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They were Framed! The Development and Validation of Context-Specific Measures of Individual Culture

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THEY WERE FRAMED! THE DEVELOPMENT AND VALIDATION
OF CONTEXT-SPECIFIC MEASURES OF
INDIVIDUAL CULTURE

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Industrial-Organizational Psychology

by
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May 2012

Accepted by:
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ABSTRACT

Early personality research often described behavior in terms of individual dispositions or stable behavioral tendencies (Allport, 1937; Cattell, 1957; Guilford, 1959), thus taking a context-independent view of personality. However, a recent review of thousands of empirical studies illustrated that even seemingly superficial changes to contextual variables can have a large impact on study results (Richard, Bond, & Stokes-Zoota, 2003). Yet, the use of non-contextualized measures of individual culture still remains the norm in cross-cultural research. Thus, utilizing a sample of more than 1,000 participants across two studies, work and nonwork measures of two cultural variables (i.e., individualism and collectivism) were developed using a frame-of-reference approach (Wright & Mischel, 1987). In Study 1, items were selected based on an examination of the psychometric properties of each scale, and in Study 2, the newly developed scales were cross-validated, and construct validity evidence was presented. Many of the cross-domain correlations for these contextualized measures were small to moderate, thereby providing support for the contextual dependence of these constructs. As frame-of-reference effects have rarely been considered in the measurement of cultural variables, this work adds incrementally to the extant literature. As such, study implications and future research directions are discussed.

DEDICATION

A key concept in the field of statistics is that a correlation does not imply causation. However, in looking back at how I was able to reach this point in my life, I am certain that my grandma had a causal influence. I have been extremely fortunate to have many individuals in my life who have encouraged me to work hard, persevere, and never give up on my goals, and for that I am forever grateful. Yet, it was through my grandma's example of unwavering strength that I gained an appreciation for what these ideas meant. Being diagnosed with an incurable illness is a heavy burden for anyone to bear, but for my grandma, being a victim, particularly of her own body, was not something she was willing to accept. Instead, she chose to take command of her own life, never allowing her disease to overpower her. Whereas my grandma was not victorious in her fight with Parkinson's disease, she was a champion of her own life, and I only hope that someday I will be able to possess even a small fraction of the amount of courage, determination, and ambition that she demonstrated every day of her life.

Therefore, both this project and this great achievement in my life are befittingly dedicated to my grandma. It breaks my heart that she cannot be here to share in the joy of these accomplishments, but I will find comfort in knowing that she lives on through the impact she had on my life and that of everyone around her.

ACKNOWLEDGMENTS

This project would not have been possible without the constant support of my advisor, Dr. Patrick Rosopa. Your expertise greatly contributed not only to the quality of this project, but also to my success as a graduate student. I cannot envision a better mentor, as your guidance and advice have been invaluable. It is a rare person who continuously puts the needs of others first, but not surprisingly, your commitment to your students was never more apparent than when you were present at my dissertation defense mere hours after losing your home to an apartment fire. Thank you for everything that you have done for me during my time as a student at Clemson, and I hope that I am able to live up to the example you set for me.

I would be remiss if I did not also thank Dr. DeWayne Moore for his statistical advice throughout this and other research projects. I will be interested to see what you will do with all of your free time since it will no longer be occupied by my frequent visits to discuss statistical issues.

I would also like to thank Dr. Pat Raymark and Dr. Mary Anne Taylor for their insightful comments and suggestions on this project, as well as their continual encouragement throughout my graduate school career.

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CHAPTER ONE

INTRODUCTION

The nature of today's business world is one in which globalization and multinationalism have become the norm, with some characterizing the business economy as a "global village" (Ger, 1999) or a "flat world" (Friedman, 2005). Therefore, it is not surprising that culture, which has been defined as "the collective programming of the mind which distinguishes the members of one group or category of people from another" (Hofstede, 1991, p. 5), is generally believed to play an influential role in decision-making (Aycan & Kanungo, 2001; Charles, Buchmann, Halebsky, Powers, & Smith, 2001; Kirkman, Lowe, & Gibson, 2006) through its influence on cognition, emotion, and motivation (Markus & Kitayama, 1991). As methodological issues continue to be a concern in cross-cultural research (Guthrie, 1977; Saeed & Athanassiou, 1998; Schaffer & Riordan, 2003), further psychometric development of cultural measures is warranted. More specifically, as research has demonstrated a context-dependency effect in measures of culture and personality (Hunthausen, Truxillo, Bauer, & Hammer, 2003; Schmit, Ryan, Stierwalt, & Powell, 1995; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988), the purpose of the current paper is to develop and validate measures of two cultural variables (i.e., individualism and collectivism) specific to both one's work and one's personal life using a frame-of-reference approach (Wright & Mischel, 1987).

This paper will be structured such that a review of cultural research will be presented, followed by a description of extant literature on context dependency. Then, in an effort to develop and validate cultural assessment tools relevant to work and nonwork

contexts, two studies will be conducted in order to develop context-specific measures of individualism and collectivism (Study 1) and examine the construct validity of the newly developed measures (Study 2).

Culture

As mentioned above, the methodological soundness of some cultural research has been questioned. Thus, the current paper will first address some of the common methodological issues in this field of research, followed by a description of Hofstede's (1980a) five-facet model of culture, which is one of the most commonly used frameworks in cultural research (Hofstede, 2001; Kirkman, Lowe, & Gibson, 2006).

Cross-Cultural Research Design

In conducting cross-cultural research, Schaffer and Riordan (2003) contend that researchers must determine (a) the perspective of the research (i.e., emic versus etic), as well as (b) the level of analysis. In regard to the former, emic approaches involve a within-culture analysis in order to gain a better understanding of cultural variation within one particular group; etic approaches, on the other hand, focus on a comparative inter-culture analysis to examine potential cross-cultural variations (Gudykunst, 1997). Echoing Guthrie's (1977) concern that a large amount of cross-cultural research contains materials that are not meaningful to study participants, Schaffer and Riordan (2003) found that in the more than 200 recent cross-cultural studies published in top academic management and cross-cultural journals, only six percent took an emic approach. To ensure the appropriateness of a comparative (or etic) analysis, the authors suggest that researchers take an integrative emic-etic approach by defining the emic dimensions for

each culture of interest before assessing etic similarities to ensure concept equivalence across groups. As an example of such an approach, Triandis, Vassiliou, and Nassiakou (1968) found the meanings of *ingroup* and *outgroup* varied between individuals in the United States and Greece. Namely, Greeks did not include fellow Greek citizens in their ingroups, whereas Americans did. Thus, this study took an emic approach by defining concepts within each culture so that conclusions could be drawn regarding the external validity of research using these concepts (i.e., the appropriateness of an etic approach).

As to Schaffer and Riordan's (2003) second recommendation regarding the operationalization of culture, the researchers found that of their aforementioned sample of more than 200 recent cross-cultural studies, 79% used country of residence as a proxy for the measurement of culture. However, as noted by Ryan, McFarland, Baron, and Page (1999), country-level analyses of culture do not take subcultural variations into account, and as countries have been shown to differ in their degree of homogeneity (Peterson & Smith, 1997), country and culture may not always be interchangeable terms. Further supporting this view, Samiee and Jeong (1994) demonstrated that there are circumstances where cultural variation is greater within one country than in cross-national comparisons. Thus, Schaffer and Riordan (2003) advocate both the avoidance of the use of country as a measure of culture, as well as the integration of cultural variables into a priori hypotheses. For example, instead of taking an etic approach in examining how two countries differ on an outcome of interest, the authors argue that a superior method would be to form a priori hypotheses regarding how an outcome may differ across groups with reference to various cultural attributes (e.g., loose versus tight cultures). As research

methodology is largely influenced by the nature of the study context and the variables involved, the next section will review five commonly studied cultural constructs.

Cultural Constructs

In the seminal work by Hofstede (1980a) in which data from 88,000 IBM employees in more than 40 countries were factor analyzed, four facets of culture emerged – individualism versus collectivism, power distance, uncertainty avoidance, and masculinity versus femininity. A fifth dimension – long-term versus short-term orientation (also known as Confucian dynamism) – was later added to this model by Hofstede and Bond (1988). Each of these five cultural dimensions is described below.

Individualism versus collectivism. In the fields of sociology and anthropology, it is commonly believed that the individual and the social context are inseparable (Etzioni, 1968). In psychology, the distinction between individualism and collectivism embraces this notion by defining individual culture by the nature of human interactions, or more specifically, how individuals relate to those around them (Earley & Gibson, 1998). Hofstede (1980b) defined individualism as “a loosely knit social framework in which people are supposed to take care of themselves and of their immediate families only”, whereas collectivism “is characterized by a tight social framework in which people distinguish between ingroups and outgroups, they expect their ingroup to look after them, and in exchange for that they feel they owe absolute loyalty to it” (p. 45). Triandis (1995) further elaborated on this distinction by describing individualists as people who perceive the self as being separate from others, emphasize personal ambitions, behave in accordance with individual opinions and values, and concentrate on outcomes, whereas

collectivists view the self as part of the collective, focus on group ambitions, perform behaviors consistent with social norms, and value quality interpersonal relationships. The diverging perceptions and behaviors of people with individualistic versus collectivistic values have been demonstrated by Triandis (2006), with collectivists being shown to emphasize context, whereas individualists more often stress content (Triandis, 2006).

Power distance. Hofstede (1980b) defined power distance as “the extent to which society accepts that power in institutions and organizations is distributed unequally” (p. 45). For example, in high power distance societies, power-laden behaviors such as verbal insults directed from a subordinate to a higher-level employee would be considered inappropriate, whereas such an act from a higher-ranking employee to his/her subordinate would be considered acceptable; neither behavior would be considered appropriate in low power distance cultures (Bond, Wan, Leung, & Giacalone, 1985). Consistent with this distinction, Lee, Pillutla, and Law (2000) found that the relations between fairness perceptions and outcomes such as trust in one’s supervisor and organizational contract fulfillment (i.e., perceptions of the organization meeting its commitments to its employees) were stronger for those with a low power distance cultural orientation, which indicates that those who are less accepting of a hierarchically tall organizational structure may have stronger behavioral responses to being treated fairly (or unfairly) at work.

Uncertainty avoidance. Uncertainty avoidance is a variable indexing the degree to which one is uncomfortable in or unaccepting of ambiguous or unfamiliar circumstances (Hofstede, 1980b). Research has indicated that uncertainty avoidance is related to formality of communications, with high uncertainty avoidance cultures

engaging in more formal, policy-consistent behaviors than less uncertainty avoidant societies (Sully de Luque & Javidan, 2004). Uncertainty avoidance has also been linked to innovation, with societies low on this cultural variable (i.e., those more tolerant of the unfamiliar) having a greater number of trademark approvals than those high on uncertainty avoidance (Shane, 1993).

Masculinity versus femininity. Hofstede (1980b) described the cultural dimension of masculinity as being descriptive of societies in which individuals are expected to demonstrate their power and strength and focus on tangible goods such as money, whereas feminine cultures are characterized by individuals who are more communal, modest, of a caring nature, and focused on quality of life. Masculinity has been linked to consumer innovativeness (Steenkamp, Hofstede, & Wedel, 1999), which is consistent with the attention on material items that is characteristic of such cultures (Hofstede, 1980b). In addition, research has demonstrated divergent conflict resolution approaches across cultures based on their degree of femininity, with greater femininity being linked to more conflict avoidant than confrontational behaviors (Leung, Bond, Carment, Krishnan, & Liebrand, 1990), which is also consistent with the defining characteristics of this construct.

Long-term versus short-term orientation. The fifth and most recently added dimension of Hofstede's cultural taxonomy was included in this model after it emerged in a cross-cultural study of 23 Asian countries (Chinese Culture Connection, 1987). This cultural construct is said to describe one's temporal outlook, with a long-term orientation being characteristic of future-looking individuals who value determination and thriftiness,

whereas a short-term orientation is descriptive of individuals with a stronger focus on the past and present who perceive tradition and meeting social responsibilities to be important (Hofstede & Bond, 1988). Consistent with this conceptualization, cultures with a long-term orientation have been shown to have greater economic growth (Hofstede & Bond, 1988; Franke, Hofstede, & Bond, 1991) and lower customer service quality expectations (Donthu & Yoo, 1998), both of which are likely due to a greater focus on the future.

Whereas other cultural variables such as autonomy, mastery, hierarchy, conservatism, harmony, and egalitarian commitment (Schwartz, 1994b) have also been posited to describe cultural differences, as the focus of this paper is to examine individualism and collectivism, a discussion of these variables is tangential to the current work. Rather, the next section describes the extant literature on context dependence in the personality and cultural research domains.

Context Dependence

Early personality research often described behavior in terms of individual dispositions or stable behavioral tendencies (Allport, 1937; Cattell, 1957; Guilford, 1959), thus taking a context-independent view of personality. In this type of research, the cross-situational consistency coefficient, or the average correlation of a trait across contexts, is often examined as an index of personality coherence (Bem & Allen, 1974; Mischel, 1968). However, problems cited with this approach include low cross-situational consistency coefficients (Mischel, 1968), as well as concerns over the circular logic in attributing that traits often derived from behaviors are predictive of behavior

(Bandura, 1969). Other dispositional personality theorists took an act-frequency approach to describing personality in which traits were defined as a summary of behaviors, which thereby illustrate behavioral tendencies (Hampshire, 1953). However, as noted by Brandt (1970), attributions of personality traits are often not descriptive of broad behavioral tendencies, but rather, they more regularly describe behavioral trends in specific contexts. Thus, many personality theorists have moved away from a straight dispositional view of personality, instead perceiving behavior to be a function of one's traits and the context at hand, an approach consistent with the cognitive-affective system theory of personality (Mischel & Shoda, 1995). According to cognitive-affective system theory, behavior is likely to be consistent only across situations that share similarities. Thus, in line with this model, one's personality disposition can be described as "the conditional probability of a certain behavior or category of behaviors given a certain condition or set of conditions has occurred" (Wright & Mischel, 1987, p. 1161). However, despite the generally accepted interactional view of personality, many measures of culture do not take situational specificity, or the tendency to behave differently according to the situation (Larsen & Buss, 2008) into account. Thus, in an effort to incorporate the context dependency literature into the measurement of culture, the current paper examines the impact of situational specificity on the measurement of two cultural constructs – i.e., individualism and collectivism.

