

The Influence of Organizational Culture on Work-Related Personality Requirement Ratings: A multilevel analysis

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The effects of organizational culture on job incumbents' ratings of work-related personality requirements were investigated. Data collected from 270 customer service representatives working within 37 mobile phone service companies in China demonstrated significant between-organization differences and sufficient within-organization agreement on two dimensions of work-related personality requirements, achievement orientation and conscientiousness, to suggest that these work-related personality requirements can be interpreted as organizational-level constructs. Furthermore, incumbents' ratings of the two personality requirements were positively related to two corresponding dimensions of organizational culture, achievement-oriented culture and integrity-oriented culture, respectively, and as predicted, both were positively associated with team-oriented culture. Further analyses revealed that team-oriented culture appeared to play a particularly salient role in predicting incumbents' perceptions about the importance of the two dimensions of personality requirements.

1. Introduction

As a systematic process of collecting, analyzing and structuring information about jobs (Harvey, 1991; McCormick, 1976), job analysis plays a pivotal role in human resource management (HRM) practices (e.g., personnel selection) by providing information about job tasks and such worker requirements as knowledge, skills, abilities and other characteristics requirements (KSAOs, Sackett & Laczko, 2003; Sanchez & Levine,

2000). Therefore, investigating factors that influence job analysis ratings can contribute to HR practices in organizations. Indeed, researchers have increasingly investigated sources of within-job variance in job analysis ratings (e.g., Borman, Dorsey, & Ackerman, 1992; Dierdorff & Wilson, 2003; Harvey, 1991; Morgeson & Campion, 1997; Sanchez, Prager, Wilson, & Viswesvaran, 1998).

However, job analysis has been criticized recently as being obsolete (e.g., Church, 1996; Lawler, 1994;

Ployhart & Schneider, 2002; Wright & Boswell, 2002) because, traditionally, it has merely focused on tasks, and worker requirements, such as KSAOs, within a job at the individual level, without taking into account organizational characteristics, such as organizational goals and culture (e.g., Ployhart & Schneider, 2002; Sackett & Laczko, 2003; Sanchez & Levine, 2001; Shippmann *et al.*, 2000). Further, scholars in the fields of job/work design have argued that organizational context variables are likely to impact incumbents' perceptions toward their job (Morgeson & Campion, 2002, 2003; Parker, Wall, & Cordery, 2001). To date, however, there has been little empirical research on the effects of organizational contextual variables on job analysis ratings (Van Iddekinge, Putka, Raymark, & Eidson, 2005).

The present study investigated the effects of organizational culture on work-related personality requirement ratings provided by incumbents holding the same job. The purposes of this study were threefold. First, it examined whether significant between-organization differences exist in individual-level ratings of work-related personality requirements. Second, it tested whether work-related personality requirements are also organizational-level constructs. Third, it explored whether between-organization differences in incumbents' perceptions of work-related personality requirements could be accounted for by dimensions of organizational culture.

The current study contributes to the further development of the job analysis field in several ways. First, investigating between-organization differences in job analysis ratings and the impacts of organizational context variables (such as organizational culture) on individual-level job analysis ratings can help determine the transportability of job information (work-related personality requirements in particular) across organizations. The transportability of job information across organizations is fundamentally based on job similarity (Society for Industrial and Organizational Psychology, 2003). Thus, if worker requirements, even if provided by job incumbents, for performing the same job differ from one organization to another, the transportability across organizations of job information, as well as HR practices stemming from that information (e.g., the identification of critical job requirements to be used in selection and training) may not be warranted. This concern may even extend to the case of multiple organizations that belong to the same parent company, as was the case in the present study. Similarly, if job requirements differ across organizations with different cultures, organizational psychologists may need to consider the culture of the organization when applying job information from a generic job database, such as the US Department of Labor's Occupational Information Network (O*NET, Peterson, Mumford, Borman, Jean-

neret, & Fleishman, 1999; Peterson *et al.*, 2001), to a job within that organization.

Identifying the emergence of organizational-level job requirements and the role of organization culture in shaping those requirements are important to job analysis and HRM research. Scholars have argued that different organizations may have different KSAO requirements to their employees, due to their different goals, culture and strategies, in order to gain sustained competitive advantages (Capaldo, Landoli, & Zollo, 2006; Lawler, 1994; Ployhart, Weekley, & Baughman, 2006; Sandberg, 2000), suggesting the existence of organizational-level job requirements and the importance of integrating organization culture into the job requirements of employees in an organization as a whole. But few studies have empirically examined whether job requirements vary systematically across organizations and the relationships between job requirements and organizational culture.

Multilevel theory is applicable to this study to examine the cross-level effects of organizational culture on individual-level work-related personality requirement ratings and to test whether work-related personality requirements can operate at the organizational level. According to multilevel theory (Bliese, 2000; Kozlowski & Klein, 2000), there must be significant between-organization differences in, and sufficient within-organization agreement on, individual-level ratings of work-related personality requirements to empirically justify that work-related personality requirements may also be organizational-level constructs in the context of this study. Moreover, the presence of work-related personality requirements at the organizational level should also be supported theoretically. In the following sections, we first review previous studies on sources of within-job variance in job analysis ratings at the individual level and explain our hypothesis predicting between-organization differences in individual-level work-related personality requirement ratings; then we describe in greater detail our theoretical rationale for why work-related personality requirements may operate as organizational-level constructs. Finally, we present hypotheses predicting that organizational culture influences work-related personality requirement perceptions at both individual and organizational levels.

1.1. Between-organization differences in job analysis ratings

Studies have identified a variety of sources of within-job variance in job analysis ratings, including rater characteristics, such as demographic variables (e.g., Cascio & Valenzi, 1977; Landy & Vasey, 1991; Schmitt & Cohen,

1989; Tross & Maurer, 2000); level of performance (e.g., Borman *et al.*, 1992; Sanchez *et al.*, 1998); social and cognitive variables (e.g., Cucina, Vasilopoulos, & Sehgal, 2005; Morgeson & Campion, 1997; Morgeson, Delaney-Klinger, Mayfield, Ferrara, & Campion, 2004); and work attitudes (Conte, Dean, Ringenbach, Moran, & Landy, 2005). Given that jobs are performed within the context of organizations, it is likely that organization characteristics, such as structure, goals and culture, influence incumbents' job analysis ratings, such as the importance of particular tasks in the job, how those tasks are accomplished and how important particular job requirements are to the job (Lindell, Clause, Brandt, & Landis, 1998; Sutton & Rousseau, 1979).

Three prior studies have examined the effects of organizational context variables on job analysis ratings. Ployhart, Schmitt, and Rogg (2000) found that food service managers working in inner-city locations engaged in different job tasks than managers of the same job in rural and suburban places. Lindell *et al.* (1998) reported that organizational structure variables (organization size, amount of boundary spanning, technology and formalization) and level of organizational effectiveness correlated with incumbents' ratings of the time they spent on critical tasks. These authors suggested that organizations may permit or even demand job incumbents to adapt their work behavior to the organization's context. They went further to suggest that the same job performed in different organizations may require somewhat different knowledge, skills, abilities and work-related personality requirements. Likewise, two other studies proposed that job requirements may be influenced by each organization's culture (Capaldo *et al.*, 2006; Sandberg, 2000). Therefore, it is likely that the same job performed in different organizations requires different work-related personality requirements.

More recently, applying variance components models on data from three levels of raters across five organizations, Van Iddekinge *et al.* (2005) tested sources of error variance in job specification ratings attributable to organization membership, rater demographic variable and position level. However, they found that the supervisors' rank-orderings of KSAOs were not affected significantly by these variables. The non-significant findings of relationship between organization membership and KSAOs rank-orderings of this study, as the authors argued, may be due to the small number (five) of organizations from the same parent company. Therefore, they suggested that future research should collect data from a large number of organizations and use a non-manager sample. Following their suggestions, the present study examined between-organization differences in work-related personality requirement ratings given by job incumbents, using a sample of customer service representatives working within 37 different

organizations, from a relatively larger range of organizational context.

