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KEY **DS** China, competitive orientation, c
scal evelopment

INTRODUCTION

While cooperation is essential for organizations to grow, c
force that keeps employees striving for personal and profess
pervasive use of work teams in modern organizations requires empl
taneously cooperate and compete with their team members. Due to the in
dent nature of teamwork, members must cooperate with one another to effec
complete tasks, whereas at the individual level, the need to constantly outperform others and improve one's own performance remains strong. A teamwork context

thus represents a typical mixed-motive situation (Komorita & Parks, 1995) in which

and Stahelski (1970) posit that there exist two types of individuals – cooperators and competitors, who possess stable differences in their inclination to cooperate and compete. Furthermore, cooperators and competitors have different views of the world and of others. While competitors tend to view others as similar beings, and all similar to themselves, cooperators tend to view others as different or varied.

situations where people were facing a conflict between maximizing individual interest and maximizing collective interest. This intriguing finding suggests that there is more complexity involved in an individual orientation than simply labelling it as either collectivistic or individualistic. Combining this finding with previous cross-cultural studies on individualism–collectivism (for a review, see Oyserman, Coon, & Kemmelmeier, 2002), it appears that the Chinese are not only collectivistic, but also vertically individualistic: there is the coexistence of a strong collectivistic/cooperative orientation and a strong individualistic/competitive orientation in the Chinese. This indicates that the Chinese may have a cognitive framework that accepts cooperative and competitive orientation to be distinct constructs that are not necessarily negatively related to each other.

Further supporting evidence came from Keller and Lowenstein's (2010) research. Using a cultural consensus model analysis, Keller and Lowenstein (2010) studied how people in the U.S. and China categorized workgroup cooperation and how similar or different their categories were. They found that while there was substantial cross-national agreement, most Americans and most Chinese had opposite views about the relationship between cooperation and competition. In particular, for a majority of those in the U.S., competition within the group indicated non-cooperation and no competition within the group indicated cooperation, whereas for a majority of those in China, competition within the group indicated cooperation

and

A C a a A a• D C S•a C a a C O a

Farh et al. (2006) described four approaches to scale development in Chinese management research: the translation approach, the adaptation approach, the de-contextualization approach, and the contextualization approach. The contextualization approach is often referred to as the indigenous approach in which researchers follow a process of presenting a construct and its current definition to Chinese respondents, generating examples of behaviours or indicators that relate to the construct with an open-ended questionnaire or a semi-structured interview, sorting behavioural samples into distinct categories, and pilot testing them in the field using factor analysis (Farh et al., 2006). As most of the influential academic research conducted in Chinese contexts has an indigenous nature (Tsui & Lau, 2002), and indigenous measures developed from the contextualization approach are uniquely suited to contribute to context-specific knowledge about China as these measures are maximally relevant to the local context (Farh et al.,

two factors explaining 23.48 percent, 20.17 percent of the total variance, respectively. Table 1 presents the 13 items and their factor loadings.

It can be seen from Table 1 that the first factor taps into our definition of cooperative orientation, whereas the second factor represents the meaning of competitive orientation. A close look at the items in the cooperation scale indicates that they reflect peoples' beliefs about their relationship with others as being interdependent, and their positive attitude toward working with others. A close look at the items of the competitive orientation scale reveals that they represent peoples' belief regarding self-development – and their aspiration to do better than others – an attitude toward others' role in demonstrating one's own value. Results from the reliability analysis indicate that both scales had high reliabilities (

distributed to 340 participants, among whom 318 responded (representing a response rate of 93.5 percent) and 295 provided valid responses (valid response rate of 87.4 percent). The respondents' age ranged from 20 to 40, with 42.4 percent of them having over 10 years of working experience. Sixty percent of the participants were male, and approximately 80 percent of them had college and above education.

Results. We conducted a CFA to test the construct validity of the cooperative and competitive orientation scales. The CFA revealed good fit indices for the two-factor model of the 13-item scale, $\chi^2 = 160.71$, d.f. = 56, $p < 0.01$; CFI = 0.94, IFI = 0.94, NFI = 0.91, RMSEA = 0.08. We also conducted CFA on a one-factor model, but found poor fit indices: $\chi^2 = 283.79$, d.f. = 57, $p < 0.01$; CFI = 0.87, IFI = 0.88, NFI = 0.83, RMSEA = 0.12; $\Delta\chi^2 = 122.92$, $p < 0.01$. These results suggest that the two-factor model fits the data significantly better than the one-factor model. Moreover, reliability analysis yielded high reliability for the cooperative orientation scale ($\alpha = 0.73$), as well as for the competitive orientation scale ($\alpha = 0.75$). The correlation between the two scales was not significant ($r = 0.01$, n.s.). These results provide further evidence supporting our conceptual treatment of cooperative and competitive orientation as distinct constructs.