Context Dependence in Personality Research

Personality has been used as a tool to predict human behavior in a number of contexts, such as in forecasting job performance (Barrick & Mount, 1991), verbal fluency

(Sutin et al., in press), driving behavior (Constantinou, Panayiotou, Konstantinou, Loutsiou-Ladd, & Kapardis, 2011), impulse control, and body weight management skills (Sutin, Ferrucci, Zonderman, & Terracciano, in press), to name a few. However, consistent with Wright and Mischel's (1987) supposition that personality is context-dependent, a recent review of thousands of empirical studies illustrated that even seemingly superficial changes to contextual variables can have a large impact on study results (Richard, Bond, & Stokes-Zoota, 2003). Nevertheless, two arguments can be made as to why context-specific measures might have lower criterion-related validity than general personality measures (Hunthausen, Truxillo, Bauer, & Hammer, 2003). First, some contexts may be classified as strong situations, or situations in which there is little variance in behavioral responses across individuals due to the strong social norms for the situation (Larsen & Buss, 2008). In such circumstances, the lack of variability would attenuate criterion-related validity coefficients. Second, providing contextual cues could increase socially desirable responding, which refers to respondents' attempts to answer items in a way that presents them in a positive light (Larsen & Buss, 2008), which could introduce additional measurement error, thereby reducing the magnitude of predictor-criterion relations.

Despite arguments against using context-specific personality measures, a number of studies have provided evidence for the advantages of the frame of reference approach (e.g., Bing, Whanger, Davison, & VanHook, 2004; Holtz, Ployhart, & Dominguez, 2005; Hunthausen, Truxillo, Bauer, & Hammer, 2003; Robie, Schmit, Ryan, & Zickar, 2000; Schmit, Ryan, Stierwalt, & Powell, 1995). For example, in a study examining how

providing context-specific items and instructions on a personality measure impacts the prediction of academic performance, Schmit et al. (1995) illustrated that higher validity coefficients were found when participants were given a frame of reference than when given non-contextual items and instructions. Hunthausen and colleagues (2003) not only demonstrated similar findings in a working sample, but they also elaborated on this work by showing that a personality measure that was given a frame of reference exhibited incremental validity over cognitive ability in predicting job performance, whereas a non-contextual personality measure did not.

Two theoretical bases have been put forward to describe the positive effect of context-specific personality measures on criterion-related validity. In the traditional view, it is posited that providing a context in personality measurement reduces between-person variability by ensuring that all respondents use the same frame of reference in formulating their responses (Holtz et al., 2005). Several techniques have been used to detect respondent subgroups on this basis, including grouping respondents based on personality traits (Asendorpf, Borkenau, Ostendorf, & van Aken, 2001; De Fruyt, 2002), style of responding (Rosse, Stecher, Miller, & Levin, 1998; Zickar, Gibby, & Robie, 2004), and response strategies (Gordon & Holden, 1998). A second explanation for this effect can be drawn from schema theory, which states that respondents use cognitive schemas to find relevant memories in order to respond to each survey item (Aronson & Reilly, 2006). As research has demonstrated that people are motivated to select memories that allow them to achieve their desired self-perception (Sanitioso, Kunda, & Fong, 1990), within-person variance (or inconsistent use of contextual references across items)

could attenuate predictor-criterion relations. Thus, in a study examining each of these explanations simultaneously, Lievens, De Corte, and Schollaert (2008) illustrated that the increase in criterion-related validity when context-specific personality measures are used is due to a reduction in both between- and within-subject variance, thus lending support to both theoretical explanations. In addition, the authors suggest that the low to moderate validity coefficients often found with non-contextualized personality measures may be due to increased measurement error as a result of the use of different frames of reference both within and across respondents. Thus, Lievens et al. (2008) encourage the use of personality measures with relevant contextual information.

Context Dependence in Cross-Cultural Research

As the expression of personality has been demonstrated to be contextually dependent, it seems likely that one's cultural orientation may also have situational specificity. In regard to the cultural constructs of individualism and collectivism, Kagitcibasi and Berry (1989) supported this position, stating that "the assumption that individualistic and collectivistic orientations have a situation-independent trait-like stability is dubious" (p. 517). Consistent with this position, research on these constructs has demonstrated that collectivistic individuals behave differently toward others depending on the nature of the relationship (Triandis et al., 1988). More specifically, their study findings suggest that collectivistic individuals exhibit behaviors very similar to individualists (e.g., showing less concern for others) when interacting with "out-group" members, or individuals perceived to be outside of a social group with which one identifies oneself. These findings are consistent with research by Hui (1984) in which

individuals were found to exhibit individualism-consistent behaviors in some contexts, but collectivism-consistent acts in others. Thus, as previous research has demonstrated that individualism and collectivism may be context-dependent, consistent with Ironson, Smith, Brannick, Gibson, and Paul's (1989) recommendation to match the specificity of a measure to the specificity of the criterion of interest, or as they state, "use a rifle to hit the center of a target... use a cannon to blast a large area" (p. 200), the purpose of Study 1 is to develop and examine the psychometric properties of various context-specific measures of individualism and collectivism.

The Development of Context-Specific Cultural Measures

Some researchers, such as Hofstede (1980a), have assessed individualism-collectivism at the cross-national level. Although some countries exhibit predominately collectivistic or individualistic characteristics, it has been demonstrated that substantial variation exists in the cultural values of a country's individuals (Oyserman, Coon, & Kemmelmeier, 2002). At the individual measurement level, this cultural difference is often described in terms of one's standing on two personality constructs known as idiocentrism and allocentrism, which reflect individual variations in one's degree of individualism and collectivism, respectively (Triandis et al., 1988). In addition, despite Hofstede's (1980a) conceptualization of individualism and collectivism (or idiocentrism and allocentrism, respectively) as existing on opposite poles, a recent meta-analysis suggests that they may be orthogonal (Oyserman et al., 2002). As a result, consistent with previous research (see e.g., Erdogan & Liden, 2006; Ng & Van Dyne, 2001; Wagner, 1995), in the current paper individualism and collectivism will be conceptualized as

unique constructs measured at the individual or psychological level rather than the country level. Whereas these constructs are sometimes referred to as idiocentrism and allocentrism when measured at the individual level, to be consistent with more commonly used terminology, the current paper will refer to these constructs as individualism and collectivism, respectively.

Measuring Individualism and Collectivism

Whereas research examining cultural differences in the nature of social interactions has traditionally examined the constructs of individualism and collectivism, a more fine-grained conceptualization of these constructs has been proposed (Chen, Meindl, & Hunt, 1997; Triandis, 1995). More specifically, it has been suggested that one can exhibit a vertical pattern of individualism or collectivism, in which one perceives inequalities among in-group members, or a horizontal pattern of these constructs, in which in-group member equality is emphasized. Triandis (1996) compared this distinction to Fiske's (1990; 1992) taxonomy of social orientations, equating the vertical and horizontal dimensions to what Fiske termed authority ranking and equality matching, respectively. Thus, four constructs have been proposed to explain individual differences in orientations toward social interactions: vertical individualism (VI), horizontal individualism (HI), vertical collectivism (VC), and horizontal collectivism (HC) (Singelis, Triandis, Bhawuk, & Gelfand, 1995). Each is described below.

Vertical and horizontal individualism. Individuals high in VI perceive themselves to be both independent and competitive, perceiving the self as different from other social group members. For example, Nelson and Shavitt (2002) found that

Americans (who were found to have higher overall VI scores) more frequently emphasized goal attainment and examining their achievements than did Danes (who tended to be more HI oriented). Those with a high HI orientation perceive the self to be autonomous, but in contrast to those high in VI, these individuals view the self as equal to other social group members. For instance, Feather (1994) characterized Australians as having high HI orientations, as they tend to resent “tall poppies”, or individuals whose achievements have led them to be individually distinguished.

Vertical and horizontal collectivism. Individuals characterized as having a VC orientation view the self as interdependent, but as with VI individuals, disparities in group member status and other characteristics are perceived. Consistent with this characterization, Ng and Van Dyne (2001) found that information provided by a person of high status with a diverging perspective had a greater impact on decision-making for individuals high in VC than low VC individuals. In contrast, high HC individuals not only see the self as being interdependent, but such individuals perceive few differences among group members. Further illustrating this cultural dimension, research has found the HC orientation to be positively correlated with personal values of benevolence and universalism (Oishi, Schimmack, Diener, & Suh, 1997).

Issues with measurement generality. Several measures of the four cultural constructs described above have been developed (see e.g., Chen et al., 1997; Singelis et al., 1995); however, such measures typically take a non-contextualized approach to the measurement of individual culture. In terms of the bandwidth-fidelity dilemma reviewed by Cronbach (1990), this generality of measurement results in the broad collection of

cultural information, but at the expense of scale reliability and precision. Further illustrating the limitations of broad, generalized cultural measures, research has demonstrated that the actions of those with individualistic and collectivistic orientations may differ based on the social context (Earley, 1993; Triandis et al., 1988). Thus, situational variation in the behavior of individuals with various cultural orientations is likely to reduce measurement reliability. In fact, in the development of their four-factor measure of individualism and collectivism, Chen et al. (1997) suggest that the potential increase in measurement precision across contexts is one benefit of adding the vertical-horizontal distinction to the measurement of individualism and collectivism. Thus, in an effort to further increase measurement precision in the assessment of individual culture, the focus of Study 1 is to develop context-specific measures of VI, HI, VC, and HC.

CHAPTER TWO

STUDY 1

As the measures of individualism and collectivism developed by Singelis et al. (1995) are frequently used in cultural research, the current study uses these measures as a foundation for the development of context-specific items measuring VI, HI, VC, and HC. Whereas previous research has demonstrated the psychometric soundness of this four-factor measure in a shortened form (Ng & Van Dyne, 2001), the original validation study conducted by Singelis et al. (1995) demonstrated only marginal model fit ($\chi^2(458) = 898.88$, Goodness of Fit Index (GFI) = 0.79, Adjusted GFI = 0.75, Root Mean Square Residual = 0.089). However, as is the case with most cultural measures, these measures contain items relevant to a variety of situations, which may have impacted inter-item correlations. For example, a sample VC item is “We should keep our aging parents with us at home”, and a sample HC item is “The well-being of my co-workers is important to me”. The former item is based on the personal domain of one’s life, whereas the latter encompasses a work context. Whereas such a measure is likely to have greater bandwidth, Cronbach and Gleser (1957) have suggested that broad constructs should be valid predictors of criteria with similar levels of generality. However, in many cases (e.g., organizational contexts), the outcomes of interest are likely to be much more context-specific (e.g., job performance or organizational justice perceptions). Thus, just as context has been suggested to impact cultural orientations at the group level (Singelis et al., 1995), situational specificity is also likely to impact individual cultural values. As a

result, a more precise measure of individual culture in which item context is considered may allow for the better prediction of context-specific outcomes.

As two such contexts often discussed in organizational research are the work and personal life domains (Wentworth, 2002), with numerous groups dedicated to examining issues related to the intersection of these two contexts (e.g., Boston College Center for Work and Family; Parents, Children and Work at the University of Chicago, Michigan State University, and National Opinion Research Center; Center for Working Families at the University of California–Berkeley; and Cornell Employment and Family Careers Institute), the development of individualism and collectivism measures specific to one’s work and personal life domains will be the focus of Study 1.

Method

Participants

In exchange for extra credit in or as part of an undergraduate psychology course, 627 undergraduate students from a large public university located in the Southeastern portion of the United States completed the Study 1 survey. The sample was comprised of 68.4% females with an average age of 20.01 years and 3.40 years of work experience. Participants were relatively evenly dispersed across college classifications, with 16.6% freshmen, 34.8% sophomores, 24.7% juniors, and 22.0% seniors (1.9% identified as graduate students or did not respond). The sample was primarily comprised of White/Caucasians (82.5%) and African Americans (9.9%) who identified themselves as being Christians (82.6%) or rationalists/skepticists (8.3%). Estimated annual income was less than \$25,000 for 93.3% of the sample, and the combined yearly income of one’s

parents was more than \$150,000 for 26.5%, \$125,000 to \$149,999 for 12.9%, \$100,000 to \$124,999 for 14.7%, \$75,000 to \$99,999 for 12.9%, \$50,000 to \$74,999 for 13.1%, \$25,000 to \$49,999 for 9.1%, and less than \$25,000 for 3.2% of respondents.

In addition, five subject matter experts (i.e., four psychology doctoral students and one advanced psychology undergraduate familiar with the individualism and collectivism constructs) participated in the Q-sort.

Measures

The survey used in this study was comprised of 10 demographic items (see Appendix A), four measures of individual culture in one's personal life domain (i.e., VI-P, HI-P, VC-P, and HC-P), and four measures of individual culture in one's work life domain (i.e., VI-W, HI-W, VC-W, and HC-W; see Appendices B through I), which were presented in the order in which they are listed above. Each of the eight measures of individual culture was adapted from Singelis et al. (1995). This resulted in the creation of 90 personal life domain items (i.e., 23 VI-P, 24 HI-P, 18 VC-P, and 25 HC-P items) and 80 work domain items (i.e., 23 VI-W, 18 HI-W, 19 VC-W, and 20 HC-W items). For each measure, a five-point Likert scale was used to indicate respondents' degree of agreement with each statement, where 1 = *strongly disagree* and 5 = *strongly agree*.

Procedure

To better examine both the psychometric properties of scale items (Little, Lindenberger, & Nesselroade, 1999), as well as construct domain coverage, reliability, and validity, consistent with previous research (see e.g., Menor & Roth, 2007), a two-part item development and validation approach was employed, which included the

administration of the study survey to a large group of undergraduates and the completion of a modified Q-sorting task (McKeown & Thomas, 1988) by a small group of subject matter experts in which a definition of each construct was provided and participants were asked to sort each study item into its relevant construct domain based on construct correspondence.