We focused on work-related personality requirements for jobs in this study for two reasons. First, we believe that, compared with other types of job requirements, such as knowledge, skills and abilities, personality requirements for the same job are more likely to vary across organizations and to be influenced by organization culture. Second, work-related personality requirements play an important role in determining significant personality traits (Borman, Kubisiak, & Schneider, 1999; Raymark, Schmit, & Guion, 1997; Sackett & Laczko, 2003), many of which have been found to be significantly related to contextual performance, team performance and organizational effectiveness (e.g., Borman & Motowidlo, 1993; Hofmann & Jones, 2005; Ployhart *et al.*, 2006; Stewart, 2003).

To measure work-related personality requirements, we used the Work Styles instrument (Borman *et al.*, 1999) from O*NET, a comprehensive job analysis system with an online database accessible globally (Peterson *et al.*, 2001). We focused on four, multi-item dimensions: *achievement orientation*, *interpersonal orientation*, *conscientiousness* and *creative orientation*. Achievement orientation refers to setting high goals, working hard, persisting and striving for work competence. Interpersonal orientation includes cooperation, being sensitive to others and the preference of working with others. Conscientiousness contains integrity, being careful and dependability, but excludes achievement-related content (Borman *et al.*, 1999).¹ We used original items in the Work Styles instrument (Borman *et al.*, 1999) to measure the three dimensions and combined three items, independence, innovation and analytical thinking, to present creative orientation, which includes elements of generating new ideas, using logic to address work problems and being independent. The four Work Styles dimensions were chosen mainly because they approximately fit the organizational culture measure used in this study.

Based on the above reasoning, we hypothesized that

H1: There will be significant between-organization variance in job incumbents' importance ratings of work-related personality requirements: achievement orientation, interpersonal orientation, conscientiousness and creative orientation.

1.2. Multilevel theory and the emergence of organizational-level work-related personality requirements

Multilevel studies often address the hierarchical nature of organizational phenomena, for instance, individuals

nested in groups and groups in turn nested in organizations (House, Rousseau, & Thomas, 1995; Kozlowski & Klein, 2000). The multilevel analytic approach is well suited for examining the presence of high-level constructs (e.g., organizational-level work-related personality requirements in this study) and cross-level correlations (e.g., the association between organizational culture and individual-level work-related personality requirement ratings). A variety of frameworks have been established concerning the validation of multilevel constructs (e.g., Chan, 1998; Chen, Mathieu, & Bliese, 2004; Kozlowski & Klein, 2000; Morgeson & Hofmann, 1999), such as how higher level constructs are formed from lower level constructs, or the emergence of higher level constructs in other words. One type of emergence of higher level constructs is the composition model, which emphasizes the shared collective properties of a group or an organization with the assumption of 'isomorphism between manifestations of constructs at different levels' (Kozlowski & Klein, 2000). Stated differently, constructs of the composition model at the organizational level, for example, share substantially the same contents and meanings as the counterpart constructs at the individual level. In the case of our multilevel theory, individual-level work-related personality requirements are work-related personality required for job incumbents to successfully accomplish their job tasks, which are usually identified through traditional job analysis methods (Harvey, 1991; Raymark *et al.*, 1997). Similarly, organizational-level work-related personality requirements are personality requirements for major employees in an organization as a whole, which are essential to organizational effectiveness and organizations' sustained competitive advantages. We believe that individual- and organizational-level work-related personality requirements fall into the category of the composition model with substantially identical contents and meanings. Further, they are likely to be influenced by the same antecedents, for example organizational culture in this study (Morgeson & Hofmann, 1999).

Organizational-level work-related personality requirements can emerge from a variety of interaction processes among employees and management practices within an organization, such as shared leadership and HR practices. For example, studies on collective leadership have found that leadership behaviors can pervade and be shared in work units (Hackman, 1992), which in turn results in a group norm (Avolio & Bass, 1995) or a 'managerial climate' (McGregor, 1960) emphasizing certain kinds of behaviors (e.g., caring for others). In addition, HR practices (such as selection, orientation and training) can shape employees' behaviors and attitudes (Wright, McMahan, & McWilliams, 1994) and engender certain types of organizational climate on what collective knowledge, skills and personality traits

are essential to organizational effectiveness (Ostroff & Bowen, 2000). Furthermore, Attraction-Selection-Attrition (ASA) theory suggests that after the attraction, selection and attrition processes, employees in one organization tend to become homogeneous in terms of personality (Ployhart, 2006; Ployhart *et al.*, 2006; Schneider & Smith, 2004; Schneider, Smith, Taylor, & Fleener, 1998). All of these processes can lead employees in an organization to form a shared perception of what personality traits are important and required in the organization. Once these perceptions are shared by employees in one organization, as indicated by sufficient within-organization agreement, the construct of organizational-level work-related personality requirements emerges and exists. Organizational culture, shared values and norms, plays an essential role in these processes, which will be illustrated in the next section in detail.

Empirical studies on the emergence of team and organization personality have found that members in a team or an organization have similar personality traits and these shared personality traits are significantly related to team or organizational effectiveness. For example, Barrick, Stewart, Neubert, and Mount (1998) and Neuman and Wright (1999) reported that teams with higher means of agreeableness and conscientiousness showed better performance than those with lower means of the two personality traits. Ployhart *et al.* (2006) found that organizations with individuals having high scores on conscientiousness, emotional stability and extraversion as a whole showed better performance than those with individuals having lower scores on these personality traits. Although these studies did not investigate work-related personality requirements *per se*, they do imply that members of an effective team or organization with similar personality traits may have similar perceptions on what work-related personality requirements are important to the effectiveness of their job.

Following the traditional approaches adopted in the job analysis field, and team and organization personality research, we aggregated individual-level work-related personality requirements given by job incumbents to generate organizational-level work-related personality requirements, using the direct-consensus model advanced by Chan (1998). This model requires significant between-organization differences and sufficient within-organization agreement in terms of individual responses of the construct work-related personality requirements in this study (Bliese, 2000; Kozlowski & Klein, 2000). Hypothesis 1 concerned between-organization differences on the four dimensions of work-related personality requirements; thus, Hypothesis 2 focused on within-organization agreement on these dimensions.

H2: There will be sufficient within-organization agreement in job incumbents' importance ratings of the four

dimensions of work-related personality requirements, achievement orientation, interpersonal orientation, conscientiousness and creative orientation, to support the emergence of organizational-level work-related personality requirements.

1.3. The influence of organizational culture on work-related personality requirements

Organizational culture encompasses shared values and norms of members in a group or an organization (O'Reilly, Chatman, & Caldwell, 1991; Patterson et al., 2005; Schein, 1992; Syantek & Bott, 2004). We expected organizational culture to influence incumbents' perceptions of work-related personality requirements at both individual and organizational levels for three reasons. First, values are shared beliefs and rules about appropriate behaviors and attitudes (Rokeach, 1973). In order to gain acceptance by colleagues and managers, employees are likely to exhibit behaviors that are congruent with what they perceive to be valued by their organization. Further, organizational culture serves one organization as a form of social control (O'Reilly & Chatman, 1996), such that employee behaviors that are aligned with the organization's culture are rewarded and behaviors deviating from culture norms are punished or corrected (Chatman & Spataro, 2005). Therefore, to perform the behaviors emphasized by organizational culture, it is likely for employees to perceive corresponding work-related personality requirements as important to their jobs.