S 2: S•a Va a A R La • M

To further establish the distinctiveness of cooperative and competitive orientation, we tested how people with different beliefs about human relationships reacted to stimuli related to the meanings of cooperation and competition. Response latency refers to the time duration between the presentation of a stimulus and the enacted response (Fazio, 1990). In cognitive psychological experiments, response latency is widely used to examine individual cognitive processes and structures. Social cognition literature suggests that how fast people respond to certain stimuli is systematically influenced by the consistency between their internalized self-knowledge network or self-schemata and the nature of the stimuli (Kuiper, 1981; Markus, 1977; Rogers, 1971). Research has found that an individual with a certain trait, when processing information that has a high consistency with that trait, finds it easier to match and process information, and hence experiences shorter reaction time to the stimulus than those with low consistency. In contrast, when processing information that is of a different nature with his/her trait, it requires more time to search and process, resulting in a prolonged reaction time (Fekken & Holden, 1992). Research has also shown that people who score high on a personality trait respond faster to 'positive items' – items consistent with the personality, but slower to 'negative items' – items inconsistent with the personality (Erdle & Lalonde, 1986; Fekken & Holden, 1992). Therefore, response latency or reaction time can be used as behavioural indices of individual trait measures.

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stimuli (words in this case) on a computer screen and asked subjects to respond as fast as possible regarding whether or not the stimulus described his/her personal characteristics. The reaction time of the participant was then recorded. Before the experiment, we let participants do some warm-up exercises and made sure that the keyboard was balanced for both left and right hands. When the subjects were ready, the following instruction was presented on the computer screen:

> Please judge whether the following adjective word describes your personal characteristics, if yes, press the key on your right side, if not, press the key on your left side (the other half subjects were given opposite instruction: if yes, press the key on left side, and if not, press the key on right side). Please make your judgment as fast as possible. Below are 10 words for you to use as an exercise.

After the exercise, the subjects were given a chance to ask questions. After making sure that everyone understood the rules of the experiment, formal trials began. The experiment lasted about 30 min. Upon completion, all participants received a small gift as a token of appreciation. They were then debriefed and dismissed.

R S 2

Hypothesis testing. All responses to a presented stimulus could be classified into four categories: a cooperator answered 'yes' to a cooperative word, 'yes' to a competitive word, 'no' to a cooperative word, or 'no' to a competitive word. Similarly, a competitor could have answered 'yes' to a competitive word, 'yes' to a cooperative word, 'no' to a competitive word, or 'no' to a cooperative word. In this experiment, we were only interested in the reaction time of a high/low cooperator when he/she answered 'yes' to a cooperative or competitive word, and the reaction time of a high/low competitor when he/she answered 'yes' to a competitive or cooperative word. *T*-tests were performed to test H1a, which revealed that the high cooperators' reaction time to cooperative words was significantly shorter (M = 9,550 ms) than their reaction time to competitive words (M = 9,950 ms), $t = 2.34$, $p < 0.05$. On the other hand, high competitors' reaction times did not differ significantly between responding to cooperative words (M = 9,260 ms) and competitive words (M = 9,250 ms). These results provide partial support for H1a.

To examine H1b, that high cooperators would have a shorter reaction time to words of a cooperative nature than would low cooperators, whereas high competitors would have a shorter reaction time to words of competitive nature than would low competitors, we compared the two groups' reaction time to the same type of words. *T*-tests revealed that high cooperators did respond faster to cooperative words (M = 9,430 ms) than low cooperators (M = 9,610 ms), but the difference was not significant at the 0.05 level. On the other hand, high competitors responded

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significantly faster to competitive words (M = 9,230 ms) than did low competitors (M = 10,020 ms), t = 2.41, p < 0.05. These results provide partial support for H1b.

The two sets of results together suggest that the reaction time is shorter toward words with meanings that are more consistent with people's self-schema (cooperative or competitive orientation in this study). This finding is consistent with previous research using personality as self-schema (Erdle & Lalonde, 1986; Fekken & Holden, 1992).