Results

Prior to hypothesis testing, the data were screened for outliers and nonnormality. Thirteen multivariate outliers (i.e., 2.1% of cases) were identified due to their high degree of leverage (i.e., Mahalanobis distance values which exceeded the chi-square critical value of 231.55 and demonstrated separation from other cases) and high multivariate kurtosis estimates (which exceeded 1650 and were separate from other cases). In addition, consistent with Allison (2003), missing values were examined, and data were imputed for scales missing less than 50% of responses using the maximum likelihood approach with the EM algorithm provided in EQS 6 (Bentler, 2005). As 124 cases contained missing data after imputation, 490 complete cases were used in subsequent analyses. Data imputations were made for 87 of the 490 remaining cases (i.e., 17.8% of the final sample), with a total of 267 imputed data points (i.e., 0.32% of all data points).

The data were then analyzed using a confirmatory factor analytic approach using EQS 6 (Bentler, 2005). Model fit was examined using the Satorra-Bentler model chi-square (S-B χ^2) statistic, comparative fit index (CFI; Bentler, 1990), root-mean-square error of approximation (RMSEA; MacCallum, Browne, & Cai, 2006), and the standardized root mean square residual (SRMSR). As the appropriateness of various fit

indexes depends on the model (Marsh, Hau, & Wen, 2004), examination of multiple goodness-of-fit indexes is recommended. According to Hu and Bentler (1999), CFI values greater than .95, RMSEA values less than .06, and SRMSR values less than .08 are considered acceptable; however, others (e.g., Marsh et al., 2004) have expressed concern over the use of such “overgeneralized fit heuristics”, advocating consideration of the limitations of the model at hand. Thus, as every fit index has its limitations, both relative and absolute fit indexes were examined in the current study in order to base conclusions on a more comprehensive set of statistical evidence. Consistent with recommendations by Chou, Bentler, and Satorra (1991), robust estimation was used to prevent undue influence due to departures from normality. As the robust fit estimates provide no corrections in the absence of non-normality, an examination of these statistics is appropriate both in the presence and absence of distributional concerns.

Due to hardware and software limitations, the fit of the original 170-item model was not examined. However, as the fit of two smaller models comprised of subsets of the full model should pose an upper bound on the fit of the full original model, the original model for each context (i.e., personal and work) was assessed (see Table 1), and both the model fit for the personal context measures (S-B $\chi^2(3909) = 14452.22$, CFI = .500, RMSEA = .067, SRMSR = .088) and the work context scales (S-B $\chi^2(3074) = 8508$, CFI = .509, RMSEA = .060, SRMSR = .097) was found to be poor. The inclusion of a method factor improved the fit of each model (S-B $\chi^2(3819) = 12610.73$, CFI = .583, RMSEA = .062, SRMSR = .066, Δ CFI = .083, Δ S-B $\chi^2(90) = 1967.57$, $p < .001$ for the personal context and S-B $\chi^2(2994) = 6089.70$, CFI = .720, RMSEA = .046, SRMSR = .059, Δ CFI

= .211, Δ S-B $\chi^2(80) = 3709.46$, $p < .001$ for the work context); however, model fit continued to fall below accepted standards.

To identify the source of misfit, item reliability was assessed by examining the squared item loadings, as this provides an index of the true score variance explained by each item (see Tables 2.1 and 2.2). Any item with a standardized loading less than .40 (i.e., a reliability of less than .16) was removed. Note that several indicators in Tables 2.1 and 2.2 have loadings below this standard. These indicators had trait loadings above .40 prior to the inclusion of a method factor, but these loadings were reduced after accounting for variance explained by a common method effect in the final model. In addition, scale dimensionality was assessed by examining the degree to which scale items shared variance with one or more latent factors. More specifically, model misfit was examined using the LaGrange Multiplier (LM) test to identify whether the specification of additional error covariances or cross-loadings provided a meaningful contribution to the model. Any indicator for which the specification of an error covariance or cross loading would improve the chi-square (i.e., model fit) by at least 30.0 points was removed. Thus, based on item reliability and dimensionality statistics, the VI, HI, VC, and HC scales were reduced to a total of 36 items (4 VI-P, 4 VI-W, 6 HI-P, 4 HI-W, 3 VC-P, 5 VC-W, 6 HC-P, and 4 HC-W).

The 36-item model demonstrated good fit (S-B $\chi^2(566) = 866.75$, CFI = .920, RMSEA = .023, SRMSR = .051), thereby providing support for the validity of the theorized model. Model fit significantly improved (Δ CFI = .025, Δ S-B $\chi^2(36) = 132.27$, $p < .001$) after the inclusion of a method factor (S-B $\chi^2(530) = 734.51$, CFI = .945, RMSEA

= .028, SRMSR = .039), as several scales (e.g., HI-P, HI-W, HC-P, VC-W) demonstrated moderate method effects (i.e., average variance extracted (AVE) was greater than 20% for the method factor). The overall AVE for the method factor across all indicators was .174, which indicates that whereas common method bias may have impacted responses on several scales, variance explained by common method bias was only 17.4% (a percentage that was likely inflated by large method effects on several scales). Nevertheless, additional scale refinement is necessary to ensure explained variance is comprised mostly of trait (as opposed to method) variance.

Table 3 provides the correlations among the eight latent factors. The horizontal scales had moderately high correlations across contexts (i.e., $r = -.836, p < .01$, and $r = .525, p < .001$, for HI and HC, respectively), whereas the vertical measures demonstrated small correlations across the personal and work domains ($r = .277, p < .001$, and $r = .152, ns$, for VI and VC, respectively). In addition, not surprisingly, many of the moderate to large correlations were between constructs identified as problematic in terms of method factor loadings, thereby illustrating wherein the shared variance lies. Nevertheless, the square root of the AVE for the VI-P and VC-P scales was relatively high (i.e., .702 and .636, respectively), which were both greater than the correlations between each of these scales and the remaining measures. Thus, for these two scales, evidence of both convergent and discriminant validity was demonstrated (cf. Fornell & Larcker, 1981). Future research should further examine the items representing the remaining constructs in order to present more evidence for the convergent and discriminant validity of these measures.

As an additional means of examining the validity of the newly developed items, interrater reliability was assessed for the Q-sort data by examining the percentage of interrater agreement for each pair of raters, as well as computing Cohen's kappa (Cohen, 1960), a conservative estimate of reliability that takes the probability of rater agreement due to chance into account (see Table 4). Interrater reliability improved for the shortened scale; however, for a majority of the rater pairs, agreement did not reach commonly accepted standards for reliability (cf. Nunnally, 1978). The overall average percentage of agreement was 61.67, with an average overall kappa of 0.55.

To assess content validity for the study measures, which refers to the extent to which items assess the underlying constructs of interest (Churchill, 1979), Moore and Benbasat's (1991) overall placement ratio (OPR) was used to examine item misclassification by computing the percentage of correctly sorted items. Following Moore and Benbasat's (1991) recommendations, any construct with an OPR less than 75% was further scrutinized to identify the items that were most frequently misclassified (see Tables 5.1 and 5.2). Items that were frequently misclassified and demonstrated low reliability or multidimensionality based on the previously described analyses were excluded. As would be expected, the average OPRs for the revised scales were higher than that of the OPRs based on all of the original 170 items (overall average OPR = 60.56 for the revised scales versus average OPR = 56.39 for the original scales), thereby lending support for increased construct validity. However, whereas six of the eight scales demonstrated at least marginally acceptable OPRs, results for the horizontal

individualism scales fell far below levels of acceptability. Therefore, further scale refinement is needed to strengthen these scales.

Discussion

The purpose of Study 1 was to develop and validate eight context-specific measures of individual culture. Upon examining the psychometric properties of each scale using both confirmatory factor analysis and results derived from a modified Q-sort, the scales were reduced from 170 total items to 36 items, with three to six items per scale. Thus, Study 1 provides preliminary support for the psychometric strength of the newly developed measures; however, as these results provide no information regarding the interrelations between these and other related constructs, the purpose of Study 2 was to develop the nomological network for these measures.

CHAPTER THREE

STUDY 2

As a principal concern of any scale is its psychometric soundness, Study 2 builds upon the results of Study 1 by examining the construct validity of the newly developed individualism and collectivism measures, or the degree to which the measures assess their respective latent constructs (Campbell & Fiske, 1959; Cook & Campbell, 1979; Schwab, 1980). More specifically, Study 2 assessed the convergent validity (i.e., the degree of overlap of measures of similar traits), discriminant validity (i.e., the amount of discrepancy across measures of dissimilar traits), and the internal consistency reliability (i.e., the correlations among items) of the study measures (Allen & Yen, 2001). Method effects were also compared across all study measures.

Review of the Measurement of Theoretical Correlates

Whereas conceptual links can be drawn between the constructs of individualism and collectivism and a number of psychological constructs, a review of the measures developed in three broad domains will be discussed below, including measures assessing (a) individualism and collectivism, (b) competitiveness, and (c) personal values.¹

Individualism and Collectivism

Although he did not use the terms individualism and collectivism, in one of the earliest studies within this domain, Tanaka (1978) compared individual goals across societal groups now widely perceived to be individualistic and collectivistic. Shortly thereafter, Hofstede (1980a) introduced the concepts of individualism and collectivism in a multi-national cultural study. Whereas Hofstede's work largely focused on the

measurement of national culture, Hui (1984, 1988) developed one of the earliest measures of individualism and collectivism meant for use at the individual level. Across several studies, Triandis and colleagues (Triandis et al., 1985, 1988; Triandis, Leung, Villareal, & Clack, 1985) demonstrated the validity of Hui's (1984, 1988) measures, in addition to identifying self-reliance, hedonism, and emotional distance as components of individualism, and family integrity, sociability, and interdependence as facets of collectivism. Notably, this work also identified a link between self-reliance and competitiveness, a concept that will be discussed in the next section. Likewise, Kashima and colleagues (1995) developed measures of agency and assertiveness, which they demonstrated to be facets of the individualism construct, in addition to identifying an association between measures of collectivism and relatedness.

In a study examining the convergence of individualism and collectivism and similar constructs, Triandis, McCusker, and Hui (1990) found individualism and collectivism to be related to the social content of the self (as measured using Kuhn and McPartland's (1954) "I am..." method), group homogeneity judgments, attitude items (Triandis et al., 1986, 1988), Schwartz's (1992, 1994b) values, and perceptions of behavioral appropriateness as a function of social distance (which was assessed using a direct estimation approach; Stevens, 1966). Others have assessed individualism and collectivism based on behavioral endorsements (Sinha & Verma, 1990), ratings of value importance (Weissman, Matsumoto, Brown, & Preston, 1993), perceptions of object indispensability (Hui, 1989), social network density and self-other comparisons (Kashima et al., 1995), and self-construals (Gudykunst, Matsumoto, Ting-Toomey, Nishida, &

Karimi, 1994; Gudykunst et al., 1996; Singelis, 1994) using a variety of item types (see e.g., Bhawuk & Brislin, 1992; Bierbrauer, Meyer, & Wolfradt, 1994; Oyserman, 1993; Wagner & Moch, 1986; Yamaguchi, 1994). Using a modified version of the Singelis et al. (1995) measure of individualism and collectivism (the original measure of which was also used as the basis for item development in Study 1 of the current paper), Triandis and Gelfand (1998) demonstrated an overlap between collectivism and measures of right-wing authoritarianism (i.e., the dispositional tendency to submit to authorities; Altemeyer, 1981) and collective identity (Cheek, Smith, & Tropp, 2002), as well as convergence between both individualism and collectivism and Clark, Ouellette, Powell, and Milberg's (1987) measure of communal orientations, which assesses individual views regarding interpersonal responsibilities and obligations. This study also examined Maslach, Stapp, and Santee's (1985) measure of public individuation, which assesses one's desire to perform behaviors that differentiate oneself; however, this relation did not reach significance.

Competitiveness

Despite the large number of individualism and collectivism measures that have been developed, many of these measures focus only on the independence-interdependence aspect of these constructs. However, as Singelis et al. (1995) and Ng and Van Dyne (2001) have demonstrated that these constructs also contain a horizontal-vertical dimension, an examination of assessments theoretically linked to this dimension is warranted. Thus, as this dimension is said to reflect one's perceptions regarding group hierarchies or inequalities among group members (Triandis, 1996), and as hierarchies are

often established through competition, a review of measures of competitiveness will be presented below.

Kildea (1983) suggested that competitiveness, a concept that first emerged as a topic of research more than one hundred years ago (see e.g., Triplett, 1897), can have a positive or negative connotation, with the former being described as personal development competitiveness, and the latter as a self-aggrandizing nature (Houston, McIntire, Kinnie, & Terry, 2002). Measures demonstrated by Houston et al. (2002) to assess the self-aggrandizing form of competitiveness, which refers to one's desire to win regardless of the cost, include the Competition and Cooperation Attitude Scale (CCAS; Martin & Larsen, 1976), the Competitiveness Questionnaire: Interpersonal Competitiveness (CQ; Griffin-Pierson, 1990), and the Hypercompetitiveness Attitude Scale (HAS; Ryckman, Hammer, Kaczor, & Gold, 1990). In the CCAS, competitiveness and cooperation are assessed across five areas, such as aggression, fascist tendencies, work ethic, power, and independence in settings such as games, school, and interpersonal relationships. The CQ focuses on competitiveness in everyday interpersonal situations, and the HAS measures one's desire to evade defeat in social settings such as arguments, school, driving, relationships, games, and sports.

Measures identified by Houston et al. (2002) as measuring personal development competitiveness, or a desire to compete in order to improve oneself or achieve task mastery, include the Personal Development Competitive Scale (PDCAS; Ryckman, Hammer, Kaczor, & Gold, 1996), the Competitiveness Index (CI; Smither & Houston, 1992), and the Sports Orientation Questionnaire: Competitiveness subscale (SOQ; Gill &

Deeter, 1988). The PDCAS is a non-contextualized measure that assesses the value one places on the process of winning. The CI and SOQ, on the other hand, are context-specific measures assessing competitiveness in games, arguments, and friendships, and work, games, and school, respectively. Houston et al. (2002) also identified the Work and Family Orientation Scale (WOFO; Helmreich & Spence, 1978) as a commonly used assessment of competitiveness. However, this measure was linked to both self-aggrandization and personal development competitiveness, suggesting that it captures components of both dimensions of competitiveness.