Finally, studies on ASA model provide further support for the expected influence of organizational culture on work-related personality requirement ratings. ASA theory (Schneider, 1987; Schneider, Goldstein, & Smith, 1995; Schneider et al., 1998) proposes that there is a natural tendency for organizations to attract, select and retain employees who share similar characters with them. Organizational culture plays an important role in the ASA processes. Empirical evidence suggests that organizations emphasizing a certain kind of values attract and select employees who agree with the values or employees whose characteristics are congruent with the values. After the attraction and selection stage, newcomers internalize the values of the organizations and accept the norms of organizations. Further, in the socialization process through interactions with their peers and supervisors, those who fail to adopt those values or do not fit their organizations tend to leave (Cable & Judge, 1997; Cable & Parsons, 2001; Chatman, 1991; Judge & Cable, 1997; O'Reilly et al., 1991; Trice & Beyer, 1993). All these processes lead to a relative homogeneity in individual characteristics, personality in particular, in organizations (Schaubroeck, Ganster, & Jones, 1998; Schneider et al., 1998). Therefore,

individuals who remain in organizations are likely to share their organization's values and share similar personality traits that are consistent with those values, resulting in their similar perceptions of what work-related personality requirements are important to their job.

The organizational culture instrument used in this study was developed from a study by Ostroff, Shin, and Kinicki (2005) to measure employees' perceptions of organizational values, with four dimensions: *achievement-oriented culture* (taking initiative, results focus and high performance expectation), *team-oriented culture* (being team-oriented and supportive, sharing information and working in collaboration), *integrity-oriented culture* (professionalism, honesty, integrity and trustfulness) and *creativity-oriented culture* (flexibility, innovation, risk taking and being quick to take advantage of opportunities). The four corresponding dimensions of work-related personality requirements are achievement orientation, interpersonal orientation, conscientiousness and creative orientation.

One way in which organizational culture influences incumbents' perceptions of work-related personality requirements would be that the more job incumbents perceive that their organizations value one specific dimension of organizational culture, the more they would regard the conceptually similar dimension of work-related personality requirements as important to their job. Studies on organizational climate, which is regarded as a surface manifestation of organizational culture (Schein, 2000; Schneider, 2000), found that an innovative climate was significantly related to the degree to which employees conduct innovative behavior (e.g., Scott & Bruce, 1994; West & Anderson, 1996). Similarly, safety climate was found to influence employees' safety behaviors (e.g., Hofmann & Stetzer, 1996). These studies suggest that employees are likely to perceive work-related personality requirements valued by their organizations' salient cultural features as particularly important to their job performance, leading to Hypothesis 3,

H3a: Achievement-oriented culture will be positively related to the importance of achievement orientation requirement at both individual and organizational levels.

H3b: Team-oriented culture will be positively related to the importance of interpersonal orientation requirement at both individual and organizational levels.

H3c: Integrity-oriented culture will be positively related to the importance of conscientiousness requirement at both individual and organizational levels.

H3d: Creativity-oriented culture will be positively related to the importance of creative orientation

requirement at both individual and organizational levels.

One might argue that finding relationships between dimensions of job requirements and similar dimensions of organizational culture is not particularly surprising. We agree that the constructs are similar, but note that the rating targets are quite different (job requirements vs what an organization values). Furthermore, such a finding has yet to be established and has important significance for job analysis research and practice.

We are also aware of another way in which organizational culture influences incumbents' perceptions of work-related personality requirements. Based on cooperation and competition theory (Deutsch, 1949, 1973, 1990), organizations with a team-oriented culture are likely to have incumbents who perceive a wide range of work-related personality requirements to be important. Deutsch's Cooperation and Competition Theory (1949, 1973, 1990) posits that in cooperation situations that are usually caused by common tasks and shared vision, people are likely to feel that their goals are cooperatively, rather than competitively or independently, correlated: one moves toward his/her goal can aid others' goal achievement. Therefore, people in cooperative situations would engage in promotive interactions (e.g., mutual encouragement and support, and open-mindedness) to increase the possibility for each other to achieve their goals, because they would also benefit from others' goal achievements. Consequently, cooperation results in a high level of performance, interpersonal relationship and well-being.

Empirical evidence from experimental and field studies, summarized in meta-analytic studies, suggests that in cooperative situations, compared with competitive and independent ones, people are more likely to help and assist each other (De Dreu, 2007; Johnson, Geoffrey, Johnson, Deborah, & Skon, 1981; Johnson & Johnson, 1989; Stanne, Johnson, & Johnson, 1999), exchange ideas and discuss different views open-mindedly (Alper, Tjosvold, & Law, 1998; Tjosvold, 1990, 1997; Tjosvold, Margaret, & Zi-you, 2005; Tjosvold, Sasaki, & Moy, 1998). Consequently, they come up with more new ideas and implement them persistently (Chen, Liu, & Tjosvold, 2005; Tjosvold, Tang, & West, 2004; Wong, Tjosvold & Liu, in press), trust and are trusted by each other (Tjosvold, 1999), expand their formal job description and exhibit extra-role behaviors (Tjosvold, Hui, & Yu, 2003; Tjosvold & Yu, 2004) and have good interpersonal relationships with each other (Johnson *et al.*, 1981; Johnson & Johnson, 2005; Stanne *et al.*, 1999). As such, it is likely that in organizations with a team-oriented culture valuing cooperation, sharing information and teamwork, employees would perceive that their jobs require them to be creative, trustful and helpful, and thereby regard creative

orientation, conscientiousness and interpersonal orientation as important to their job.

Furthermore, a team-oriented culture may also impact incumbents' perceptions on achievement orientation requirement. People in cooperative situations often encourage each other to exert more energy to accomplish their goals (Johnson & Johnson, 1989) and obtain higher performance (Stanne *et al.*, 1999), because one's goal achievement would help others succeed. Studies have found that in cooperative situations, people are motivated to spend more time and exert more energy on work tasks (Johnson & Johnson, 1989; Tjosvold, Andrews, & Jones, 1983), and become confident to achieve a higher level of performance because they can rely on each others' abilities (Alper, Tjosvold, & Law, 2000; Wong, Tjosvold & Liu, in press). All these lead to a high level of performance and achievement (Stanne *et al.*, 1999).

Therefore, we hypothesized that

H4: A team-oriented culture will be positively related to the importance of achievement orientation, interpersonal orientation, conscientiousness and creative orientation requirements at both individual and organizational levels.

2. Method

2.1. Participants

Three hundred and three employees participated in this study. They were from 37 franchised mobile phone service organizations belonging to the same parent company in south-eastern China. The 37 organizations are located in different sites, operate independently and serve as their own profit centers. The range of organizational size (number of all employees) was from 6 to 30, with a mean of 13.89. An HRM coordinator working for the parent company helped in the sampling and questionnaire administration. All the 37 organizations participated for reports of a diagnosis of the culture of their organizations and the analysis of the job under investigation, which was available to the parent company and each organization. The survey was anonymous and respondents were promised that the information collected would be used only for academic research and would be kept confidential. Two hundred and seventy usable questionnaires were returned, with a response rate of 89.11%. The average number of questionnaires returned per organization was 7.30, with a range from 3 to 22 depending on the number of employees holding the same job of concern in this study. A review of each participant's job description, which was accessible to the HR coordinator, confirmed that participants had the same job title of customer service representative.

Moreover, they had the same primary job responsibilities of delivering customer services to mobile phone users. The average age of the participants was 24.43 years ($SD = 2.09$), with an average job tenure of 3.86 years ($SD = 2.09$). Of the 270 participants, 80 were males (29.60%). The education level of the participants ranged from high school to bachelor's degree, with 68.90% having either an associate's or a bachelor's degree.