S 3: F Va a S•a A F S

So far we have demonstrated the construct validity and the distinctiveness of the cooperative and competitive orientation scales. To further test the scales' predictive validity, we conducted a field study in Chinese organizations. As cooperative and competitive orientation are treated as relative stable individual traits in our study, we wanted to demonstrate that (i) they are different constructs than personality traits, and (ii) their effects on employee task performance and organizational citizenship behaviour (OCB) go above and beyond the effects of personality traits.

Task performance and OCB are the two most important forms of employee output in organizations. Task performance contributes directly through the production of goods and services, whereas OCB (or extra-role/contextual performance) contributes indirectly to organizational success by maintaining or improving the organizational, social, or psychological environment in which the technical core is embedded (e.g., Borman & Motowidlo, 1993; Katz & Kahn, 1978; Organ, 1997). Typical OCBs in Chinese organizations include helping and cooperating with others, volunteering to do more than the minimum required by the job, maintaining interpersonal harmony within the group, protecting company resources, and supporting organizational objectives (Farh, Earley, & Lin, 1997). As both task performance and OCB contribute to overall organizational effectiveness, we include both in our study.

A brief review of the personality literature indicates that among the construct domains of the most popular Big Five personality measure (Costa & McCrae, 1985) – extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience – three of them are quite different from those of cooperative and competitive orientation. For example, conscientiousness is a person-

sociable, gregarious, and assertive (e.g., Digman, 1990). However, the content of these personality traits do not tap into the domains of cooperative or competitive orientation as we defined in this study, such as believing in the interdependent nature of human relationship and positive attitudes toward working with others, or believing that one demonstrates his/her self-worth through outperforming others. Therefore, we hypothesize:

Hypothesis 2: Cooperative and competitive orientation are two individual traits that are distinctively different from the Big Five personalities.

Motowidlo, Borman, and Schmit (1997) introduced a theory of individual differences in task performance and OCB. In support of the theory, subsequent research found significant relationships between the Big Five and job performance (e.g., Barrick & Mount, 1991). Whereas conscientiousness predicted job performance for all occupational groups (e.g., Barrick & Mount, 1991; Hurtz & Donovan, 2000), other personality dimensions demonstrated different predictability when using different performance criterion or for different occupational groups. For instance, extraversion predicted performance in managerial and sales positions, and openness to experience was found to be important in predicting training proficiency (Vinchur, Schippmann, Switzer, & Roth, 1998). Consistent with these findings, evidence also finds a relatively strong and stable relationship between conscientiousness and OCB (Organ & Ryan, 1995), and positive relationships between extraversion, agreeableness, and emotional stability and voluntary cooperative behaviour in a teamwork setting (e.g., LePine & Van Dyne, 2001).

As cooperative and competitive orientation are defined as stable individual differences in peoples' beliefs and attitudes regarding the nature of their relationship with others, we argue that in addition to the Big Five personalities, cooperative and competitive orientation will also significantly affect peoples' work behaviour, including their task performance and OCB. As discussed earlier, due to the pervasive use of team structure in the workplace and the interdependent nature of teamwork, cooperation and competition have become an integral part of daily work, and teamwork becomes increasingly mixed-motive in nature (for a review, see Komorita & Parks, 1995). Individuals who view human relationships as interdependent and find pleasure in working with others are likely to have more communication and interactions with their colleagues, and therefore they have more exchanges of information and knowledge with, and more opportunities to

In a similar vein, individuals who score high on cooperative orientation are more willing to give a helping hand to those in need because they have more frequent communication and interaction with their colleagues which are likely to bring more social exchanges in their relationships (Blau, 1964). This could lead to forming affective bonds and enhancing harmony among group members (Chen & Chen, 2004; Hwang, 1987; Shore, Coyle-Shapiro, Chen, & Tetrick, 2009). Previous research on social orientation (e.g., McClintock & Liebrand, 1988; Parks, 1994) suggests that individuals with a cooperative as opposed to a competitive orientation were more likely to make a voluntary contribution to public good. To the extent that organizational success resembles the public good to organizational members (Chen & Chen, 2009), we expect these individuals to exhibit more OCBs.