The argument can be made that competitiveness alone does not adequately describe the vertical-horizontal dimension of individualism and collectivism. For instance, need for dominance could also be a theoretical correlate of this construct, and several measures have been developed to assess this aspect of individual personality (see e.g., Burgoon, Johnson, & Koch, 1998; Gough & Heilbrun, 1983; Grahm, 1987). Measures of diversity value beliefs (see e.g., van Dick, van Knippenberg, Hägele, Guillaume, & Brodbeck, 2008; van Knippenberg, Haslam, & Platow, 2007) may also be linked to perceived group member inequality, as individuals with a more horizontal cultural orientation may be less likely to value diversity in work groups due to their tendency to perceive group member equality. Likewise, measures of power distance orientation (see e.g., Dorfman & Howell, 1988; Lee et al., 2000), which refers to one's acceptance of hierarchical power distributions (Hofstede, 1980a), may also be related to the vertical-horizontal aspect of individualism and collectivism.

Personal Values

Values have been defined as broad beliefs regarding desirable end states that guide behavior and are individually prioritized (Schwartz, 1992; Schwartz & Bilsky, 1987; 1990). Numerous models of the structure of human value systems have been developed (see e.g., Crosby, Bitner, & Gill, 1990; Schwartz, 1994b; Schwartz & Bilsky, 1987; Wicker, Lambert, Richardson, & Kahler, 1984). For instance, Schwartz and Bilsky's (1987) value model presents eight motivational domains that are thought to be influenced by cultural interests (i.e., individualism versus collectivism) and goal type (i.e., terminal versus instrumental). Values have been said to consist of cognitive, affective, and behavioral components (Rokeach, 1973), and according to Dawis and Lofquist (1984), values reflect one's needs; therefore, if an environment is not meeting an individual's needs, consistent with compensation perspectives regarding role investment (e.g., Champoux, 1978), an individual may seek alternative roles that are more consistent with the values of the individual. Research has supported this utilitarian approach to role investment in both work and nonwork domains, demonstrating that job commitment is positively linked to work rewards and inversely related to perceived costs (Farrell & Rusbult, 1981), and that positive associations exist between parental rewards and parental commitment (Amatea, Cross, Clark, & Bobby, 1986). Thus, as recent work has demonstrated a link between individualism and collectivism and employee work values (Hartung, Fouad, Leong, & Hardin, 2010), a review of value measures specific to the work and nonwork domains is presented below.

Work values. The measurement of work values dates back at least fifty years to the creation of the Work Values Inventory, which has undergone several series of modifications, with the most recent format containing 12 subscales measuring work values such as challenge, security, and variety (Super, 1957; 1964; 1970; Zytowski, 2006). Manhardt (1972) also created a measure identified as the Work Values Inventory, clustering 21 job characteristics into three dimensions: (a) comfort and security, (b) competence and growth, and (c) status and independence. Mirels and Garrett's (1971) approach to measuring work values focused on assessing one's Protestant work ethic, which emphasizes characteristics such as discipline, punctuality, and hard work. Buchholz's (1977) Work Beliefs Questionnaire also assesses one's work ethic, in addition to four additional belief systems, including the organizational belief system, Marxist-related beliefs, the Humanistic belief system, and leisure ethic. Pryor (1983) classified work values into 13 dimensions (e.g., independence, management, prestige), which were later demonstrated to cluster into three broad categories: (a) human/personal concern, (b) freedom, and (c) nonwork orientation (Pryor, 1987).

Other measures of work values have focused on determining the degree of centrality work has to one's life (Dubin, Champoux, & Porter, 1975), assessing whether ethical judgments are based on a normative or cost-benefit approach (Brady & Wheeler, 1996), examining acceptance and support of unethical organizational behaviors (Froelich & Kottke, 1991), and identifying perceptions regarding the importance of integration, Confucian work dynamism, human-heartedness, and moral discipline (Chinese Culture Connection, 1987). Schwartz (1994a) conceptualized work values as consisting of 10

value categories (e.g., power, benevolence, self-direction), and interestingly, Brett and Okumura (1998) used items from within the achievement and self-direction categories of this measure to assess individualism-collectivism,² and they used power and achievement value items to measure hierarchy versus egalitarianism.

Nonwork values. Whereas work values correspond to a specific environment, nonwork values can span a variety of domains (e.g., parenthood, friendships, relationships with neighbors). Thus, some measures assessing values within the nonwork domain have focused on specific contexts, such as perceptions of the pervasiveness of alcohol use among adolescents and adults within one's community (de Haan & Boljevac, 2009) and students' views of their friends' academic values (Goodenow & Grady, 1993). However, more frequently, general measures of personal values are administered to individuals within specific roles, and these values are related to context-specific outcomes, e.g., travel decisions (Pitts & Woodside, 1986), shopping behavior (Shim & Eastlick, 1998), media usage (Becker & Connor, 1981), food purchasing and consumption (O'Mahony & Hall, 2011), and voting behavior (Schwartz, Caprara, & Vecchione, 2010). Thus, in contrast to the large number of work value measures that have been developed, assessments designed to measure personal values across all nonwork domains are lacking. Thus, as will be described in more detail in the measures section below, for the purposes of this paper, a nonwork-specific values measure will be developed.

Study Hypotheses

As mentioned previously, the purpose of Study 2 was to examine the convergent and discriminant validity of the newly developed measures of individualism and collectivism. As described above, numerous measures of constructs conceptually linked to these variables have been developed. Therefore, the inclusion of all relevant measures in one study was not feasible, as the process of responding to such a large number of items would likely induce participant fatigue. Thus, measures from within each conceptual domain were selected based on previously demonstrated item reliability and validity, as well as coverage of each conceptual domain. More specifically, measures were chosen that were not only thought to be associated with individualism and collectivism or their horizontal and vertical dimensions, but an effort was also made to select diverse measures so as to maximize the coverage of related concepts. Based on the review presented above, the following relations are expected:

Hypothesis 1 (H1): The measures of context-specific individualism and collectivism developed in Study 1 will be associated with constructs that have been linked to generalized measures of individualism and collectivism in previous research (see Table 6).

Hypothesis 2 (H2): The vertical-horizontal dimension of the measures of context-specific individualism and collectivism developed in Study 1 will be related to measures of competitiveness, hierarchy perceptions, and power distance orientation such that competitiveness, hierarchy perceptions, and power distance orientation will be positively

correlated with each of the vertical cultural orientation measures and inversely related to each of the horizontal cultural orientation measures (see Table 7).

Hypothesis 3 (H3): The work-specific measures of individualism and collectivism developed in Study 1 will be associated with work value orientations, and the nonwork-specific measures of individualism and collectivism developed in Study 1 will be related to nonwork values.

In addition to sharing variance with related constructs, several other relations can be expected based on previous research. Namely, as the nonwork items in the newly developed culture measures are likely to have broader domain coverage due to greater item heterogeneity (e.g., nonwork-specific items refer to several nonwork settings, such as interactions with family, friends, and neighbors), it is expected that the relations between work-specific scales and the more generalized measures of individualism and collectivism will be significantly smaller than the relations between nonwork-specific scales and generalized culture measures. In addition, the generalized cultural measures examined in the current study do not differentiate between the horizontal and vertical aspects of culture, but rather, they are used as broad measures of the individualism and collectivism constructs. Therefore, it is expected that within each context measured by the newly developed measures (i.e., work and nonwork), relations between horizontal individualism (collectivism) and generalized culture measures will not differ from that of the relations between vertical individualism (collectivism) and generalized culture measures.

Hypothesis 4 (H4): The work-specific measures of individualism and collectivism developed in Study 1 will have significantly smaller relations with generalized measures of individualism and collectivism than nonwork-specific measures have with the generalized measures of individualism and collectivism.

Hypotheses 5a and 5b (H5a & H5b): The relations between horizontal individualism and generalized individualism measures will not significantly differ from relations between vertical individualism and generalized individualism measures in both the (a) work and (b) nonwork contexts.

Hypotheses 6a and 6b (H6a & H6b): The relations between horizontal collectivism and generalized collectivism measures will not significantly differ from relations between vertical collectivism and generalized collectivism measures in both the (a) work and (b) nonwork contexts.

Competition is often described as being context-dependent, such that behavior is impacted by the structure of a situation, which can be competitive (i.e., where there are finite outcomes for which individuals must compete), cooperative (i.e., where outcomes can only be achieved through a group effort), or individualistic⁴ (i.e., where outcome achievement is independent of the actions of others) (Tjosvold, Johnson, Johnson, & Sun, 2003). As individual incentive systems in which there are limited resources are the norm in most organizations, it can be argued that such settings encourage competition. In contrast, many nonwork contexts can be characterized as cooperative or individualistic, as individuals are more likely to value interdependence in nonwork contexts due to their close personal relationships with others (e.g., family members and friends), and as

nonwork goals are likely to be more wide-ranging due to the greater breadth of this life domain, there is likely greater variation in desired outcomes across persons. Thus, it is expected that in the current study, the relations between culture and competition, hierarchy, and power distance orientation measures will be stronger for work-specific than nonwork-specific measures of individualism and collectivism, as competition is likely emphasized to a greater extent in work contexts than nonwork settings. In addition, as highly collectivistic individuals are characterized as engaging in cooperative, group-oriented behaviors, it seems likely that vertical and horizontal collectivism would have weaker relations with measures of competitiveness, hierarchy perceptions, and power distance orientation than would their respective individualistic counterparts.

Hypothesis 7 (H7): The relations between Study 1 measures and measures of competitiveness, hierarchy perceptions, and power distance orientation will be significantly larger for work-specific measures than nonwork-specific measures.

Hypothesis 8a (H8a): The relations between vertical individualism and measures of competitiveness, hierarchy perceptions, and power distance orientation will be significantly larger than relations between vertical collectivism and competitiveness, hierarchy perceptions, and power distance orientation measures.

Hypothesis 8b (H8b): The relations between horizontal individualism and measures of competitiveness, hierarchy perceptions, and power distance orientation will be significantly larger than relations between horizontal collectivism and competitiveness, hierarchy perceptions, and power distance orientation measures.

In examining relations among Study 1 culture measures and personal values, it is not only expected that work-specific culture will be linked to work values and nonwork-specific culture will be associated with nonwork values, but as an index of the discriminant validity of these measures, context-consistent and context-inconsistent relations will be compared. Namely, it is expected that the work-specific culture measures will have stronger relations with work values than nonwork values, and nonwork-specific culture will have stronger relations with nonwork values than with work values.

Hypothesis 9a (H9a): Work-specific measures of individualism and collectivism will have stronger relations with work values measures than nonwork values measures.

Hypothesis 9b (H9b): Nonwork-specific measures of individualism and collectivism will have stronger relations with nonwork values measures than work values measures.

Finally, to further assess the discriminant validity of the newly developed culture measures, the incremental validity of these measures will be assessed by examining whether they can predict variance beyond that of other similar constructs.

Hypothesis 10a (H10a): Relations between Study 1 measures and generalized culture measures will remain significant after controlling for competitiveness, hierarchy perceptions, power distance orientation, and personal values.

Hypothesis 10b (H10b): Relations between Study 1 measures and competitiveness, hierarchy perceptions, and power distance orientation measures will remain significant after controlling for generalized culture and personal values.

Hypothesis 10c (H10c): Relations between Study 1 measures and personal values measures will remain significant after controlling for generalized culture, competitiveness, hierarchy perceptions, and power distance orientation.

Method

Participants

Four hundred seventy undergraduate students from a large public university located in the Southeastern portion of the United States participated in this study in exchange for extra credit in an undergraduate psychology course. On average, participants were 19.27 years of age with 2.46 (SD = 2.37) years of work experience. Females made up 66.2% of the study sample, which included 57.0% freshmen, 24.0% sophomores, 10.2% juniors, and 8.5% seniors. Participants primarily identified as being White/Caucasian (84.3%) or African American (7.7%), as well as Christians (88.1%) or rationalists/skepticists (6.6%). Estimated annual income was less than \$25,000 for 96.8% of the sample, and the mode for the combined yearly income of one's parents was \$150,000/year or more.

Measures

Basic demographic information was collected at the beginning of each survey (see Appendix A). To ensure ordering effects for the remaining measures did not impact study findings, study measures were counterbalanced within their respective conceptual domains (i.e., measures were randomly ordered within each of the following groups: (a) measures of individualism, collectivism, and related constructs; (b) measures of competitiveness, hierarchy perceptions, and power distance orientation; and (c) measures

of personal values). In addition, the presentation order of the conceptual domains was also randomized to mitigate the chance of bias. A description of each measure is presented below.

Conceptual domain one: Individualism, collectivism, and related concepts.

Work and nonwork individualism and collectivism scales. The measures developed in Study 1 were used to assess VI, HI, VC, and HC for both the work and nonwork life domains (see Appendices B through I).

Communal Orientation Scale (COS). Clark et al.'s (1987) 14-item COS was used to measure individual perceptions regarding one's responsibilities and obligations in interpersonal relationships (see Appendix J). Participants were asked to rate each statement in regard to how characteristic it is of themselves on a nine-point scale, where 1 = *extremely uncharacteristic* and 9 = *extremely characteristic*. A sample item is "I believe people should go out of their way to be helpful."

Individuation scale. Maslach et al.'s (1985) 12-item measure of individuation was used to measure one's inclination to perform overt, differentiating behaviors (see Appendix K). Each item was rated based on one's willingness to perform the behavior using a nine-point scale, where 1 = *not at all willing to do this* and 9 = *very much willing to do this*. An example item is "Accept a nomination to be a leader of a group."

Aspects of Identity Questionnaire (AIQ). A shortened version (i.e., the unscored items were removed) of the AIQ-IV (Cheek et al., 2002), which measures aspects of one's self-concept across four levels of generality, including (a) personal

identity, or how individuals view one's private self, including traits and abilities (e.g., "My self-knowledge, my ideas about what kind of person I really am"), (b) relational identity, or one's perception of oneself in personal relationships (e.g., "Being a good friend to those I really care about"), (c) social identity, which refers to how individuals see themselves in all types of interpersonal relationships (e.g., "My reputation, what others think of me"), and (d) collective identity, or one's view of their general social or societal group classification (e.g., "My religion") was used (see Appendix L). Each of the 35 items was rated on a nine-point scale, where 1 = *not important to my sense of who I am* and 9 = *extremely important to my sense of who I am*.