2.2. Measures

2.2.1. Organizational culture

Following other researchers (e.g., O'Reilly et al., 1991; Patterson et al., 2005; Zammuto, Gifford, & Goodman, 2000), we operationalized organizational culture as the shared organizational values. We adapted the organizational values scale developed by Ostroff et al. (2005) for customer-service-based organizations, which is based on Quinn and Rohrbaugh's (1983) competing values framework (CVF). The translation-back translation procedure (Brislin, 1980) by three, bilingual graduate I/O psychology students and one I/O professor was used to ensure the conceptual equivalence of the instrument. The Ostroff et al. (2005) measure of organizational culture includes a diverse range of organizational value facets organized under four value dimensions: human relations, open systems, internal processes and rational goals. We used all these 18 items to capture team-oriented culture, creativity-oriented culture, integrity-oriented culture and achievement-oriented culture. On the other hand, following discussions of the content of the organizational culture dimensions with HR managers in the participating organizations, we also included three additional items from similar subscales of the Organizational Culture Profile (O'Reilly et al., 1991). Specifically, 'risk taking' and 'being quick to take advantage of opportunities' were added to the open systems dimension and 'pursuing excellence' was added to the rational goal dimension. Thus, 21 items were used to measure organizational culture.

Participants were asked to indicate the degree to which they perceived their organization to endorse each value on a seven-point scale ranging from 1 ('very little extent') to 7 ('very great extent'). Because we had a prior expectation regarding which dimension the items should load, we performed confirmatory factor analyses (CFAs) to test the discriminant validity of the organizational culture measures. In the beginning, we examined the model with all the 21 items, but the original four-factor model did not fit the data well ($\chi^2 = 1376.23$, $df = 184$, $RMSEA = .153$, $CFI = .792$, $TLI = .763$, $GFI = .748$ and $IFI = .793$). Then we dropped items that loaded on other dimensions they

were not hypothesized to according to the modification indices and retained items most relevant to the corresponding dimensions of work-related personality requirements. Finally, 12 items were left, with nine from the Ostroff et al. (2005) instrument, and we obtained a four-factor model with an acceptable model fit ($\chi^2 = 98.57$, $df = 48$, $RMSEA = .067$, $CFI = .977$, $TLI = .969$, $GFI = .936$ and $IFI = .977$). Item loadings on the hypothesized factors ranged from .68 to .99, and all were significant.

The construct of the final model was similar to that of the Ostroff et al. (2005) instrument, with a loose connection with CVF (Quinn & Rohrbaugh, 1983). We renamed the four dimensions to better reflect the content of their items. The *integrity-oriented culture* included three items, values of having a good reputation, honesty and integrity, and *creativity-oriented culture* comprised three items: flexibility, risk taking and being quick to take advantage of opportunities. Three values items, results focus, having high expectation for performance and pursuing excellence, belonged to one factor entitled *achievement-oriented culture* and three other values items, being team-oriented, sharing information and being supportive, belonged to the factor of *team-oriented culture*. The internal consistency reliability of the four dimensions ranged from .80 to .91. Subscale scores were obtained by averaging the items composing each subscale.

Means of individual scores on organizational values across all participants in one organization were used as organizational culture scores. To justify the validity of averaging individual ratings of organizational values to the organizational level, we used $r_{wg(j)}$ (James, Demaree, & Wolf, 1984, 1993) and calculated intraclass correlations [ICC(1) and ICC(2)] to estimate within-organization agreement and the reliability of the means of organizational-level variables (Bliese, 2000; Kozlowski & Klein, 2000). We also calculated the internal consistency reliability of organizational-level scales using the average scores per organization as inputs.

The median $r_{wg(j)}$ values for the four organizational culture measures, integrity-oriented culture, creativity-oriented culture, achievement-oriented culture and team-oriented culture, across the 37 organizations exceeded the benchmark of .70 as suggested by Klein and Kozlowski (2000): .89, .82, .87 and .86, respectively (ranging from .35 to .99, with only six out of 148 (37×4) $r_{wg(j)}$ values below .50). Results of one-way analysis of variance (ANOVA) using organization membership as the independent variable revealed a significant between-organization difference on the four culture measures ($F(36, 233) = 1.88$, $p < .01$, $\eta^2 = .22$ for integrity-oriented culture; $F(36, 233) = 2.65$, $p < .001$, $\eta^2 = .29$ for creativity-oriented culture; $F(36, 233) = 1.98$, $p < .001$, $\eta^2 = .23$ for achievement-oriented culture; $F(36, 233) = 2.22$, $p < .001$, $\eta^2 = .26$

for team-oriented culture). The ICC(1) values for the four culture measures (in the same order as just illustrated) were .11, .19, .12 and .14, respectively, in keeping with previous studies (Campion, Medsker, & Higgs, 1993; Hofmann & Jones, 2005; Hofmann & Stetzer, 1996, 1998; Kozlowski & Hulst, 1987). ICC(2) values were .47, .63, .49 and .55, respectively, two of which (.47 and .49) were slightly lower than what is usually found in organizational-level research. Because ICC(2) values are a function of unit size and ICC(1) values (Bliese, 1998), we suspect that these two relatively less reliable means [e.g., low ICC(2) values] were likely to result from the small average number of participants per organization (7.30) in this study. Given the significant results of ANOVA and the high values of $r_{wg(i)}$ and ICC(1), following Hofmann and Jones (2005), we proceeded with our analyses by aggregating individual-level ratings to the organizational level, while noting that the reliability of the means of organizational culture dimensions was less than optimal. Organizational-level scale internal consistency reliability indices for the four cultural subscales were .98, .93, .93 and .96. Taken together, these results suggest that within-organization agreement and the reliability of organization means of these cultural dimensions were sufficiently high to justify the aggregation of individual-level values ratings to represent organizational-level value scores.

2.2.2. Work-related personality requirements²

The O*NET Work Styles instrument (Borman et al., 1999) was used to measure the importance of work-related personality requirements. A Chinese version of this instrument was used in a previous study (Taylor, Li, Shi, & Borman, 2008). Participants were asked to rate the importance of personality requirement items to their job performance on a five-point scale ranging from 1 'not important' to 5 'extremely important.' *Achievement orientation* includes three related items: achievement/effect (establishing and maintaining challenging achievement goals and exerting effort), persistence (persistence when facing job obstacles) and initiative (take on responsibilities and challenges) with an internal consistency (Cronbach's α) of .81. The three items comprising *interpersonal orientation* are cooperation (being pleasant with others, being cooperative), concern for others (sensitive to others' feelings and needs) and social orientation (the preference of working with others), with an internal consistency of .83. *Conscientiousness* is comprised of three items: dependability (being reliable, responsible and dependable), attention to detail (being careful about details) and integrity (being honest). Finally, *creative orientation* also includes three items: innovation (creativity and generating new ideas), analytical thinking (using logic to address work problems) and independence (developing one's own way to accomplish tasks). The internal consistency

indices of *conscientiousness* and *creative orientation* were .84 and .87, respectively.

CFAs were performed in order to test the discriminant validity of the Work Styles measure. We compared the model fit of three nested models: the hypothesized four-factor model (achievement orientation, interpersonal orientation, conscientiousness and creative orientation), a three-factor model in which conscientiousness and achievement orientation were combined³ and a one-factor model in which all items were restricted to load on one factor. The results showed that the hypothesized four-factor model fit the data better than the three-factor model ($\Delta\chi^2 = 56.83$, $\Delta df = 3$, $p < .01$) and the one-factor model ($\Delta\chi^2 = 172.08$, $\Delta df = 6$, $p < .01$), with acceptable fit indices (for the four-factor model, $\chi^2 = 93.93$, $df = 48$, RMSEA = .059, CFI = .978, TLI = .970, GFI = .949 and IFI = .979; for the three-factor model, $\chi^2 = 150.76$, $df = 51$, RMSEA = .085, CFI = .952, TLI = .938, GFI = .952 and IFI = .953; and for the one-factor model, $\chi^2 = 266.01$, $df = 54$, RMSEA = .120, CFI = .899, TLI = .877, GFI = .852 and IFI = .900). Item loadings on the hypothesized factors ranged from .67 to .88, and all were significant.