On the other hand, individuals who score high on the competitive orientation scale are more likely to focus on self-development and to aspire to do better than others. Under the teamwork structure, to get ahead, they are likely to pay more attention to their own work and try to get more resources and support for their own work. Consequently, they are more likely to excel in their own task performance. Such a strong drive for personal success, on the other hand, is likely to result in ignoring others' needs, or of the team or organizational goals, and therefore these individuals are less likely to perform discretionary behaviours that take much of their personal time, but do not directly benefit their personal goals. Accumulated research in social dilemmas has shown consistently that those who have a strong competition orientation are more likely to 'defect' the collective interest to pursue their self-interest (Bornstein, 1992; Liebrand, 1984).

Taken together, we hypothesize:

Hypothesis 3a: Employees' cooperative orientation will be positively related to both their task performance and OCB, beyond the effects of the Big Five personality traits.

Hypothesis 3b: Employees' competitive orientation is positively related to their task performance but negatively related to OCB, after controlling for the effects of the Big Five personality traits.

M S 3

Sample and procedure. Participants in this study came from 11 organizations in Beijing. These organizations include state-owned, foreign-owned, and domestic private enterprises, in the automobile, IT, electronics, publishing, medical, and consulting industries. With the help from the human resource department in these organizations, we distributed a total of 350 questionnaires to the employees and 58 questionnaires to their correspondent supervisors. The employees did not know that their supervisors were evaluating them, and they were informed that all their responses would be kept confidential. Self-addressed envelopes were provided so

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that the completed questionnaires were directly mailed back to the second author of the paper. The average age of the employee sample was 32.12 years old (SD = 8.27), with 52.1 percent of them being male. Six percent of them were assistants, 64 percent of them were staff members, 13 percent were assistant managers, 16 percent were managers / directors / department chairs, and 2 percent of them were senior managers. The mean age of the supervisor sample was 37.51 (SD = 7.72), and 72.4 percent of them were male. Among these participants, 58 percent of them were managers / directors / department chairs, 31 percent of them were senior managers, and 11 percent of them were general managers or CEOs. A total of 274 employee questionnaires were collected (representing a response rate of 78.3 percent), and among them 234 completed all questions (valid response rate 66.7 percent). On average, each supervisor evaluated 6.33 subordinates (SD = 3.70). Therefore, the data from a total of 234 matching supervisor–subordinator dyads were included in our analyses.

Measures. We created two questionnaires for this study: an employee questionnaire in which we asked subordinates to report their personality using the Big Five scale and to complete the cooperative and competitive orientation scales; and a supervisor questionnaire in which we asked them to evaluate their direct subordinates' task performance and OCB. Therefore, our independent and dependent measures came from different sources, which minimized the potential common method error (Podsakoff, MacKenzie, & Podsakoff, 2003).

Cooperative and competitive orientation. The 13-item scale developed in Study 1 was used to measure employees' cooperation and competition. The reliabilities (Cronbach's alpha) were 0.86 for cooperative orientation and 0.87 for competitive orientation scales, respectively.

Personality. The Big Five personality traits were measured with the 40-item Mini-Markers (a brief version of Goldberg's unipolar Big Five Markers) (Saucier, 1994), with a 9-point Likert scale (*1 = extremely inaccurate, 9 = extremely accurate*). Extraversion, Openness, Agreeableness, Emotional stability, and Conscientiousness were each measured with an eight-item scale. The five scales were computed by summing the responses to each of these items. We ran a CFA of the 40 items and found that the fit indices for the five-factor model were good ($\chi^2 = 65.61$, d.f. = 23, CFI = 0.96, GFI = 0.95, NFI = 0.91, RMSEA = 0.08). The reliability coefficients of the Big Five scales were 0.83 (Extraversion), 0.76 (Openness to experience), 0.82 (Agreeableness), 0.83 (Emotional stability), and 0.80 (Conscientiousness), respectively.

Task performance. Supervisors rated the task performance of their subordinates, using a seven-item scale developed by Williams and Anderson (1991). Sample items included, 'Performs the tasks that are expected as part of this job' and 'Adequately completes responsibilities'. A 5-point Likert scale was used to measure

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task performance (*1 = not at all, 5 = frequently*, if not always). The reliability coefficient for this measure was 0.94.

Organizational citizenship behaviour. Supervisors also rated their subordinates' OCB. We used Farh et al.'s (1997) OCB scale because it was developed in the Chinese context. This scale comprised of five subscales (altruism, conscientiousness, civic virtue, interpersonal harmony, and protecting company resources) with a total of 20 items. Given the high correlations among the OCB dimensions (ranging from 0.50 to 0.72) and our theoretical focus on the overall OCB, we followed previous studies (Hui, Law, & Chen, 1999; Wong, Ngo, & Wong, 2006) to collapse the five dimensions and use the mean of all items to create a composite index of OCB. The reliability coefficient (Cronbach's alpha) for the scale was 0.91.

