23} = \text{influence of superiors} = (-52.5, -44.1) - (-1.0, -3.1) = (-51.5, -41.0) \quad (4)$$

The two vectors imply the tendency (magnitude) of style adjustment when construction people face different situations. They show the influence of peers as well as the influence of supervisors in terms of cultural orientations. Our data indicates that the result-in tendency affecting the contingent adjustment of style is governed by the dragging stresses from the proximity dimensions shown in the diagram, including: (1) high uncertainty avoidance; (2) femininity; and (3) high power distance.

Discussion

We try to trace the influences of Chinese cultural orientations onto people of local construction industry via testing the variance of their conflict management styles against switching situations in workplace. The adopted models of cultural orientation and five conflict approaches are to make simplifications of the real world so as to concentrate on a few, measurable variables. It is worthy noting that the presented finding characteristics are unique due to not only the models with the assessment instrument employed herein but also the chosen clan of construction people. Since our attempt is to predict a general tendency (or behavior) of this clan, the employed strategy makes use of aggregation to the focus group. Both the numbers of student and professional participants achieve to a certain amount, and irrational elements due to some individuals are hence easier to eliminate by the aggregation. The collected data are thus to give prediction of aggregate behavior in average rather than individual behavior.

Our findings show that high uncertainty avoidance, femininity, and high power distance contribute three cultural dragging stresses that build the behavioral tendency toward dispute resolution in the local construction industry. The high power distance tendency is mostly reflected in the governmental bureaucracy's status toward hierarchical prestige and dominance. This implies that the higher-status side (i.e., the governmental owner) of a public funded project would take for granted a straightforward strategy employing distributive, zero-sum approach, to overwhelm the weaker side (the contractors). On the other hand, the hierarchical orientation shall nudge the weaker side to solicit for an even higher authority as a countermeasure to circumvent the direct confrontation. As a matter of fact, the intervention by a higher administration authority often facilitates an in-group conciliation to alter the confrontation. In this case, employing in-group strategy may retain the dispute problems within a familiar domain to avoid unexpected costs and disturbing vigilant interferences. Solutions should be cooperative (since goals are interdependent), but not necessarily integrative. Also, the high power distance orientation sometimes reflects in the extent to which the process is characterized by more of a one-way, top-down argument, and the final decisions are endorsed by the governmental administration power.

The high uncertainty avoidance and the femininity orientations, which are also characteristics of this culture, lead to high concerns about the resolution process (cumbersome bureaucratic routes) with all aspects recognition rather than the goals achieving the best to both sides. In other words, the combination of high uncertainty avoidance and femininity orientations may thus increase the likelihood of impasse and low joint gains. Nevertheless, the intervention by a high-level administration authority may alter the impasse and form in-group conciliation to retain

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the dispute problems within a familiar domain for a better controlling.

Conclusions

Unanticipated problems and events that occur in every project provide fertile ground for the growth of construction disputes. To a certain extent, disputes and claims are evolving into an inevitable part of the construction process nowadays and are by no means limited to any local construction industry in the world. In Taiwan, with no exception, public funded works are plagued with rising numbers of claim disputes and thus increasingly high institutional and coordination costs as the consequences. Besides, the status quo is worsening by the wrath of governmental vigilance, that is now a constant chip on every player's shoulder, and the adversarial ambience is further escalated.

People in construction management commonly think that dealing with institutional system is the top issue for assuring a rational decision-making process. We not only fully agree but further consider that people are the key to long-term success and in fact the vital element for the decision-making process in any institutional system. This study is then an initial attempt to observe and measure human behavioral factors outside the box of devices and tactics on improving ways to deal with or prevent disputes via institutional mechanisms. In particular, it is an attempt to exploit a correlation between cultural orientations and people's conflict management styles so as to interpret common strategies for resolving construction disputes in real practices.

Our investigation data shows that people of the focus group tend to adjust their attitudes to the traits of avoiding and accommodating approaches against conflicts of different social contexts in workplace. Examining the survey results as a whole, the variance between individuals' predisposition conflict approach, and their adjusted approaches, we find that the adjustment tendency is correlated with culture orientations.

In brief, people are the driver who move forward the construction project and carry out the production works. We believe that people's intention and behavior in a certain institutional system are influenced by their cultural orientations. In this study, we demonstrate the influence of cultural orientations on to resolve disputes employing Taiwan's construction industry as the case. The particular way of local people's preference, i.e., through the adjudication by the central governmental authority, can be partially explained by a coupling effect of three cultural orientations. We fully agree that the only way to change the adversarial climate on construction projects is to develop techniques for encouraging people to communicate, cooperate, deal realistically with problems at the time they occur, and resolve disputes as early as possible. To achieve this goal, a better understanding of people from the cultural aspects should improve the opportunity and is worthy of further study since it addresses the fundamentals of people's relationships, provides an in-depth view for the conduct of successful dispute resolutions, and guide the right direction to encourage cooperation behavior in the long run.

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