Collectivism, agency, assertiveness, and relatedness scales. Kashima et al.'s (1995) seven-item measure of collectivism, twelve-item measure of individualism (which consists of a seven-item agency factor and five-item assertiveness factor), and four-item measure of relatedness were included (see Appendix M). Respective sample items for (a) collectivism, (b) agency, (c) assertiveness, and (d) relatedness include: (a) "I respect decisions made by my group", (b) "I don't think it necessary to act as fellow group members would prefer", (c) "I assert my opposition when I disagree strongly with the members of my group", and (d) "I feel like doing something for people in trouble because I can almost feel their pains". Each item was rated on a nine-point scale, where 1 = *strongly disagree* and 9 = *strongly agree*.

Conceptual domain two: Competitiveness and preference for power

distribution.

Personal Development Competitive Attitude Scale (PDCAS). Ryckman, Hammer, Kaczor, and Gold's (1996) 15-item measure of individual attitudes regarding one's motivation for being competitive was used (see Appendix N), with those identified as having a personal development competitive attitude being characterized by a focus on task mastery and gratification, rather than an emphasis on winning. "I enjoy competition because it gives me a chance to discover my abilities" is an example item from this measure. Participants rated each item on a nine-point scale, where 1 = *strongly disagree* and 9 = *strongly agree*.

Hypercompetitive Attitude Scale (HAS). Hypercompetitive attitudes, which have been described as an indiscriminate desire to avoid defeat at any cost, were assessed using Ryckman, Hammer, Kaczor, and Gold's (1990) 26-item measure (see Appendix O). A sample item is "People who quit during competition are weak." Each statement was rated on a nine-point scale, where 1 = *never true of me* and 9 = *always true of me*.

Hierarchy versus egalitarianism scale. Brett and Okumura's (1998) six-item measure of hierarchy versus egalitarianism was used to assess preferences regarding power and status differentiation (see Appendix P). Participants rated the importance of items such as "social recognition" on a nine-point scale, where 1 = *not important* and 9 = *extremely important*.³

Power distance scale. Dorfman and Howell's (1988) six-item power distance measure was included (see Appendix Q). An example item is "Managers should seldom ask for the opinions of employees." Each item was rated on a nine-point scale, where 1 = *strongly disagree* and 9 = *strongly agree*.

Conceptual domain three: Personal values.

Work Aspect Preference Scale (WAPS). A shortened version of the WAPS developed by Pryor (1983) was used to assess individual perceptions of the importance of various work attributes (see Appendix R). Whereas the original measure consists of 13 subscales, each of which contains four items, due to a lack of relevance to the current study, the physical activity and surroundings subscales were removed. Remaining subscales included independence, coworkers, self-development, creativity, money, life style, prestige, altruism, security, management, and detachment. "Work in which you can acquire specialized skills" is an example of a self-development item. All 44 items were rated using a nine-point rating scale ranging from 1 = *totally unimportant* to 9 = *extremely important*.

Nonwork Aspect Preference Scale (NAPS). A modified version of the WAPS (Pryor, 1983) was used to assess participant perceptions of nonwork attribute importance (see Appendix S). In this modified scale, the item stem "Work in which you" was replaced with "Nonwork activities in which you" for each item, and all references to work were replaced with broad terms such as "activities" or "things". For example, "Work in which you can determine the way your own work is done" in the original WAPS was replaced in the NAPS with "Nonwork activities in which you can determine

the way your own activities are done”. Consistent with the modified WAPS, the physical activity and surroundings subscales were removed due to a lack of relevance to the current study, in addition to the money, life style, security, and detachment subscales, which are not germane to nonwork settings. Thus, the 28-item NAPS consisted of seven subscales, including independence, peers (i.e., the renamed coworkers subscale), self-development, creativity, prestige, altruism, and management. The rating scale for the NAPS was the same as in the WAPS, with response options ranging from 1 = *totally unimportant* to 9 = *extremely important*.

Results

In conducting regression diagnostics (using the same criteria described in Study 1), 14 multivariate outliers (i.e., 3.0% of cases) were identified and removed from subsequent analyses. In addition, data imputations were made for any scale in which less than 50% of data were missing. This was done using the maximum likelihood approach with the EM algorithm provided in EQS 6 (Bentler, 2005). As four cases contained missing data after imputation, 452 complete cases were used in subsequent analyses. Data imputations were made for 43 of the 452 remaining cases (i.e., 9.5% of the final sample), with a total of 67 imputed data points (i.e., 0.06% of all data points). The data were then analyzed using a confirmatory factor analytic approach using EQS 6 (Bentler, 2005), and fit was assessed utilizing the same fit statistics examined in Study 1 (i.e., S-B χ^2 , CFI, RMSEA, and SRMSR). Also consistent with Study 1, robust estimation was used to reduce the impact of non-normality. In addition, as chi-square values can be highly sensitive with large sample sizes, some researchers (e.g., Byrne, 2006) have suggested

that caution be taken in drawing conclusions from chi-square significance tests when utilizing large samples. Instead, Byrne (2006) advocates the examination of CFI values, suggesting that a difference in model fit of more than .01 reflects a meaningful model change. Thus, whereas chi-square significance tests are reported in the current paper, CFI changes will be examined to assess *practically* significant model differences.

To cross-validate the findings of Study 1, the measurement model for the newly developed context-specific measures of individual culture was examined (see Table 8). The 36-item model demonstrated acceptable fit (S-B $\chi^2(566) = 1088.86$, CFI = .880, RMSEA = .045, SRMSR = .060), which improved significantly (Δ CFI = .030, Δ S-B $\chi^2(36) = 168.92$, $p < .001$) with the inclusion of a method factor (S-B $\chi^2(530) = 925.68$, CFI = .910, RMSEA = .041, SRMSR = .045). After the specification of an error covariance between VC-W items 14 and 19, model fit further improved (Δ CFI = .015, Δ S-B $\chi^2(1) = 33.25$, $p < .001$), thereby demonstrating good model fit (S-B $\chi^2(529) = 858.06$, CFI = .925, RMSEA = .037, SRMSR = .04). Upon inspection of these two items, this covariance is likely reflective of the references both of these two items make to diversity and organizational objectives.

Whereas the specification of a model with eight first-order factors provided good fit, several alternative models were examined to further assess the structure of individual culture. Because second-order factor under-identification issues (see Kline (2004) for a review of model identification issues) precluded the examination of Singelis et al.'s (1995) conceptualization of a four-factor model of horizontal and vertical individualism and collectivism, model fit for four over-identified latent factor models expected to

demonstrate model misfit were examined as a means of providing indirect evidence regarding the structure of individual culture (see Figure 1). As expected, model fit for models specifying a second-order individualism-collectivism factor (S-B $\chi^2(549) = 923.94$, CFI = .914, RMSEA = .039, SRMSR = .049), two second-order individualism and collectivism factors (S-B $\chi^2(548) = 923.81$, CFI = .914, RMSEA = .039, SRMSR = .049), and two second-order work and nonwork factors (S-B $\chi^2(548) = 923.70$, CFI = .914, RMSEA = .039, SRMSR = .049) was significantly worse (Δ CFI = .011 in all three cases, Δ S-B $\chi^2 = -67.26$, -67.13 , and -66.89 , $p < .001$, respectively) than the revised first-order factor model, whereas only a slight (albeit significant) reduction in model fit occurred for the model with two second-order horizontalism and verticalism factors (S-B $\chi^2(548) = 914.38$, CFI = .916, RMSEA = .039, SRMSR = .048, Δ CFI = .009, Δ S-B $\chi^2 = -58.32$, $p < .001$). In addition, in contrast to previous research demonstrating the multidimensionality of individual culture (Oyserman et al., 2002), the single second-order individualism-collectivism factor model fit did not significantly differ from that of the dual second-order individualism and collectivism factors model (Δ CFI = .000, Δ S-B $\chi^2(1) = 0.009$, *ns*). Based on these results, eight first-order latent factors were specified in all subsequent context-specific culture models.

Likewise, the structure of personal values was also assessed (see Table 9). Namely, model fit for the hypothesized two-factor model in which latent second-order work and nonwork values factors were modeled was compared to a model with one second-order values factor, as well as a model in which only first-order factors were modeled (see Figure 2). Contrary to expectations, model fit was best for the first-order

factors model (S-B $\chi^2(1563) = 2404.15$, CFI = .941, RMSEA = .035, SRMSR = .044). This model was significantly better than both the dual second-order factors model (S-B $\chi^2(1681) = 3853.83$, CFI = .849, RMSEA = .054, SRMSR = .086, Δ CFI = .092, Δ S-B $\chi^2(118) = -1378.71$, $p < .001$) and the single second-order factor model (S-B $\chi^2(1682) = 3969.64$, CFI = .841, RMSEA = .055, SRMSR = .092, Δ CFI = .100, Δ S-B $\chi^2(119) = -1487.85$). Thus, the first-order factor conceptualization of work and nonwork values was used in all subsequent models.

Prior to examining relations between the newly developed culture measures and scales hypothesized to be within the nomological network of these measures, the measurement properties of each measure within conceptual domains one, two, and three were examined. Items with trait loadings less than .35 (i.e., reliability of less than .12) or that demonstrated multidimensionality (i.e., the specification of a cross-loading or error covariance would result in a chi-square change of greater than 30) were removed (see Table 10). As hardware and software limitations precluded the examination of model fit for a single measurement model containing all corresponding measures (i.e., 31 latent factors), the measures were divided and examined in two separate models. After revisions, the first model, which contained the communal orientation scale, WAPS, NAPS, and a method factor, demonstrated good fit (S-B $\chi^2(1924) = 3015.16$, CFI = .927, RMSEA = .035, SRMSR = .045). Likewise, the second model, which included the individuation, AIQ, collectivism, agency, assertiveness, relatedness, PDCAS, HAS, hierarchy, and power distance orientation scales, as well as a method factor, also did a

good job of reproducing observed variances and covariances after scale modifications (S-B $\chi^2(2915) = 4062.06$, CFI = .895, RMSEA = .030, SRMSR = .052).

Whereas psychometrically sound measures have reliable items that share trait variance, if the shared variance is common across items and traits, this suggests that a method effect may have influenced participant responses (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). To examine this possibility, in each of the previously described models, a latent method factor was included to examine the amount of variance explained by a common method effect for each measure and to compare method effects for the newly developed measures to that of related measures (see Figure 3). It was expected that the newly developed context-specific culture items would have significantly smaller method loadings than conceptual domain one items, as the average trait variance extracted is likely to be higher for the context-specific culture factors due to the greater homogeneity of items within scales. The overall AVE for the method factor across all indicators was .038, which indicates that common method bias had little impact on participant responses, and, therefore, study measures are capturing mostly trait (as opposed to method) variance. The average AVE for the method factor across all context-specific culture items was .01 or 1% of the total variance versus .02 or 2% of the total variance for the generalized culture scales. Thus, common method bias had little impact on participant responding overall, and, as expected, the contextualized measures had slightly smaller method effects than generalized culture measures.

In examining the full model, hardware and software limitations were again problematic. Therefore, to address this issue, observed scores were computed for 25 of

the corresponding measures (i.e., the minimum number that met software and hardware requirements), and these observed variables were used in the final model. Observed scores were only used for measures with a trait reliability value of at least .70 (more than half were above .80) and an AVE of at least .35 (the average AVE for measures modeled as observed variables was .53), thereby ensuring that model fit would not likely be unduly influenced (i.e., highly reliable, unidimensional latent factors are highly similar to their observed scores). The dimensionality of each of the measures for which an observed score was used was examined across a series of models with all corresponding factors to ensure multidimensionality issues were not present.

Model fit for the model with all corresponding conceptual domain one, two, and three measures and a method factor was good (S-B $\chi^2(1293) = 2017.36$, CFI = .913, RMSEA = .035, SRMSR = .050). Model fit for the full model, including the newly developed culture measures as well as the corresponding scales was only marginal (S-B $\chi^2(3770) = 5853.61$, CFI = .862, RMSEA = .035, SRMSR = .054), but fit significantly improved (Δ CFI = .015, Δ S-B $\chi^2(371) = 685.23$, $p < .001$) after several problematic context-specific culture items were removed and an error covariance between HC-P items seven and nine was specified (S-B $\chi^2(3399) = 5166.69$, CFI = .877, RMSEA = .034, SRMSR = .052). After inspecting these two items, it is likely that this covariance reflects the similarity of these items, in that the former references maintaining harmony and the latter has a focus on cooperation. Standardized loadings and AVE estimates for the context-specific culture measures are provided in Table 11. (Note that standardized loadings and AVE estimates for the corresponding measures presented in this table are

based on the two previous models described above in which all scales were modeled using latent factors.)

To index the convergent validity of the newly developed culture measures, the correlations among the scales were examined (see Table 12). *H1* was partially supported (see Table 13.1), as positive correlations were found between HI-W and VI-W and individuation ($r = .246$ and $.228$, $p < .001$, respectively), as well as between the HI-W, HI-P, and VI-W measures and personal identity ($r = .540$, $.547$, and $.344$, $p < .001$, respectively). Assertiveness was also positively linked to HI-W and VI-W ($r = .274$ and $.194$, $p < .001$, respectively). Contrary to expectations, assertiveness was inversely related to VI-P ($r = -.169$, $p < .001$). All other hypothesized individualism relations did not reach significance (i.e., $p > .001$). As expected, HC-W, HC-P, and VC-W measures were positively linked to communal orientation ($r = .497$, $.496$, and $.429$, $p < .001$, respectively), relational identity ($r = .485$, $.681$, and $.484$, $p < .001$, respectively), and relatedness scales ($r = .472$, $.426$, and $.402$, $p < .001$, respectively), VC-P was positively related to collective identity ($r = .306$, $p < .001$), and HC-P, VC-W, and VC-P were positively associated with collectivism ($r = .203$, $.330$, and $.234$, $p < .001$, respectively). All other hypothesized correlations with the contextualized collectivism scales were non-significant.