Control variables. Subordinates' and supervisors' demographics, including gender, age, and job position were included as control variables in this study.

R S 3

CFA results. We first conducted a CFA to test the construct validity of the 13-item cooperation and competition scales. The CFA revealed good fit indices for the two-factor model, $\chi^2 = 150.61$, d.f. = 56, $p < 0.01$; CFI = 0.97, IFI = 0.97, NFI = 0.95, RMSEA = 0.08. We also conducted CFA on a one-factor model, and found poor fit indices: $\chi^2 = 1{,}036.94$, d.f. = 65, p

Table 2. CFA results for various models

	χ^2	d.f.	$\chi 2/d.f.$	$\Delta\chi^2$	CFI	RMSEA
Model 1						
Seven factors; Big-Five, cooperative, and competitive orientation	888.33	329	2.70	—	0.91	0.07
Model 2						
Five factors; Big-Five with cooperative orientation in agreeableness, and competitive orientation in extraversion	1,483.52	340	4.36	595.19**	0.83	0.12
Model 3						
Five factors; Big-Five with cooperative and competitive orientation in agreeableness	1,798.85	340	5.29	910.52**	0.80	0.17

Notes:
** $p < 0.01$.
$N = 274$.
CFA, confirmatory factor analysis; CFI, comparative fit index; RMSEA, root mean square error of approximation.

related to openness, conscientiousness, extraversion, cooperative orientation, and competitive orientation (r ranges from 0.15 to 0.35, $p < 0.05$). These results provide preliminary evidence for H3a and H3b.

As supervisors rated multiple employees, we analysed our data with multilevel modelling (e.g., HLM) to test H3a and H3b. We first entered the demographic variables of the subordinates (age, gender, position) as Level 1 variables, followed by the Big Five as Level 1 variables, and the demographic variables of the supervisor (number of subordinates, age, gender, position) also as Level 2 variables. We then entered the main effects of cooperative and competitive orientation, respectively, as Level 1 variables. The results of this analysis are presented in Table 4.

Several noticeable findings can be seen from Table 4. First, the demographic variables (both supervisor and subordinate) explained 7 percent of the variance in OCB and 11 percent of the variance in task performance. Among the demographics, only supervisors' gender had a significant effect on subordinates' OCB – subordinates of a female supervisor exhibited more OCBs than those of a male supervisor. Second, the Big Five personalities explained significant amounts of additional variance in OCB (18 percent, $p < 0.01$) and in task performance (19 percent, $p < 0.01$), respectively. Among them, conscientiousness had a significant positive relationship with both OCB and task performance ($\beta = 0.37$ and $\beta = 0.19$, $p < 0.01$, respectively). Extraversion had a positive relationship with task performance ($\beta = 0.10$, $p < 0.05$) and agreeableness was positively related to OCB ($\beta = 0.37$, $p < 0.05$). These results are largely consistent with previous research (e.g., Hough, 1992; Mount, Barrick, & Stewart, 1998; Organ & Ryan, 1995).

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Table 3. Means, standard deviations, and correlations of the variables