We also calculated values of $r_{wg(i)}$ (James et al., 1984, 1993) and ICC(1) and ICC(2) (Bliese, 2000; Kozlowski & Klein, 2000) to estimate within-organization agreement and the reliability of means of organizational-level work-related personality requirements. The median $r_{wg(i)}$ values for the four organization-level work-related personality requirement dimensions, achievement orientation, interpersonal orientation, conscientiousness and creative orientation, across the 37 organizations were all above the benchmark of .70: .87, .86, .85 and .84. But results of ANOVA, using organization membership as the independence variable, showed that significant between-organization differences only emerged on two dimensions, achievement orientation ($F(36, 233) = 1.70$, $p < .05$, $\eta^2 = .20$) and conscientiousness ($F(36, 233) = 1.56$, $p < .05$, $\eta^2 = .20$), whereas not on interpersonal orientation ($F(36, 233) = 1.36$, $p > .05$) or creative orientation ($F(36, 233) = 1.30$, $p > .10$). ICC(1) values for the four dimensions (in the order of achievement orientation, interpersonal orientation, conscientiousness and creative orientation) were .09, .05, .04 and .07. ICC(2) values, in the same order, were .41, .27, .23 and .38. The non-significant between-organization differences on interpersonal orientation and creative orientation and the low values of ICC(1) and ICC(2) for these two dimensions provided little support for the emergence of organizational-level personality requirements for them. Although ICC(1) and ICC(2) values for achievement orientation and conscientiousness were in keeping with previous studies (Campion et al., 1993; Hofmann & Jones, 2005; Hofmann & Stetzer, 1996, 1998; Kozlowski & Hulst, 1987),

it should be noted that ICC values for the two dimensions were less than optimal. According to James (1982), both a small amount of between-unit variance and a large amount of within-unit variance can lead to low ICC values. Given that the organizations in this study all came from the same parent company, it is likely that the low ICC values may result from attenuated between-organization variance. In addition, ICC(2) values are determined by ICC(1) values and unit size (Bliese, 1998). Thus, it is likely that the relatively low ICC(2) values may be due to the small average number of participants per organization (7.30) in this study. Given the significant ANOVA results and high $r_{wg(j)}$ values for achievement orientation and conscientiousness, we concluded that all these results suggest that there was enough within-organization agreement to warrant aggregation and there were significant between-organization differences in the two dimensions. It should be noted that the relatively low reliable means of organizational-level Work Styles dimensions are likely to attenuate the correlations between organizational-level variables (Bliese, 1998), in this study organizational culture and organizational-level Work Styles dimensions, as at the individual level unreliability will attenuate correlations between individual-level variables. In this vein, the tests of Hypotheses 3 and 4, concerning the relationship between organizational culture and organizational-level Work Styles dimensions, would be a conservative examination due to the possible attenuation (Hofmann & Jones, 2005).

We further performed CFAs at the organizational level (e.g., $N = 37$) on the two-dimensional construct of organizational-level work-related personality requirements. The two-dimensional model showed acceptable fit to the data ($\chi^2 = 9.10$, $df = 8$, $RMSEA = .062$, $CFI = .992$, $TLI = .986$, $GFI = .992$ and $IFI = .993$), and better than the one-factor model ($\chi^2 = 18.85$, $df = 9$, $RMSEA = .174$, $CFI = .932$, $TLI = .886$, $GFI = .859$ and $IFI = .934$, $\Delta\chi^2 = 9.75$, $\Delta df = 1$, $p < .01$). The internal consistency reliability of the two organizational-level dimensions was .87 for achievement orientation and .84 for conscientiousness.

2.2.3. Control variables

Demographic variables, such as gender, age, education level and job tenure, have been found to be significantly related to job analysis ratings in previous studies (e.g., Landy & Vasey, 1991; Schmitt & Cohen, 1989; Tross & Maurer, 2000). Thus, we collected these variables on the participants and used them as control variables. Age and job tenure were actual age and job tenure of the participants. Gender and education level were coded as follows: gender (1 for males and 2 for females) and education level (with eight levels, ranging from 1 'less than a high school diploma' to 6 'more than master's degree'). Of these individual demographic variables,

only the ones significantly correlated with Work Styles dimensions (e.g., gender and age) were included in the substantive analyses (Becker, 2005).

2.2.4. Controlling for common method variance

All variables used in this study were based on job incumbents' self-ratings, and so one might argue that common method variance may influence the study results. We adopted two ways to deal with this potential problem in the survey design. First, the personality requirement instrument and the organizational culture inventory were placed in different sections of the survey questionnaire, with other questions (e.g., job attitudes) placed in between. In addition, we used different scales (e.g., a five-point Likert scale from 1 'not important' to 5 'extremely important' for the Work Styles instrument and a seven-point scale ranging from 1 'very little extent' to 7 'very great extent' for the organizational culture inventory) in the two inventories, to avoid respondents' consistency bias in ratings. These endeavors generated psychological separation between personality requirement ratings and organizational culture (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) and reduced the likelihood of common method problems.

3. Results

3.1. Scale validation

We performed a series of CFAs on all items of the organizational culture and Work Styles instruments at the individual level simultaneously, to further examine the discriminant validity of the constructs in this study. We compared the fit of the hypothesized eight-factor model (four organizational culture dimensions and four Work Styles dimensions) with three alternative models. Items in the corresponding pairs of organizational culture and Work Styles dimensions were similar in content, and so we constructed a four-factor model by merging items in the four corresponding pairs to test whether participants discriminated them as separate constructs as organizational culture and personality requirements. In addition, a two-factor model was constructed by combining all the organizational culture items and all the Work Styles items separately. Finally, we constructed a one-factor model with all items restricted to load on one factor. Results revealed that the eight-factor model fit data better than the four-factor model ($\Delta\chi^2 = 1857.19$, $\Delta df = 22$, $p < .01$), the two-factor model ($\Delta\chi^2 = 1026.28$, $\Delta df = 27$, $p < .01$) and the one-factor model ($\Delta\chi^2 = 2349.50$, $\Delta df = 28$, $p < .001$), with acceptable fit indices (for the eight-factor model, $\chi^2 = 381.29$, $df = 224$, $RMSEA = .051$, $CFI = .966$, $TLI = .959$, $GFI = .900$ and $IFI = .967$; for

the four-factor model, $\chi^2 = 2175.48$, $df = 246$, $RMSEA = .171$, $CFI = .588$, $TLI = .538$, $GFI = .446$ and $IFI = .591$; for the two-factor model, $\chi^2 = 1344.57$, $df = 251$, $RMSEA = .127$, $CFI = .766$, $TLI = .743$, $GFI = .695$ and $IFI = .768$; and for the one-factor model, $\chi^2 = 2667.79$, $df = 252$, $RMSEA = .189$, $CFI = .484$, $TLI = .435$, $GFI = .402$ and $IFI = .487$). These results indicate the good discriminant validity of the organizational culture and Work Styles instruments used in this study.

3.2. Tests of hypotheses

Tables 1 and 2 present the means, standard deviations (SDs) and intercorrelation of variables in this study at the individual level and at the organizational level. It should be noted that as indicated by Ostroff (1993), it is common that correlations among aggregated measures are often higher than those among individual-level variables. In addition, the correlations among aggregate measures, as well as those among individual-level variables in this study were similar in magnitude to correlations reported in previous studies using similar inventories of organizational culture and Work Styles (Ostroff *et al.*, 2005; Shin, Morgeson, & Campion, 2007).

Hypothesis 1 concerned between-organization differences in individual-level work-related personality requirement ratings. The results of ANOVA in 'Method' provided evidence that significant between-organization differences existed for two of the four dimensions of individual-level work-related personality requirements, namely achievement orientation and conscientiousness, while not on the other two dimensions: creative orientation and interpersonal orientation. Thus, Hypothesis 1 received partial support.