H2, which stated that the vertical culture scales would be positively correlated with conceptual domain two measures, whereas the horizontal scales would be inversely related to these scales, was also partially supported (see Table 13.2). Namely, VI-W and VC-W were positively correlated with the PDCAS ($r = .620$ and $.194$, $p < .001$,

respectively), VI-W and VI-P were positively linked with the HAS ($r = .428$ and $.594$, $p < .001$, respectively), VI-W and VI-P were positively linked to the hierarchy scale ($r = .348$ and $.438$, $p < .001$, respectively), and VI-P was positively related to power distance orientation ($r = .268$, $p < .001$). Likewise, several hypothesized relations with the horizontal scales also emerged. Namely, HC-W was negatively correlated with the HAS and power distance orientation scales ($r = -.273$ and $-.246$, $p < .001$, respectively). Unexpectedly, positive relations emerged between the PDCAS and both HI-W and HC-W ($r = .259$ and $.228$, $p < .001$, respectively), the HAS and HI-P ($r = .236$, $p < .001$), and hierarchy and HC-P ($r = .190$, $p < .001$). All other hypothesized *H2* relations were non-significant.

Providing partial support for *H3* (see Tables 13.3 and 13.4), HI-W was positively linked to the independence, self development, creativity, altruism, security, management, and detachment work values scales ($r = .253$, $.409$, $.284$, $.254$, $.214$, and $.219$, $p < .001$, respectively), HI-P was positively correlated with the coworkers, self development, creativity, money, security, and management work values scales ($r = .176$, $.371$, $.317$, $.337$, $.271$, and $.277$, $p < .001$, respectively), HC-W was positively associated with the coworkers, self development, altruism, and security work values scales ($r = .503$, $.436$, $.503$, and $.186$, $p < .001$, respectively), and VC-W was positively linked to the coworkers, self development, life style, altruism, and security work values scales ($r = .409$, $.466$, $.244$, $.423$, and $.308$, $p < .001$, respectively). In addition, several nonwork culture scales were related to nonwork values. Namely, HI-P was positively correlated with the independence, self development, and creativity nonwork values scales ($r = .367$, $.211$,

and .210, $p < .001$, respectively), VI-P was positively associated with the independence and prestige nonwork values measures ($r = .181$ and $.233$, $p < .001$, respectively), and HC-P was positively linked to the independence, peers, self development, prestige, and altruism nonwork values scales ($r = .196$, $.497$, $.282$, $.296$, and $.351$, $p < .001$, respectively). All other *H3* relations were non-significant.

To establish further evidence of convergent validity, significance tests were conducted to examine whether various sets of relations differed in magnitude. This was done by comparing the fit of models imposing factor correlation constraints to the fit of the full model reported previously. For the first set of significance tests, the correlations between the work-specific culture measures and corresponding conceptual domain one measures were constrained to be equal to that of the nonwork culture scales and corresponding measures. Six constraints (i.e., relations between HC scales and the AIQ – Relational measure, VI scales and AIQ – Social, communal orientation, and assertiveness measures, and VC scales and AIQ – Personal and AIQ – Relational) were identified by the LM test as surpassing the critical chi-square value for one degree of freedom of 10.83 ($p < .001^5$), thereby indicating these constraints had a significant impact on model misfit. In three of the six cases (i.e., relations between HC and AIQ – Relational and VI and both AIQ – Social and the COS), correlations with the personal context measures were of greater magnitude, thereby providing partial support for *H4*. After these six constraints were removed, fit for the model with all remaining constraints did not differ from that of the unconstrained model (S-B $\chi^2(3433) = 5260.75$, CFI = .873, RMSEA = .034, SRMSR = .056, Δ CFI = .004, Δ S-B $\chi^2(34) = 101.40$, $p < .001$).

Paired factor correlation constraints were also used to examine whether horizontal individualism had correlations with generalized individualism measures (i.e., individuation, AIQ – Personal, agency, and assertiveness scales) that significantly differed from that of vertical individualism. One constraint (i.e., that which included correlations between AIQ – Personal and both HI-P and VI-P) was identified by the LM test as posing significant ($p < .001$) harm to the model, thereby contributing to model misfit. The final constrained model in which all included constraints were non-significant at $p < .001$ (which included seven constraints) did not significantly differ from that of the unconstrained model (S-B $\chi^2(3406) = 5185.53$, CFI = .877, RMSEA = .034, SRMSR = .052, Δ CFI = .000, Δ S-B $\chi^2(7) = 19.86$, *ns*). Thus, *H5a* was supported, and as only one significant difference across nonwork measures emerged, partial support was garnered for *H5b*.

Similar sets of analyses were also conducted to examine whether relations between horizontal collectivism and generalized collectivism measures (i.e., COS, AIQ – Relational, AIQ – Social, AIQ – Collective, collectivism, and relatedness scales) differed from that of vertical collectivism and generalized collectivism measures across both work and nonwork contexts. Model fit became significantly worse (Δ CFI = .011, Δ S-B $\chi^2(12) = 99.89$, $p < .001$) after including the 9 factor correlation constraints (with 12 bivariate relations, there were only nine degrees of freedom or nine independent relations) (S-B $\chi^2(3411) = 5343.25$, CFI = .866, RMSEA = .035, SRMSR = .053), but no constraints were identified by the LM test as posing significant ($p < .001$) harm to the model. As several univariate significance tests were significant at less conservative alpha levels

(e.g., $p < .05$), the accumulation of these marginally significant effects likely influenced the omnibus significance test. Nevertheless, as differences between vertical and horizontal collectivism in both work and nonwork contexts were non-significant (as indexed by the univariate chi-square significance tests), *H6a* and *H6b* were supported.

Relations were also examined between context-specific culture measures and measures of competitiveness, hierarchy perceptions, and power distance orientation across the work and nonwork domains. Model fit did not meaningfully differ ($\Delta\text{CFI} = .008$, $\Delta\text{S-B } \chi^2(16) = 141.69$, $p < .001$) after constraining all factor correlations to be equal (S-B $\chi^2(3415) = 5297.24$, CFI = .869, RMSEA = .035, SRMSR = .055), and the LM test identified no constraints as being individually significant ($p < .001$). Therefore, support was not garnered for *H7*, which predicted work-specific measures would have larger relations with conceptual domain two measures than nonwork scales.

In examining hypothesized differences in the relations between vertical individualism and measures of competitiveness, hierarchy perceptions, and power distance orientation and that of vertical collectivism and these measures, as well as differences between horizontal individualism and horizontal collectivism in relations with these measures, no individual constraint significantly ($p < .001$) contributed to model misfit. However, the final constrained model had substantially worse fit (S-B $\chi^2(3415) = 5374.51$, CFI = .864, RMSEA = .036, SRMSR = .056, $\Delta\text{CFI} = .013$, $\Delta\text{S-B } \chi^2(16) = 103.42$, $p < .001$). Nevertheless, as the univariate significance tests were non-significant, *H8a* and *H8b* were not supported.

Significance tests were also conducted to determine whether the relations between work (nonwork) culture measures and work (nonwork) values were stronger than that of nonwork (work) culture measures and work (nonwork) values. Model fit did not substantially differ ($\Delta\text{CFI} = .006$, $\Delta\text{S-B } \chi^2(48) = 142.92$, $p < .001$) after including the 48 factor correlation constraints (S-B $\chi^2(3447) = 5303.69$, $\text{CFI} = .871$, $\text{RMSEA} = .035$, $\text{SRMSR} = .054$), and no constraints were identified by the LM test as individually posing significant ($p < .001$) harm to the model. Therefore, *H9a* and *H9b* were not supported.

Consistent with Fornell and Larcker (1981), discriminant validity was examined by comparing the amount of variance extracted by each first-order construct measuring HI-W, HI-P, VI-W, VI-P, HC-W, HC-P, VC-W, and VC-P to the amount of shared variance between these measures and corresponding scales (see Table 12). More specifically, the square root of the AVE for the latent context-specific culture factors was compared to the correlations between these variables and their conceptual correlates. In all but two cases (i.e., the correlations between HI-P and HI-W and HC-W and VC-W, $r = .587$ and $.715$, respectively), the square root of the AVE for each factor surpassed the amount of shared variance between the factor and corresponding measures. Thus, strong evidence for discriminant validity was demonstrated. In addition, the square root of the AVE for all eight measures was high (i.e., above $.55$ in all cases), thereby providing additional support for convergent validity.

Finally, as an additional index of the discriminant validity of the newly developed culture measures, the incremental validity of these measures was assessed by conducting a hierarchical regression in which conceptual domain one (*H10a*), two (*H10b*), or three

(*H10c*) measures were modeled as outcome variables, all remaining measures (excluding the newly developed context-specific culture measures) were entered as predictors in step one of the regression, and the contextualized culture measures were included in step two of each model (see Table 14). As a suppression issue resulted in an inadmissible solution in a model utilizing latent factor modeling, observed variables were used for each measure. As this technique does not allow for measurement error correction, this is a conservative approach in which coefficients may be underestimated.

In examining conceptual domain one measures as outcome variables, six of the 10 regression equations (i.e., those in which the communal orientation, personal identity, relational identity, social identity, collectivism, or assertiveness was the criterion) were significantly ($p < .001$) improved by the addition of the context-specific culture measures. Likewise, three of the four models predicting conceptual domain two measures (i.e., excluding the power distance orientation model) significantly ($p < .001$) increased the overall model R^2 . Finally, overall effects for four of the 17 personal values models (i.e., those in which the coworkers, self development, or altruism work values scales or the peers nonwork values scale was the dependent variable) significantly improved ($p < .001$) with the addition of the context-specific measures. Therefore, *H10a*, *H10b*, and *H10c* were partially supported.

Discussion

The purpose of Study 2 was to examine the construct validity of the newly developed context-specific measures of individual culture and develop the nomological network for these scales. A cross-validation of the measurement properties of these scales

led to the removal of an additional four items, thereby resulting in a total of 32 items measuring context-specific culture. In examining the structure of these constructs, as expected, a first-order factor model provided the best model fit. Interestingly, despite previous work that has demonstrated the orthogonality of the individualism and collectivism constructs (see e.g., Oyserman et al., 2002), a two-factor conceptualization of individual culture did not provide better model fit than a unidimensional second-order factor model. Thus, future research is needed to better understand the nature of these constructs. In addition, the structure of the personal values scales was also assessed, and, contrary to expectations, a first-order factor model provided superior fit to that of alternative conceptualizations, suggesting that the scales are not reflective of second-order values factors. Also, based on confirmatory factor analytic findings, scale refinements were made to many of the measures included in the study as a result of item reliability or dimensionality issues, thereby increasing the psychometric strength of these measurement tools. Method effects were also examined and determined to be minimal across all measures used in the current study, thereby lending further support to the validity of these scales.

A second goal of this study was to examine the interrelationships between the newly developed context-specific culture measures and scales hypothesized to be within their nomological network. In establishing convergent validity, positive correlations emerged between several of the context-specific individualism measures and individuation, personal identity, and assertiveness, as well as between contextualized collectivism measures and communal orientation, relational identity, collective identity,

generalized collectivism, and relatedness. Unexpectedly, inverse relations emerged between vertical individualism in the personal context and assertiveness. Additionally, horizontal collectivism in both contexts and vertical collectivism at work had positive relations with the assertiveness scale, which is somewhat contradictory to the conceptualization of the collectivism construct. However, noteworthy is that four of the five significant positive relations between contextualized culture and assertiveness involved work culture scales, which may shed some light on the nature of these unexpected relations. Namely, as assertiveness is viewed to be a positive trait in many organizational settings, individuals may be more likely to be assertive in a work context, even if such behaviors are inconsistent with one's work-specific cultural orientation. Likewise, in explaining the positive relations with nonwork vertical individualism, one possibility is that due to the more cooperative nature of personal relationships outside of the work context, despite one's natural inclination to distinguish oneself and focus on individual objectives (i.e., an individualistic orientation), behaviors in which one is assertive may be incompatible with group norms in a nonwork context, thereby leading to behavioral modification. An alternative explanation, which is consistent with the positive correlation found between work-specific individualism and assertiveness, follows a compensatory model in which assertive people perform assertive behaviors in a work context, which reduces their availability in other contexts. In other words, one "uses up" all of one's capacity for being assertive at work, thereby leading to less emergence of this trait in nonwork settings. Nevertheless, more research is needed to elucidate the nature of these relations. Also of note is that many of the relations that did not reach significance at

the conservative alpha level used in the current studies (i.e., $p < .001$) were in the expected direction. Thus, these marginal effects provide some (albeit less conclusive) support for the construct validity of the contextualized culture measures.

Other interrelationships that emerged included positive links between vertical context-specific scales and competition, hierarchy orientation, and power distance orientation, as well as inverse associations between work-specific horizontal collectivism and both hypercompetitiveness and power distance orientation. In addition, several unexpected positive relations emerged between horizontal orientations and competitiveness, hierarchy orientation, and power distance orientation. As this is contradictory to the conceptualization of horizontalism, future research should further investigate these relations.

In addition, in examining the strength of relations, some support was found for differing work and nonwork culture measures in their relations with generalized culture measures, as, consistent with hypotheses, vertical and horizontal aspects of one's culture in nearly all cases were found to have non-significant differences in relations with corresponding noncontextual cultural variables. However, contrary to hypotheses, relations with measures of competitiveness, hierarchy perceptions, and power distance orientation were not significantly larger for work than nonwork scales or for vertical over horizontal cultural orientations. Also inconsistent with a priori predictions, work and nonwork values were found to have relations of similar magnitude with both work and nonwork cultural orientations.

As an additional index of convergent (as well as discriminant) validity, an assessment of the nature of each construct's shared variance was conducted. In the current study, items shared more variance with their respective latent traits than with other factors, thereby providing evidence for both convergent and discriminant validity. Finally, the incremental validity of the study measures was examined by investigating whether the newly developed context-specific measures predicted variance beyond that of other established scales. A series of analyses revealed that the contextualized measures added incrementally to various prediction equations, thereby providing additional support for the discriminant validity of these measures.

CHAPTER FOUR

GENERAL DISCUSSION

Utilizing a total sample of 1097 participants, in the two studies described here, work- and nonwork-specific measures of individualism and collectivism were developed and validated. Using a structural equation modeling approach, construct validity evidence was provided, establishing both the convergent and discriminant validity of these scales. Noteworthy is that across both studies method effects were small to moderate. Whereas method variance was greater in Study 1, the exclusion of additional measures likely inflated method effects, as commonalities in response tendencies across all items are more likely when measures tapping into highly related constructs are employed. Nevertheless, these two studies provided initial evidence as to the methodological strength of the newly developed measures.