	Means	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
1. Subordinate age	32.12	8.27															
2. Subordinate gender	1.48	0.50	–0.09														
3. Subordinate position	2.42	0.89	0.33**	0.01													
4. Superior age	37.51	7.72	0.50**	0.01	0.24**												
5. Superior gender	1.28	0.45	–0.20**	0.07	0.02	–0.20**											
6. Superior position	1.53	0.69	0.21**	0.07	0.49**	0.61**	0.06										
7. Openness	47.71	7.76	–0.15*	–0.13*	0.09	–0.03	0.17**	0.11	(0.76)								
8. Conscientiousness	52.59	8.08	0.07	–0.06	0.08	0.10	–0.02	0.04	0.38**	(0.80)							
9. Extraversion	46.96	9.84	–0.18**	–0.04	0.08	0.04	0.17**	0.08	0.43**	0.14*	(0.83)						
10. Agreeableness	53.39	8.87	–0.08	–0.02	–0.24**	–0.30**	–0.07	–0.29**	0.03	0.20**	–0.04	(0.82)					
11. Emotional stability	32.19	10.22	0.03	–0.14*	–0.14**	–0.11	–0.06	–0.16*	0.00	0.37**	–0.20*	0.56**	(0.83)				
12. Number of subordinates	6.33	3.70	0.11	0.02	–0.01	0.49**	–0.11	0.36**	–0.04	–0.06	–0.01	–0.23**	0.06				
13. Cooperative orientation	45.96	8.07	0.02	–0.11	–0.13	–0.16*	–0.10	–0.19**	0.25**	0.28**	0.03	0.64**	–0.40**	–0.19**	(0.86)		
14. Competitive orientation	30.83	9.68	–0.02	0.06	0.26**	0.19**	0.12	0.21**	0.19**	–0.06	0.36**	–0.52**	0.54**	0.17**	–0.23**	(0.87)	
15. OCB	103.15	18.97	0.10	–0.06	–0.12	–0.05	–0.24**	–0.16*	0.14*	0.29**	–0.06	0.36**	–0.26**	–0.15*	0.56**	–0.23**	(0.94)
16. Task performance	29.58	4.95	0.05	–0.06	0.10	0.11	–0.16*	0.06	0.27**	0.35**	0.23**	–0.02	0.09	–0.05	0.20**	0.15*	0.59**

* $p < 0.05$; ** $p < 0.01$.
$N = 234$ at the individual level; $N = 57$ at the supervisor level.
OCB, organizational citizenship behaviour; SD, standard deviation.

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Table 4. Results of hierarchical linear modeling analyses: effects of cooperative and competitive orientation on employees' organizational citizenship behaviour and task performance[a]

	Organizational citizenship behaviour			*Task performance*		
	Model 1	*Model 2*	*Model 3*	*Model 1*	*Model 2*	*Model 3*
Controls						
Intercept	105.25** (2.02)	104.67** (1.95)	104.28** (1.82)	29.69** (0.51)	29.81** (0.51)	29.90** (0.53)
Demographics (Level 1 variables)						
Subordinate age	–0.02 (0.12)	0.02 (0.13)	–0.03 (0.11)	–0.13* (0.06)	–0.06 (0.05)	–0.05 (0.04)
Subordinate gender	0.63 (2.56)	0.58 (2.41)	1.45 (1.83)	–0.14 (0.43)	–0.02 (0.45)	0.05 (0.51)
Subordinate position	–0.86 (1.47)	–1.10 (1.27)	–0.89 (1.08)	0.92* (0.42)	0.37 (0.31)	0.29 (0.37)
Big Five (Level 1 variables)						
Conscientiousness		0.37** (0.14)	0.34** (0.11)		0.19** (0.05)	0.18** (0.04)
Extraversion		–0.07 (0.11)	–0.09 (0.10)		0.10** (0.03)	0.09** (0.03)
Agreeableness		0.37* (0.17)	–0.10 (0.20)		–0.03 (0.05)	–0.05 (0.05)
Openness		0.21 (0.18)	–0.06 (0.17)		0.04 (0.05)	–0.01 (0.04)
Neuroticism		–0.10 (0.14)	–0.07 (0.14)		0.08* (0.03)	0.04 (0.04)
Demographics (Level 2 variables)						
Number of subordinates	–0.99 (0.71)	–0.73 (0.54)	–0.50 (0.51)	–0.18 (0.18)	–0.15 (0.17)	–0.18 (0.19)
Supervisor age	0.23 (0.34)	0.19 (0.26)	0.09 (0.24)	0.22** (0.08)	0.10 (0.07)	0.08 (0.11)
Supervisor gender	–7.87* (3.88)	–8.14* (3.40)	–6.74* (3.04)	–1.01 (0.94)	–1.70 (0.87)	–1.59 (1.21)
Supervisor position	–2.60 (2.65)	–1.57 (2.31)	–1.10 (2.22)	–0.94 (0.76)	–0.54 (0.76)	–0.34 (0.96)
Main effects						
Predictors (Level 1 variables)						
Cooperative orientation			1.06** (0.23)			0.09* (0.04)
Competitive orientation			0.06 (0.13)			0.11* (0.04)
R^2	0.07	0.25	0.39	0.11	0.30	0.43

* $p < 0.05$; ** $p < 0.01$.

[a] $N = 234$ at subordinate level, $N = 57$ at supervisor level. R^2 is calculated based on proportional reduction of Level 1 and Level 2 error variance due to predictors in the models of Table 4 (Snijders & Bosker, 1999).