Hypothesis 2 examined within-organization agreement in individual-level work-related personality requirement ratings. Results of $r_{wg(j)}$ values, ICC(1) and ICC(2), in 'Method' demonstrated that only sufficient agreement emerged on achievement orientation and

conscientiousness. Thus, Hypothesis 2 was partially supported.

Hypothesis 3 focused on correlations between the corresponding pairs of dimensions of organizational culture and work style ratings at both individual and organizational levels. We used hierarchical linear modeling (HLM) to test the cross-level correlations, because this approach is appropriate to address the issue of lack of independence in the case of individuals nested within organizations (Bryk & Raudenbush, 1992; Hofmann, 1997; Hofmann, Griffin, & Gavin, 2000). In the context of the present study, HLM was adopted to partition variance in the individual-level work-related personality requirement ratings into two parts, organizational-level variance (τ_{00}) and individual-level variance (σ^2), thus allowing us to explore the role of organizational culture in accounting for the organizational-level variance by entering organizational culture dimensions into HLM models.

Following Mathieu and Taylor (2007) and Ployhart *et al.* (2006), we standardized individual-level variables across all the 270 participants and organizational-level variables across the 37 organizations to obtain a mean of 0 and a SD of 1, which provided a convenient interpretation of effect size in SD units. Table 3 displays the results.

As shown in Table 3, after controlling for gender and age, there were significant between-organization differences in the individual-level achievement orientation ratings (Model 1: between-organization variance $\tau_{00} = .08$, $p < .01$, and within-organization variance $\sigma^2 = .90$) and conscientiousness ratings (Model 5: $\tau_{00} = .06$, $p < .05$ and $\sigma^2 = .94$). As hypothesized, after controlling for respondents' gender and age, achievement-oriented culture had a significant effect on individual-level achievement orientation (Model 2: $\beta = .30$, $SE = .07$, $p < .001$, H3a) and integrity-oriented culture exerted a significant influence on individual-level conscientiousness (Model 6: $\beta = .28$, $SE = .06$, $p < .001$, H3c).

Concerning organizational-level correlations between organizational culture and the Work Styles

Table 1. Descriptive statistics and correlations for study variables, individual level and cross level

Variable	M	SD	1	2	3	4	5	6	7	8
1. Achievement orientation, individual level	3.95	.72	(.81)							
2. Interpersonal orientation, individual level	4.00	.74	.61***	(.83)						
3. Creative orientation, individual level	3.87	.75	.71***	.67***	(.87)					
4. Conscientiousness, individual level	4.08	.73	.66***	.72***	.77***	(.84)				
5. Achievement-oriented culture	5.57	1.11	.30*** ^a	.25*** ^a	.29*** ^a	.28*** ^a	(.88)			
6. Team-oriented culture	5.32	1.16	.32*** ^a	.26*** ^a	.30*** ^a	.30*** ^a	.54***	(.88)		
7. Creativity-oriented culture	4.62	1.21	.17 ^a	.09 ^a	.11 ^a	.09 ^a	.53***	.57***	(.80)	
8. Integrity-oriented culture	5.86	1.16	.31*** ^a	.23*** ^a	.27*** ^a	.28*** ^a	.72***	.59***	.50***	(.91)

Note: ^aCorrelations between individual- and organizational-level variables, based on results computed using HLM, 270 individuals and 37 organizations; all the other correlations are at the individual level. *** $p < .01$; ** $p < .001$; $N = 270$ individuals. Bold values on the diagonal are individual-level internal consistency reliability estimates. HLM, hierarchical linear modeling.

Table 2. Descriptive statistics and correlations for study variables, organizational level

Variable	M	SD	1	2	3	4	5	6
1. Achievement orientation, organizational level	3.96	.39	(.87)					
2. Conscientiousness, organizational level	4.10	.37	.77**	(.84)				
3. Achievement-oriented culture	5.55	.66	.58**	.58**	(.91)			
4. Team-oriented culture	5.35	.69	.66**	.65**	.77**	(.95)		
5. Creativity-oriented culture	4.61	.76	.44**	.30	.68**	.68**	(.91)	
6. Integrity-oriented culture	5.90	.66	.65**	.60**	.80**	.81**	.70**	(.97)

Note: ** $p < .01$; $N = 37$ organizations. Bold values on the diagonal are organizational-level internal consistency reliability estimates.

Table 3. HLM results for testing the influence of organizational culture on individual-level work-related personality requirement ratings: comparing the effects of team-oriented culture and other culture dimensions

Independent variable	Dependent variable							
	Achievement orientation				Conscientiousness			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Individual level variables								
Gender	-.28(.10)** ^a	-.28(.10)**	-.25(.10)**	-.26(.10)**	-.10(.10)	-.11(.11)	-.07(.11)	-.08(.11)
Age	.06(.03)*	.05(.02)*	.05(.02)*	.05(.02)*	.03(.03)	.02(.02)	.03(.03)	.03(.03)
Organizational culture								
Team-oriented culture		–	.30(.07)***	.21(.13) ⁺		–	.29(.07)***	.21(.13) ⁺
Achievement-oriented culture		.30(.07)***	–	.13(.13)		–	–	–
Integrity-oriented culture		–	–	–		.28(.06)***	–	.10(.11)
τ_{00}	.08**	.04	.03	.03	.06*	.03	.02	.02
σ^2	.90	.89	.89	.89	.94	.93	.93	.893
χ^2	60.62**	45.34	42.76	41.65	54.42*	40.81	37.99	37.25

Note: $N = 270$ individuals, 37 organizations, ⁺ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$. ^aThe first value is the parameter estimate and the value within parenthesis is the standard error. HLM, hierarchical linear modeling.

dimensions, correlations in Table 2 show that achievement-oriented culture was significantly associated with organizational-level achievement orientation ($r = .58$, $p < .01$, H3a) and integrity-oriented culture was significantly related to conscientiousness ($r = .60$, $p < .01$, H3c). Thus, Hypothesis 3 also received partial support.

The relationship between team-oriented culture and personality requirement ratings at both individual and organizational levels was the focus of Hypothesis 4. The results in Table 3 revealed that team-oriented culture significantly impacted achievement orientation (Model 3: $\beta = .30$, $SE = .07$, $p < .001$) and conscientiousness (Model 7: $\beta = .29$, $SE = .07$, $p < .001$) at the individual level. At the organizational level, the correlations in Table 2 illustrate that team-oriented culture was also significantly associated with achievement orientation ($r = .66$, $p < .01$) and conscientiousness ($r = .65$, $p < .01$). Thus, Hypothesis 4 was also partially supported.

Next we performed a series of analyses to identify the relative contribution of team-oriented culture and achievement-oriented culture in accounting for differences in achievement orientation ratings at individual and organization levels, and the relative contribution of team-oriented culture and integrity-oriented culture in explaining differences in conscientiousness ratings. At

the individual level, we entered both team-oriented culture and achievement-oriented culture together into HLM models as predictors of between-organization variance in achievement orientation ratings. Results (Model 4 in Table 3) suggest that team-oriented culture had influence approaching significance ($p < .10$), while achievement-oriented culture had no significant effect, on individual ratings of achievement orientation. Similar analyses were performed on individual-level conscientiousness ratings and we obtained similar results (Model 8 in Table 3): team-oriented culture had only a marginal significant influence ($p < .10$), while integrity-oriented culture had no significant effect, on conscientiousness ratings. Although the marginally significant results for the impacts of team-oriented culture on individual ratings of achievement orientation and conscientiousness were not strong evidence, Hypothesis 4, which predicted that team-oriented culture would account for variance in all personality requirements, accounted for the data slightly better than Hypothesis 3 at the individual level (emphasizing relationships between each dimension of organizational culture and its corresponding dimension of personality requirements).