As these studies are the first to consider contextual factors in the measurement of individualism and collectivism, the implications of this research are far-reaching. Namely, as most of the cross-domain correlations were small to moderate (i.e., as low as $r = .15$, *ns*, and $.21$, $p < .001$, for studies 1 and 2, respectively), support for the contextualization of these cultural variables was provided. Such contextual dependence could imply that these traits are malleable, which has strong implications in terms of training. More specifically, as culture has been linked to important outcomes (e.g., feedback-seeking behavior and prosocial values motives; Brutus & Greguras, 2008; Dávila de León & Finkelstein, 2011), the ability to modify one's cultural orientation could have wide-ranging effects. In addition, as the measures developed here are tailored

to specific contexts, the face validity of such measures is also likely to be greater than that of generalized measures that contain items encompassing a broader range of settings. Thus, these measures have the potential to induce more positive perceptions, especially in contexts in which tangible outcomes are attached (e.g., job applicant settings). Finally, as discussed previously, the greater specificity of these measures should allow for better targeted outcome prediction, thereby lending further support for the value of these newly developed measurement tools.

Limitations

Whereas the current studies were the first of their kind to develop and validate contextualized measures of individualism and collectivism, as with all research, this work was not free from limitations. One such limitation was the use of student samples, which may not be representative of the general population. However, study participants had, on average, three years of work experience, which increases the generalizability of study findings to working populations. In addition, this research was conducted in a concentrated area of the Southeastern region of the United States, in which cultural orientations are likely to be relatively homogeneous. However, limited cultural variability should have only attenuated relations, which suggests that these constructs may have even stronger relations with other variables than is suggested here. Nevertheless, future research should utilize samples with greater diversity (e.g., in regard to participant age and the geographic region in which the research is conducted) to cross-validate these findings. The use of all self-report data also poses a limitation, as this increases the threat of mono-method bias (see Donaldson & Grant-Vallone, 2002 for a review). However, the

specification of a method factor in the models examined in this study allowed for the measurement of this phenomenon, which was determined to have had only a small effect on participant responses. Additionally, as several items in the newly developed measures fell below commonly accepted standards for reliability (i.e., Cronbach's alpha = .70), further item refinement is needed. Finally, the nonwork-specific measures of individual culture developed across these two studies had a broad scope (e.g., the measures made reference to family, friends, and neighbors). As this generality may reduce the precision of these scales, future research should continue to refine these measures or even use these scales as a starting point for the creation of new measures specific to more tailored nonwork contexts (e.g., sports, social settings).

Future Research

As the research presented here takes a novel conceptualization of individual culture in which contextual factors are considered, the avenues for future research related to this topic are plentiful. In addition to the suggestions made above, studies examining the criterion-oriented validity of these measures in predicting a variety of work and nonwork outcomes would be of interest. For example, it would be fascinating to see how such measures would fare in the prediction of outcomes such as prosocial and antisocial behavior, as well as motivation in a variety of contexts. As motives for engaging in such non-normative behaviors can differ across contexts (e.g., the presence of instrumental motives in a work context in which tangible outcomes are attached to one's performance versus hostile motives in a nonwork context in which one's primary goal is to seek revenge or harm someone), tailored measurement of one's cultural values and

expectations in each context may lead to a better understanding of the precursors of such behaviors. Likewise, as previous research has demonstrated that one's cultural orientation may impact fairness perceptions (Schroeder & Rosopa, 2010), a further investigation into the impact of contextualized culture on one's perceptions is necessary. More specifically, the relation between one's contextualized cultural orientation and justice-related outcomes such as the acceptance of feedback (e.g., in performance appraisal systems) or the perceived appropriateness of organizational policies and procedures may shed light on individual responses to organizational systems. As such, future research in this area is warranted.

In addition, as opponents of contextualized measurement often cite increased socially desirable responding as a weakness of the frame of reference approach, research comparing the potential for participant faking across both contextualized and generalized cultural measures is encouraged. Finally, as the study of individual culture far surpasses the measurement of individualism and collectivism, future research should also investigate whether additional cultural constructs demonstrate contextualization. As contextualized measures such as those developed in the studies presented here may lead to a better understanding of individual cultural orientations, and as they have the potential to allow for the better prediction of targeted outcomes, future research in this area is both warranted and encouraged.

APPENDICES

Appendix A

Demographic Items

1. Age: _____
2. Gender: (circle one) Female Male
3. Ethnicity: (circle all that apply)
African American American Indian Asian American
Hawaiian/Pacific Islander Hispanic Origin White/Caucasian
Other: (Please specify) _____
4. Classification: (circle one) Freshman Sophomore Junior Senior Graduate
5. Amount of Work Experience: _____ years, _____ months
6. Number of Siblings: _____
7. State Where You Spent The Greatest Proportion Of Your Childhood: _____
8. Religious Belief: (circle one)
Buddhism Christianity Hinduism Islam
Judaism Rationalism (skepticism or no religion)
Other: (Please specify) _____
9. Parents' Combined Estimated Annual Income: (circle one)
Less than \$25,000/yr \$25,000/yr to \$49,999/yr
\$50,000/yr to \$74,999/yr \$75,000/yr to \$99,999/yr
\$100,000/yr to \$124,999/yr \$125,000/yr to \$149,999/yr
\$150,000/yr or more

Appendix A (Continued)

10. Your Estimated Annual Income: (circle one)

- | | |
|------------------------------|------------------------------|
| Less than \$25,000/yr | \$25,000/yr to \$49,999/yr |
| \$50,000/yr to \$74,999/yr | \$75,000/yr to \$99,999/yr |
| \$100,000/yr to \$124,999/yr | \$125,000/yr to \$149,999/yr |
| \$150,000/yr or more | |

Appendix B

Vertical Individualism Scale – Personal Domain

1. It annoys me when my friends or family members have more success in life than I do.
2. It is natural for friends to compete with each other.
3. When a close friend does something better than I do, I get tense and aroused.
4. Without competition, it is not possible to have a good society.
5. Winning is a huge concern in my personal life.
6. *It is very important that I am more successful than my friends.
7. It is very important that I am more successful than my family members.
8. I find satisfaction in competing with my friends.
9. I find satisfaction in competing with my family members.
10. I frequently compare myself to my friends.
11. I frequently compare myself to my family members.
12. *I enjoy being more accomplished than my friends.
13. I enjoy being more accomplished than my family members.
14. I enjoy participating in competitive sports and games with my friends.
15. I often form friendships with individuals who have high social status within my community.
16. When I need advice in my personal life, I usually rely on individuals who are successful.
17. Achieving success is the most important aspect of my life.
18. Having successful friends is important to getting ahead in life.
19. When my friends are successful, I feel pressured to be more accomplished.
20. When my family members are successful, I feel pressured to be more accomplished.
21. *I often compare myself to my friends to determine my personal standing in life.
22. I often compare myself to my family members to determine my personal standing in life.
23. *I take pride in having more accomplishments than others in my personal life.

* indicates the item was included in the revised scale.

Appendix C

Horizontal Individualism Scale – Personal Domain

1. *I like to do “my own thing” when it comes to my personal life.
2. One should live one’s life independently of friends.
3. One should live one’s life independently of family members.
4. *Personal privacy is important to me.
5. I prefer to be direct and forthright when discussing personal matters with those close to me.
6. *In many ways, I am different from my friends.
7. In many ways, I am different from my family members.
8. *I have control over my personal life.
9. My personal successes are my own doing.
10. *I value being unique and different from those close to me.
11. My personal identity is very important to me.
12. My opinions on certain issues are often different from my friends’ opinions.
13. My opinions on certain issues are often different from my family members’ opinions.
14. I am rarely influenced by the opinions of my family members.
15. I am rarely influenced by the opinions of my friends.
16. *I prefer to form my own opinions before discussing an issue with friends.
17. I prefer to form my own opinions before discussing an issue with family members.
18. I prefer to stand out rather than to blend in with others.
19. I prefer to make my own money instead of relying on my family.
20. I often try to handle personal problems without seeking help from friends.
21. I often try to handle personal problems without seeking help from family members.
22. I rarely conform to the social norms around me.
23. I value my personal space.
24. There are things in my personal life that I do not share with others.

* indicates the item was included in the revised scale.

Appendix D

Vertical Collectivism Scale – Personal Domain

1. *I would sacrifice an activity that I enjoy very much if my family did not approve of it.
2. I would do what would please my family, even if I detested that activity.
3. Before taking a major trip, I consult with members of my family and my friends.
4. I usually sacrifice my self-interest for the benefit of my family.
5. I usually sacrifice my self-interest for the benefit of my friends.
6. We should keep our aging parents with us at home.
7. Children should feel honored if their parents receive a distinguished award.
8. Children should be taught to place duty before pleasure.
9. I do not like to point out when my friends are wrong.
10. Family members should stick together, no matter what sacrifices are required.
11. It is my duty to take care of my family, even if I have to sacrifice my personal needs or desires.
12. I value the opinions of my family members and friends.
13. I often take the advice of my family members because they know what is best for me.
14. If I disagree with a family member, I usually keep my opinion to myself to avoid confrontation.
15. A sibling's failure reflects badly on the entire family.
16. *I would sacrifice my own personal goals if they were detrimental to my family's goals.
17. *Sacrifice is an important part of maintaining harmony within a family.
18. I live vicariously through my friends and family.

* indicates the item was included in the revised scale.

Appendix E

Horizontal Collectivism Scale – Personal Domain

1. The well being of my family is important to me.
2. The well being of my friends is important to me.
3. I feel proud about my friends' accomplishments.
4. *I feel proud about my family members' accomplishments.
5. If a relative were in financial difficulty, I would help within my means.
6. It is important to maintain harmony with family.
7. *It is important to maintain harmony with friends.
8. I like sharing little things with my neighbors or friends.
9. *I feel good when I cooperate with those in my personal life.
10. I can only be happy when those close to me are happy.
11. To me, pleasure is spending time with family.
12. To me, pleasure is spending time with friends.
13. I usually wear similar clothing styles as my friends.
14. I strive to maintain close relationships with my family members.
15. *I strive to maintain close relationships with my friends.
16. To me, pleasure is spending time with my friends.
17. To me, pleasure is spending time with my family.
18. I share many similarities with my friends.
19. I share many similarities with my family members.
20. *If a friend is in trouble, I feel obligated to help.
21. If a friend experiences failure, I feel somewhat responsible.
22. A family member's achievement should make the entire family proud.
23. A person is defined by the family or social groups to which he/she belongs.
24. My family is always my first priority.
25. *My family and friends are always welcome in my home.

* indicates the item was included in the revised scale.

Appendix F

Vertical Individualism Scale – Work Domain

1. I become irritated when a co-worker performs better than I do.
2. Competition is expected in organizations.
3. When someone at work is more successful than I am, I experience stress.
4. Organizations are more productive when employees compete with each other.
5. When it comes to work, winning is everything.
6. It is important that I do my job better than others.
7. I enjoy working in situations involving competition with others.
8. I emphasize winning in all my work endeavors.
9. If I were to own a business, I would prefer to choose my business partner.
10. When controversy develops in the workplace, I tend to consider which position will most likely benefit me in the future.
11. Success is earning power and prestige.
12. I prefer to be in a leadership role within my group.
13. *I work hard in hopes of receiving a promotion at work.
14. I enjoy receiving distinguished awards in my job.
15. My ideal job would be at a well-known and prestigious company.
16. *I prefer jobs that help me establish relationships with successful and powerful individuals.
17. *My competitive nature helps me succeed at work.
18. I do whatever it takes to succeed, even if it comes at the expense of others.
19. Job assignments should be allocated based on merit.
20. Some people are more deserving of job-related awards than others.
21. When I perform my job well, I expect to receive individual recognition.
22. My ideal job would be to own my own business.
23. *Competition drives innovation within organizations.

* indicates the item was included in the revised scale.

Appendix G

Horizontal Individualism Scale – Work Domain

1. I make my own decisions when it comes to work.
2. *I value my independence from my co-workers.
3. I often do not share my personal life with my co-workers.
4. My coworkers consider me to be a straightforward person.
5. *There are many ways in which I am unique in my work group.
6. *What happens to me at work is my own doing.
7. *When I am successful at work, it is because of my abilities.
8. I enjoy being unique and different from my coworkers.
9. I rarely rely on my co-workers.
10. At work, I prefer to have my own private office.
11. At work, I favor democratic decision-making processes.
12. I prefer to keep to myself at work.
13. I prefer working alone to working in a group.
14. It is important that organizations are made up of individuals with different skill sets.
15. Organizations are comprised of many unique employees.
16. The success of a work group is dependent on the abilities of each group member.
17. Expressing one's opinions can benefit a work group.
18. I am responsible for my success at work.

* indicates the item was included in the revised scale.

Appendix H

Vertical Collectivism Scale – Work Domain

1. If my work group does not like my idea, I am willing to change my ways.
2. *Sometimes it is more important that the group's needs are met, rather than my own personal needs.
3. Before making an important work-related decision, I discuss it with family.
4. Before making an important work-related decision, I discuss it with friends.
5. It is often better to put the organization's goals before your own.
6. *Employees should provide assistance to their less knowledgeable co-workers.
7. When an employee receives an achievement-related reward, it brings honor to the entire work group.
8. Fulfilling your work obligations is more important than having job satisfaction.
9. I hate to disagree with people at work.
10. I usually sacrifice my self-interest for the benefit of the group.
11. *It is important that I respect the decisions made by my group even if I do not agree with them.
12. If I disagree with a co-worker, I usually keep my opinion to myself to avoid confrontation.
13. An organization is only as strong as its weakest link.
14. *It is important that organizations are made up of diverse individuals working toward common goals.
15. My personal opinions are less important than the opinions of my work group or the organization as a whole.
16. Employees should capitalize on their differences to advance the goals of the organization.
17. It is the duty of high performing employees to assist their struggling co-workers.
18. Employees should work to be successful so they can honor their work group.
19. *Collaboration among individuals with varying skill sets is key to an organization's success.