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Finally, of the greatest interest, we found that after controlling for the effects of the demographics and the Big Five, cooperative and competitive orientation explained an additional significant amount of unique variance in OCB (14 percent, $p < 0.01$) and task performance (13 percent, $p < 0.05$), respectively. Specifically, cooperative orientation had significant positive relationships with OCB ($\beta = 1.06$, $p < 0.01$) and task performance ($\beta = 0.09$, $p < 0.05$); whereas competitive orientation had no significant relationship with OCB ($\beta = 0.06$, n.s.), but a significant positive relationship with task performance ($\beta = 0.11$, $p < 0.05$). R^2 reported in Table 4 is calculated based on proportional reduction of Level 1 and Level 2 error variance due to predictors in the models of Table 4 (Snijders & Bosker, 1999). These results provide considerable support for H3a and partial support for H3b.

DISCUSSION

Building on the finding that the Chinese are strong dialectic thinkers who have a cognitive tendency to accept contradictions (Peng & Nisbett, 1999), we conceptualized cooperative and competitive orientation as two distinct constructs representing stable individual differences in peoples' beliefs about and attitudes toward the nature of human relationships. Adopting the contextualization approach to Chinese management research (Farh et al., 2006), we developed two separate scales to measure cooperative orientation (seven-item) and competitive orientation (six-item), respectively. Data from three studies showed high convergent and divergent validities for the two scales. Specifically, using the response latency method in a lab experiment, we demonstrated that people who scored high on the cooperative orientation scale responded to words of cooperative nature significantly faster than to words of a competitive nature, whereas high competitors responded to words of a competitive nature significantly faster than did low competitors. Moreover, using matched data from supervisor–subordinate dyads in a field survey conducted in multiple Chinese organizations, we found that employees who reported higher scores on the cooperative orientation scale were evaluated as better task performers and engaging in more OCBs, whereas employees who reported higher scores on the competitive orientation scale were ranked better task performers but not necessarily exhibiting more OCBs. Overall, these results suggest that cooperative and competitive orientation are distinct individual traits and that they have differential effects on peoples' cognition and behaviour.

The consistent patterns of results across the three studies are all the more compelling in light of the testing contexts, research methods, and samples between studies. First, we used a qualitative approach to develop the scales using MBA students and professionals in organizations in Study 1. In Study 2 we used samples from college students and tested the distinct nature of cooperative and competitive orientation as stable individual traits in a well-controlled laboratory. In Study 3, a field study was conducted using samples from supervisors and subordinates in their

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current work settings. Second, multiple behavioural responses were measured to capture different effects of cooperative and competitive orientation. Supporting results not only appeared on the reaction time measure in most social cognition studies examining individual schemata, but also on more observable behaviours such as task performance and OCB. The fact that consistent results emerged across studies, samples, and across different dependent variables attests well to the validity of our findings.

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The present research challenges the Western view of cooperation and competition

our findings might well be generalized to people who are characterized with this cognitive capacity.

Second, our findings indicate that the cooperative and competitive orientation are different from the Big Five personalities, and that they are individual attributes that are equally (if not more) powerful predictors of behaviours in organizations. The fact that cooperative and competitive orientation explained significant amounts of additional unique variance in employee task performance and OCB after controlling the effects of the Big Five suggests the importance of these two individual attributes to help us better understand, explain, and predict work behaviours. In today's teamwork environment, including these attributes will provide us a more comprehensive understanding of how individual-level factors influence teamwork behaviour.

Third, the development of the valid cooperative and competitive orientation scales will facilitate more future organization and team research. More systematic studies can be conducted to examine the common and unique antecedents and consequences for cooperative and competitive orientation, thus establishing a nomological network for these two constructs. For example, beyond understanding the creativity process across cultures (Morris & Leung, 2010), do individual attributes like cooperation and competition orientation influence creativity differently in different cultures? Also, previous research has shown that people who can experience more ambivalent emotions tend to be more creative than those who experience few (e.g., Fong, 2006), and it would be interesting to study whether or not people with strong cooperation orientation as well as strong competition orientation will be more creative than people who are not strong on both orientations. Moreover, we might be able to further our theoretical development regarding cooperative and competitive orientation, so as to examine their moderating effects on the various relationships among important organizational variables, such as the relationship between task structure and work team performance, the relationship between organizational culture and individual turnover behaviour, and so on. The introduction of the two scales opens an avenue to re-examine many organizational behaviour and human resource issues, which in turn could bring fresh perspectives and shed light on previously puzzling phenomena, such as why individual performance-based reward systems work effectively in motivating the 'collectivistic' Chinese employees (e.g., Chen, 1995). It could be because these employees have a very strong competitive orientation, and that the individual performance reward system facilitates their motivation to outperform others.