At the organizational level, we performed regression analyses on achievement orientation by entering team-oriented culture and achievement-oriented culture

together as a block to determine their unique contributions in predicting organizational-level achievement orientation. The results showed that only team-oriented culture significantly influenced organizational-level achievement orientation ($\beta = .52$, $p < .05$, $R^2 = .45$, adjust $R^2 = .42$, $F = 13.86$), while achievement-oriented culture did not have a significant effect on this dimension ($\beta = .18$, $p > .10$). Similar analyses were also conducted on conscientiousness and we obtained similar results: only team-oriented culture significantly influenced organizational-level conscientiousness ($\beta = .48$, $p < .05$, $R^2 = .44$, adjust $R^2 = .40$, $F = 13.08$), while integrity-oriented culture did not have any significant effect on it ($\beta = .21$, $p > .10$). Consequently, Hypothesis 4 accounted for the organizational-level data better than Hypothesis 3. Taken together, the pattern of the results seems to indicate that Hypothesis 4 worked better than Hypothesis 3 at both individual and organizational levels.

3.3. Supplemental analysis

Despite our efforts to control for the possibility of common method variance in the survey design, it could still be argued that this problem might have inflated relationships among the variables in this study. We are doubtful that common method variance was a serious concern, however, for several reasons. First, the assumption that common method variance is a serious threat in cross-sectional research has been the subject of substantial recent debate (Spector, 2006). In the present study, individuals' ratings of organizational culture items made only a small contribution to the scores used for each organization on organizational culture dimensions, casting doubt on a common method variance explanation for the relationships observed between these measures and other variables (e.g., the cross-level correlation between organizational culture and individual-level Work Styles dimensions). Furthermore, the results of CFAs using all items of the organizational culture and Work Styles instruments at the individual level showed that after combining the four pairs of corresponding dimensions of organizational culture and Work Styles, the model did not fit the data well. These results indicate that although the contents of the corresponding dimensions of organizational culture and Work Styles appear to be similar, they are actually distinct from each other. Finally, both cross-level analyses and organizational-level analyses indicated that team-oriented culture seemed to play the most significant role in accounting for the correlation between organizational culture and achievement orientation and conscientiousness requirements; therefore, it is unlikely that common method variance would have influenced the results in such a systematic way.

Finally, we performed an additional analysis to confirm that the relationship found between dimensions of organizational culture and work-related personality requirements in the cross-level analyses remained when each individual's organizational culture scores were removed. Specifically, we conducted individual-level correlation analyses among dimensions of organizational culture and dimensions of individual-level work style ratings, by assigning every individual the average scores of organizational culture with this individual's score removed from the organization he or she belonged to as the score of organizational culture. In this way, individuals' scores of organizational culture and work style ratings were from different sources (the former from the colleagues in their organization and the latter from themselves). If there were still significant correlations between individual's work style ratings and organizational culture dimensions with the individual's score removed, the presence of common method bias could be ruled out. The results showed that significant associations held between achievement-oriented culture and achievement orientation, integrity-oriented culture and conscientiousness, and team-oriented culture and achievement orientation and conscientiousness, indicating that common method variance was not a serious problem affecting cross-level correlations. Taken together, these results indicate that common method variance is unlikely to pose a serious problem in this study.

4. Discussion

This study investigated the influence of organizational culture on work-related personality requirement ratings at both individual and organizational levels. Moreover, the study served as a response to the call on investigating sources of within-job variance in job analysis ratings from a more theoretical perspective (Harvey, 1991; Sanchez & Levine, 2001), using data from a large number of organizations (Van Iddekinge *et al.*, 2005). The findings of the study have important implications for job analysis studies and HR practices.

First, incumbents' ratings on two dimensions of work-related personality requirements (achievement orientation and conscientiousness) varied significantly across organizations. This finding is consistent with the results from the study conducted by Ployhart *et al.* (2000), who found that managers of the same job engaged in different tasks in different organizations. Coupled with the results of Ployhart *et al.*'s (2000) study, the findings of the current study indicate that incumbents of the same job in different organizations may have different job tasks and therefore need different work-related personality requirements to perform these tasks. Further, these studies suggest that

incumbents' job analysis ratings for the same job can vary between organizations; therefore, such differences should be taken into account in job analysis research and application (e.g., job analysis information collected from multiple organizations, such as *Dictionary of Occupational Titles* and O*NET, should be applied to jobs within an organization cautiously).

Furthermore, the results of this study appear to suggest that the more organizations value achievement, the higher their employees rate the importance of achievement orientation to the job. Similarly, the more organizations value integrity, the higher their employees rate the importance of conscientiousness requirements to their job. However, the results seem more congruent with cooperation and competition theory (Deutsch, 1949, 1973, 1990) in a way that the more organizations emphasize cooperation, being supportive and teamwork, the more their employees perceive achievement orientation and conscientiousness as important to their job performance. Cooperation and competition theory (Deutsch, 1949, 1973, 1990) suggests, and empirical studies have also supported, that in cooperation, compared with competition, situations people are more likely to help each other (De Dreu, 2007; Johnson & Johnson, 1989), encourage other to achieve more (Johnson & Johnson, 1989) and discuss different ideas open-mindedly (Alper et al., 1998; Tjosvold, 1990, 1997; Tjosvold et al., 2005, 1998) for their mutual benefit. Consequently, there is a tendency for them to trust and be trusted by each other (Tjosvold, 1999), have a good interpersonal relationship and are motivated to achieve high productivity (Johnson et al., 1981; Stanne et al., 1999), have novel ideas and implement these ideas persistently (Chen et al., 2005; Tjosvold et al., 2004; Wong, Tjosvold & Liu, in press). In other words, in order to make employees perceive achievement orientation and conscientiousness as essential to their job performance, creating a supportive and team-oriented culture appears to be more important than merely valuing achievement or integrity. Future research can explore more on this issue.

Taken together, these results indicate that organizational culture plays an important role in between-organization differences in incumbents' job analysis ratings and that employees are likely to internalize what their organizations value and regard them as their job requirements. These findings are consistent with organizational culture theory that organizational cultures are guidelines for employees' behaviors as a form of social control (O'Reilly & Chatman, 1996) and also in congruence with ASA theory (Schneider, 1987; Schneider et al., 1995), which suggests that there is a tendency for members in organizations to have similar characteristics in the long run due to organizational characteristics (such as process, goals and values). In this vein,

this study provides a theoretical explanation on why significant between-organization differences emerged in incumbents' job analysis ratings. Coupled with previous studies on exploring the influence of job performance, for example, on within-job differences in job analysis ratings (e.g., Borman et al., 1992; Lindell et al., 1998; Sanchez et al., 1998), the findings of this study suggest that, within-job variance in job analysis rating may be meaningful (Borman et al., 1992; Harvey, 1991; Morgeson & Campion, 2003; Sanchez & Levine, 2001), not merely bias or error as explored in other studies (Morgeson & Campion, 1997; Morgeson et al., 2004; Van Iddekinge et al., 2005). Future studies on job analysis should take into account organizational culture when using job information collected in different organizations.