In addition, it is interesting to find that competitive orientation did relate positively to personal task performance but did not exert negative effect on OCB. Viewing others as means to develop self, to show self-worth, or to demonstrate self-superiority is not necessarily achieved at the expense of undermining the collective interest is somewhat counter-intuitive, but has significant theoretical

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implications. It suggests that a competitive orientation can serve as an individual attribute that facilitates performance, just as conscientiousness (Barrick & Mount, 1991) or a cooperative orientation can.

While a majority of the findings provided strong support for our hypotheses, there was one non-significant finding that warrants discussion. This finding was from Study 2, in which high cooperators did not respond faster to cooperative words than low cooperators. A plausible explanation for this might be related to the variance of our data. We found that participants' scores on the cooperative orientation scale were highly skewed toward the high end, and the difference between scores of a high cooperator and a low cooperator was only two points (maximum four points). One of the reasons for the positively skewed distribution might be related to the social desirability effect. Putting our study in a broader context of the Chinese culture in which interpersonal harmony, cooperation, and 'face' are highly emphasized (Hwang, 1987; Triandis, 1995), it is conceivable that a socially desirable way of reporting oneself on the cooperative orientation scale is to give a high rating to the items. Future studies should make an effort to examine the social desirability effect when measuring cooperative orientation. More cross-validation can also be done to examine the consistency between what we get from our cooperative orientation scale and previous measurement methods such as the decomposed games[1] developed by Kelley and Thibaut (1978) and others (e.g., Liebrand, 1984) in measuring social orientation.

We tested our hypotheses in the Chinese context, which is a unique culture in which people have a strong cognitive tendency of reconciling contradictive perspectives. Studies have shown that East Asian cultures differ on many dimensions. For example, Kim, Weber, Leung, and Muramoto (2010) found differences in perceptions of fairness among Japanese, South Korean, and Hong Kong people. Chen (2005) described numerous differences in business styles among Chinese, Japanese, and Koreans. Recent research on naïve dialecticism (Spencer-Rodgers et al., 2009), however, has shown that East Asians, not only Chinese, but also Japanese, have beliefs characterized by tolerance for contradiction, the expectation of change, and cognitive holism. They also found that contradictory self-knowledge was more readily available and simultaneously accessible among East Asians than among Euro-Americans. It will be desirable to see how varying degrees of dialectical thinking would influence the extent to which people in other East Asian cultures view cooperation and competition as distinct or as negatively correlated.

Moreover, we can also test the extent to which cross-cultural value dimensions (e.g., individualism–collectivism, high-context vs. low-context) influence individual differences in cooperative and competitive orientation. Future studies could also test how these two constructs manifest at the cultural level, and how people with different cooperative/competitive orientation interact with others from different cultures. There seem to be endless possibilities for further research on the constructs of cooperative and competitive orientation.

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We recognize on the other hand that this research has limitations. One limitation is related to the cross-sectional data in the survey study, which prevent us from making causal inferences of our findings. For instance, while we found that coop-

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Xiao-Ping Chen (xpchen@u.washington.edu) is currently Professor and Chair of the Department of Management and Organization at the Foster School of Business, University of Washington, and the Editor of *Organizational Behavior and Human Decision Processes.* Her research interests include social dilemmas, global leadership, entrepreneur passion, creativity, and Chinese guanxi. Professor Chen has published her research in management journals such as *Academy of Management Review*, *Academy of Management Journal*, *Journal of Applied Psychology*, and *Journal of International Business Studies*.

Xiaofei Xi (xiaofei@pku.edu.cn) is currently Professor of Psychology at the Peking University. She is a leading expert on risk perception and organizational behaviour. Her research covers two separate subject areas. In the area of risk perception, she has written extensively on the effects of personality, emotion and social comparison on individuals' risk perception. In the organizational behaviour area, her research mainly focuses on the team members' cooperative and competitive behaviour and their stress management.

Shiqing Chang is currently a graduate student at Northwestern University. She received her B.S. and M.S. from Peking University. Her research interest is in organizational behaviour.

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