Third, the findings of this study demonstrated that there existed within-organization agreement and significant between-organization differences in incumbents' ratings on achievement orientation and conscientiousness requirements, indicating that these work-related personality requirements may be organizational-level constructs. This result is consistent with practices of competency modeling, mainly focusing on KSAOs shared within an organization (Ployhart & Schneider, 2002; Sanchez & Levine, 2001; Shippmann et al., 2000). Recently, researchers have suggested that job analysis should be conducted at different levels (e.g., Ostroff, 2002; Ployhart, 2006; Ployhart & Schneider, 2002; Schmitt, 2002). Schmitt (2002) further forwarded specific examples regarding how to ask questions to generate group tasks and KSAOs. It should be noted that Schmitt (2002) proposed using team as the reference in sentence wording (e.g., asking team members to rate the importance, for example, of certain KSAOs to the team), and then one can simply aggregate the ratings from team members regarding what KSAOs are required for the team as the team-level KSAO requirements. While in our study, we aggregated individual-level job requirements from individual incumbents of a certain job, to generate the organization-level constructs (e.g., ask job incumbents to rate the importance of achievement orientation to their job performance and then use the aggregated individual ratings as organizational-level constructs). In other words, we adopted the direct-consensus model (Chan, 1998) by aggregating individual incumbents' ratings of KSAOs important to their job, and Schmitt (2002) forwarded a 'reference-shift consensus' model (Chan, 1998) by aggregating team members' ratings of KSAOs important to their team. As noted by Kozlowski and Klein (2000), researchers should 'employ measures consistent with the conceptualization of the construct' (p. 38). We believe our approach is in keeping with this suggestion, while noting that researchers can also adopt other approaches (e.g., a 'reference-shift consensus' model)

in future studies. It is similar to the case in collective personality, in which many researchers use individual personality to form a higher level collective personality (see Stewart, 2003), while Hofmann and Jones (2005) recently adopted the 'reference-shift consensus' model (Chan, 1998), using organization as a reference.

Although the results showed that organizational culture played an essential role in influencing individuals' perceptions of work-related personality requirement and in the emergence of organizational-level work-related personality requirements, causal relationships should be inferred with caution. It is likely that organizational culture influences work-related personality requirements at both individual and organizational levels, as argued in this study. But the ASA theory (Schneider, 1987; Schneider *et al.*, 1995) suggests that people can also make the place. Specifically, through the processes of attraction, selection and attrition, employees in one organization with similar characteristics (e.g., similar perceptions toward their job requirements) may determine the strength of organizational culture. Another possible account is that other variables, for instance leadership, may influence both organizational culture and the characteristics of employees in one organization. Schein (1992) and Schneider (1987) have postulated that the founder or CEO of one organization can very much affect the type and strength of organizational culture that organization has, while on the other hand, the characteristics of the founder or CEO impact what kind of employees an organization has, resulting in leader-follower congruence, as found in the study by Giberson, Resick, and Dickson (2005). Clearly, more studies can be conducted to better capture the causal relationship.

It is noteworthy that there were no significant between-organization differences in incumbents' ratings on creative orientation and interpersonal orientation work-related personality requirements. We suspect that the non-significant between-organization difference in interpersonal orientation may be due to the influence of the culture of China. China is regarded as a traditional collectivist country strongly valuing social relationships (Aycan, 2000; Hofstede, 1992; Hofstede & Peterson, 2000; House, Hanges, Javidan, Dorfman, & Gupta, 2004; Triandis, 2002), and so it is likely that the influence of culture attenuates the effect of organizational culture on employees' perceptions of interpersonal orientation requirements. Concerning creative orientation, an inspection of the means and SDs of the four dimensions of work-related personality requirements at the individual level revealed that it had the smallest mean (3.87) and the largest SD (.75). In addition, the median $r_{wg(j)}$ value of creative orientation (.84) was the lowest among the four dimensions of personality requirements. Collectively, all the results suggest that job incumbents across all the 37 organiza-

tions rated creative orientation as less important compared with the other three dimensions, while the agreement of their ratings was low. This may be one reason why there were no significant between-organization differences in creative orientation.

4.1. Limitations

The study has four limitations that should be considered when interpreting these findings. The first limitation concerns our having used cross-sectional data from the same source. Although common method variance may not be a serious problem as discussed before, it might be possible that organizational-level correlations between organizational culture and organizational-level work-related personality requirements may be inflated. Ostroff, Kinicki, and Clark (2002) have suggested using split-half samples in multilevel studies but clearly such a strategy was not appropriate in this study due to the small number of participants performing the same job in each organization. Second, the participants of the present study came from China, a traditional collectivist country (Aycan, 2000; Hofstede, 1992; Hofstede & Peterson, 2000; House *et al.*, 2004; Triandis, 2002). This may limit the generalizability of the results of the study to other countries with different cultures. Third, all the participants of this study were from the same parent company, which might attenuate the between-organization differences in organizational culture and individual-level work-related personality requirement ratings, as well as the emergence of organizational-level work-related personality requirements. Future studies can sample participants from a larger range of organizational context. Finally, we did not include other individual-level variables (besides demographic variables) that may also influence within-job variance in job analysis ratings, such as job performance. It is possible that the significant correlation between job performance and job analysis ratings as found in previous studies (Borman *et al.*, 1992; Sanchez *et al.*, 1998) would hold even with organizational culture controlled for.

4.2. Practical implications

One implication of our findings pertains to the transportability of work-related personality requirements across organizations. We found significant relationships between dimensions of organization culture and incumbents' ratings of work-related personality requirements, suggesting that practitioners should take into account the organizational context when using work-related personality requirements of the same job from one organization to another and carefully tailor these work-related personality requirements according to the cultures of the targeted organizations. Similarly, an

organizations' culture should be taken into account when applying generic job information, such as the O*NET online database. From a broader perspective, traditional job analysis should be aligned with the analysis of organizational characteristics (e.g., goals, strategy and culture), as what competency modeling does (Ployhart & Schneider, 2002; Sanchez, 2000; Sanchez & Levine, 2001; Shippmann et al., 2000). The integration of job analysis, competency modeling (e.g., Lievens, Sanchez, & De Corte, 2004; Shippmann et al., 2000) and needs analysis (usually focus on organizational characteristics like goals and objectives, Ployhart & Schneider, 2002) would be some good options.

The results of this study also have implications for large organizations with many small subsidiaries (e.g., franchised companies with small organizations located in different places and operating independently). The results suggest that different subsidiaries of a parent company may have different perceptions of their organizational culture and work-related personality requirements. Therefore, managers in the parent company should be aware of these differences when making HRM-related decisions and management policies.

Finally, the results of the present study provide support to the contention that organizational culture can influence individual employees' perceptions of work-related personality requirements as important for their jobs. Therefore, when implementing organizational goals or strategies, practitioners may develop a relevant type of organizational culture (e.g., supportive and team-oriented culture in this study) that may thereby affect employees' perceptions of their job requirements.

5. Conclusions

The changing nature of work (e.g., the increasing use of teams, the expanded job roles) has brought great challenges to traditional job analysis (Sackett & Laczko, 2003; Sanchez & Levine, 2001; Wright & Boswell, 2002). The results of this study suggest that incumbents holding the same job in different organizations have distinct perceptions of their specific job requirements and these different perceptions are influenced by their organizational culture. Researchers and practitioners should take into account organizational characteristics when conducting job analysis and using job information outside their organizations.

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Notes

1. We note here that the conscientiousness factor in the Work Styles inventory is developed differently (Borman et al., 1999), although labeled identically, from the conscientiousness construct in the Five Factor Model of personality (FFM, Costa & McCrae, 1995): achievement-associated content is taken as a separate dimension (achievement orientation) in the Work Styles inventory and so it is excluded in the conscientiousness dimension in the instrument, which renders it more similar to the dependability or the dutifulness construct (Borman et al., 1999) rather than the conscientiousness construct in FFM (including six facets: competence, order, dutifulness, achievement striving, self-discipline and deliberation). We thank the anonymous reviewer for pointing this out.
2. One might argue that the similarity between corresponding dimensions of organizational culture and work-related personality requirements would result in inflated relationships between the two. However, we note here that the ratings of organizational culture and work-related personality requirements are of different targets. For organizational culture, the target is the organization an employee belongs to; for the personality requirements, the target is the job an employee hold and he/she is asked to rate how important one certain personality trait is for his/her job performance.
3. In the FFM of personality, the conscientiousness construct encompasses both achievement-related contents and dutifulness (Costa & McCrae, 1995).

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