* indicates the item was included in the revised scale.

Appendix I

Horizontal Collectivism Scale – Work Domain

1. *The well being of my co-workers is important to me.
2. *If a co-worker wins a prize, I would feel proud.
3. If a co-worker were in financial difficulty, I would provide as much help as I could.
4. It is best to avoid conflict within work groups.
5. I take pleasure in sharing little things with my co-workers.
6. It is important for individuals within an organization to work collaboratively.
7. My happiness depends very much on the happiness of the individuals with whom I work.
8. *I find enjoyment in working with my co-workers.
9. It is important to maintain harmony within work groups.
10. Cooperation in the workplace is more important than competition.
11. I enjoy working with groups that have common goals.
12. I tend to have close relationships with my fellow co-workers.
13. When my work group is not successful, I feel responsible.
14. Organizational rewards should be dispersed equally across employees.
15. I am very similar to others who have the same job as me.
16. I define myself as an employee by the performance of my work group.
17. There are few differences among employees of an organization.
18. I would be happy if organizational rewards were based on group performance, rather than individual performance.
19. Group-based decisions are often better than individual decisions.
20. *All employees within an organization are equally important.

* indicates the item was included in the revised scale.

Appendix J

Communal Orientation Scale

1. It bothers me when other people neglect my needs.
2. When making a decision, I take other people's needs and feelings into account.
3. I'm not especially sensitive to other people's feelings.[†]
4. I don't consider myself to be a particularly helpful person.[†]
5. I believe people should go out of their way to be helpful.
6. I don't especially enjoy giving others aid.[†]
7. I expect people I know to be responsive to my needs and feelings.
8. I often go out of my way to help another person.
9. I believe it's best not to get involved taking care of other people's personal needs.[†]
10. I'm not the sort of person who often comes to the aid of others.[†]
11. When I have a need, I turn to others I know for help.
12. When people get emotionally upset, I tend to avoid them.[†]
13. People should keep their troubles to themselves.[†]
14. When I have a need that others ignore, I'm hurt.

[†] indicates item was reverse coded.

Appendix K

Individuation Scale

1. Give a lecture to a large audience.
2. Raise your hand to ask a question in a meeting or lecture.
3. Volunteer to head a committee for a group of people you do not know very well.
4. Tell a person that you like him/her.
5. Publicly challenge a speaker whose position clashes with your own.
6. Accept a nomination to be a leader of a group.
7. Present a personal opinion, on a controversial issue, to a group of strangers.
8. When asked to introduce yourself, say something more personal about yourself than just your name and occupation.
9. Give an informal talk in front of a small group of classmates or colleagues.
10. Speak up about your ideas even though you are uncertain of whether you are correct.
11. Perform on a stage before a large audience.
12. Give your opinion on a controversial issue, even though no one has asked for it.

Appendix L

Aspects of Identity Questionnaire (AIQ-IV)

1. My personal values and moral standards
2. My popularity with other people
3. Being a part of the many generations of my family
4. My dreams and imagination
5. The ways in which other people react to what I say and do
6. My race or ethnic background
7. My personal goals and hopes for the future
8. My physical appearance: my height, my weight, and the shape of my body
9. My religion
10. My emotions and feelings
11. My reputation, what others think of me
12. Places where I live or where I was raised
13. My thoughts and ideas
14. My attractiveness to other people
15. My gestures and mannerisms, the impression I make on others
16. The ways I deal with my fears and anxieties
17. My social behavior, such as the way I act when meeting people
18. My feeling of being a unique person, being distinct from others
19. My relationships with the people I feel close to
20. My feeling of belonging to my community
21. Knowing that I continue to be essentially the same inside even though life involves
may external changes
22. Being a good friend to those I really care about
23. My self-knowledge, my ideas about what kind of person I really am
24. My commitment to being a concerned relationship partner
25. My feeling of pride in my country, being proud to be a citizen
26. Sharing significant experiences with my close friends
27. My personal self-evaluation, the private opinion I have of myself
28. Having mutually satisfying personal relationships
29. Connecting on an intimate level with another person
30. Developing caring relationships with others
31. My commitments on political issues or my political activities
32. My desire to understand the true thoughts and feelings of my best friend or romantic
partner
33. Having close bonds with other people
34. My language, such as my regional accent or dialect or a second language that I know
35. My feeling of connectedness with those I am close to

Appendix L (Continued)

Items within each subscale are as follows:

Personal Identity Orientation = 1, 4, 7, 10, 13, 16, 18, 21, 23, 27

Relational Identity Orientation = 19, 22, 24, 26, 28, 29, 30, 32, 33, 35

Social Identity Orientation = 2, 5, 8, 11, 14, 15, 17

Collective Identity Orientation = 3, 6, 9, 12, 20, 25, 31, 34

Appendix M

Collectivism, Individualism, and Relatedness Scales

Collectivism Scale

1. I would rather leave my group if I have to sacrifice my self interest for the group.[†]
2. I am prepared to do things for my group at any time, even though I have to sacrifice my own interest.
3. I don't sacrifice self interest for my group.[†]
4. I stick with my group even through difficulties.
5. I think it is more important to give priority to group interests rather than to personal ones.
6. I respect decisions made by my group.
7. I don't support my group when they are wrong.[†]

Agency Scale

1. I stick to my opinions even when others in my group don't support me.
2. I do things in my way regardless of what my group members expect me to do.
3. I don't think it necessary to act as fellow group members would prefer.
4. I base my actions more upon my own judgments than upon the decisions of my group.
5. I don't change my opinions in conformity with those of the majority.
6. I feel uneasy when my opinions are different from those of members of my group.[†]
7. I think it is desirable for the members of my group to have the same opinions.[†]

Assertiveness Scale

1. I don't say anything even when I am dissatisfied with a decision made by my group.[†]
2. I often pretend to agree with the majority opinion in my group.[†]
3. I state my opinions in my group only when I am confident that they are those which are endorsed by everyone.[†]
4. I assert my opposition when I disagree strongly with the members of my group.
5. I don't want to stand out in my group.[†]

Relatedness Scale

1. I feel like doing something for people in trouble because I can almost feel their pains.
2. I often do what I feel like doing without paying attention to others' feelings.[†]
3. I am not too concerned about other people's worries.[†]
4. I am not interested in other people's business.[†]

[†] indicates item was reverse coded.

Appendix N

Personal Development Competitive Attitude Scale (PDCAS)

1. I enjoy competition because it gives me a chance to discover my abilities.
2. Competition does not increase my awareness and understanding of myself and others.[†]
3. Competition can lead to the formation of friendship with others.
4. Competition is not a means of motivating me to bring out the best in myself.[†]
5. I enjoy competition because it tends to bring out the best in me rather than as a means of feeling better than others.
6. I do not find competition to be a very valuable means of learning about myself and others.[†]
7. I like competition because it teaches me a lot about myself.
8. I value competition because it helps me to be the best that I can be.
9. I find competition enjoyable because it lets me express my own potentials and abilities during competition.
10. Competition does not help me develop my abilities more.[†]
11. Without the challenge of competition I might never discover that I had certain potentials or abilities.
12. I enjoy competition because it brings me and my competitors closer together as human beings.
13. I enjoy competition because it helps me to develop my own potentials more fully than if I engaged in these activities alone.
14. I enjoy competition because it brings me to a higher level of motivation to bring the best out of myself rather than as a means of doing better than others.
15. Through competition I feel that I am contributing to the well-being of others.

[†] indicates item was reverse coded.

Appendix O

Hypercompetitive Attitude Scale (HAS)

1. Winning in competition makes me feel more powerful as a person.
2. I find myself being competitive even in situations which do not call for competition.
3. I do not see my opponents in competition as my enemies.[†]
4. I compete with others even if they are not competing with me.
5. Success in athletic competition does not make me feel superior to others.[†]
6. Winning in competition does not give me a greater sense of worth.[†]
7. When my competitors receive rewards for their accomplishments, I feel envy.
8. I find myself turning a friendly game or activity into a serious contest or conflict.
9. It's a dog-eat-dog world. If you don't get the better of others, they will surely get the better of you.
10. I do not mind giving credit to someone for doing something that I could have done just as well or better.[†]
11. If I can disturb my opponent in some way in order to get the edge in competition, I will do so.
12. I really feel down when I lose in athletic competition.
13. Gaining praise from others is not an important reason why I enter competitive situations.[†]
14. I like the challenge of getting someone to like me who is already going with someone else.
15. I do not view my relationships in competitive terms.[†]
16. It does not bother me to be passed by someone while I am driving on the roads.[†]
17. I can't stand to lose an argument.
18. In school, I do not feel superior whenever I do better on tests than other students.[†]
19. I feel no need to get even with a person who criticizes or makes me look bad in front of others.[†]
20. Losing in competition has little effect on me.[†]
21. Failure or loss in competition makes me feel less worthy as a person.
22. People who quit during competition are weak.
23. Competition inspires me to excel.
24. I do not try to win arguments with members of my family.[†]
25. I believe that you can be a nice guy and still win or be successful in competition.[†]
26. I do not find it difficult to be fully satisfied with my performance in a competitive situation.[†]

[†] indicates item was reverse coded.

Appendix P

Hierarchy versus Egalitarianism Scale

1. Social power
2. Authority
3. Preserving my public image
4. Wealth
5. Social recognition
6. Influential

Appendix Q

Power Distance Orientation Scale

1. Managers should make most decisions without consulting subordinates.
2. It is frequently necessary for a manager to use authority and power when dealing with subordinates.
3. Managers should seldom ask for the opinions of employees.
4. Managers should avoid off-the-job social contact with employees.
5. Employees should *not* disagree with management decisions.
6. Managers should *not* delegate important tasks to employees.

Appendix R

Work Aspect Preference Scale (WAPS)

1. Work in which you can do what has to be done as fast or slowly as you like
2. Work in which you have pleasant people to work with
3. Work in which you improve the skills you have
4. Work in which you design new things
5. Work in which you are paid a high salary
6. Work in which you are free to live wherever you like
7. Work in which you know that other people think your work is important
8. Work in which you help build a better society
9. Work in which you are certain of keeping your job
10. Work in which you plan and arrange the work of others
11. Work in which you are not required to do work in your spare time
12. Work in which you can do your own work in your own way
13. Work in which you get to know your fellow workers quite well
14. Work in which you add to the abilities you already have
15. Work in which you originate new ideas and/or products
16. Work in which you receive more than your normal pay for good work
17. Work in which you do not have to change the way you live
18. Work in which you can obtain high status in the eyes of others
19. Work in which you give aid to those in need
20. Work in which you can be sure you will always have a job
21. Work in which you set goals for workers to achieve
22. Work in which you can forget work while you are not there doing it
23. Work in which you can start and finish your work whenever you like
24. Work in which you are really liked by your fellow coworkers
25. Work in which you are always increasing your knowledge
26. Work in which you experiment with different ways of doing things
27. Work in which you become quite wealthy
28. Work in which you do not have to change any aspects of your way of life to suit the organization
29. Work in which you are looked up to by other people in the community
30. Work in which you help others to live a fuller life
31. Work in which you can be confident this type of work will always be available
32. Work in which you have authority over others
33. Work in which you do not have to think about work once you leave the workplace
34. Work in which you can determine the way your own work is done
35. Work in which you enjoy the company of the people you work with
36. Work in which you can acquire specialized skills
37. Work in which you use ideas, materials to develop new ideas, materials
38. Work in which you receive enough pay to live well
39. Work in which you can avoid moving your home because of your job

Appendix R (Continued)

40. Work in which you get a good reputation for your good work
41. Work in which you make an important contribution to the community
42. Work in which you have a secure future
43. Work in which you set out the best way for others to do a job
44. Work in which you can avoid doing extra work at home

Items within each subscale are as follows:

Independence = 1, 12, 23, 34

Coworkers = 2, 13, 24, 35

Self Development = 3, 14, 25, 36

Creativity = 4, 15, 26, 37

Money = 5, 16, 27, 38

Life Style = 6, 17, 28, 39

Prestige = 7, 18, 29, 40

Altruism = 8, 19, 30, 41

Security = 9, 20, 31, 42

Management = 10, 21, 32, 43

Detachment = 11, 22, 33, 44

Appendix S

Nonwork Aspect Preference Scale (NAPS)

1. Nonwork activities in which you can do what has to be done as fast or slowly as you like
2. Nonwork activities in which you have pleasant people to be with
3. Nonwork activities in which you improve the skills you have
4. Nonwork activities in which you design new things
5. Nonwork activities in which you know that other people think your activities are important
6. Nonwork activities in which you help build a better society
7. Nonwork activities in which you plan and arrange the activities of others
8. Nonwork activities in which you can do your own things in your own way
9. Nonwork activities in which you get to know those around you quite well
10. Nonwork activities in which you add to the abilities you already have
11. Nonwork activities in which you originate new ideas and/or products
12. Nonwork activities in which you can obtain high status in the eyes of others
13. Nonwork activities in which you give aid to those in need
14. Nonwork activities in which you set goals for others to achieve
15. Nonwork activities in which you can start and finish your activities whenever you like
16. Nonwork activities in which you are really liked by those around you
17. Nonwork activities in which you are always increasing your knowledge
18. Nonwork activities in which you experiment with different ways of doing things
19. Nonwork activities in which you are looked up to by other people in the community
20. Nonwork activities in which you help others to live a fuller life
21. Nonwork activities in which you have authority over others
22. Nonwork activities in which you can determine the way your own activities are done
23. Nonwork activities in which you enjoy the company of the people around you
24. Nonwork activities in which you can acquire specialized skills
25. Nonwork activities in which you use ideas, materials to develop new ideas, materials
26. Nonwork activities in which you get a good reputation for your activities
27. Nonwork activities in which you make an important contribution to the community
28. Nonwork activities in which you set out the best way for others to do things

Items within each subscale are as follows:

Independence = 1, 8, 15, 22

Peers = 2, 9, 16, 23

Self Development = 3, 10, 17, 24

Creativity = 4, 11, 18, 25

Prestige = 5, 12, 19, 26

Altruism = 6, 13, 20, 27

Management = 7, 14, 21, 28

Appendix T

Tables

Table 1

Fit Statistics for Hypothesized and Alternative Models

Variable	S-B χ^2	<i>df</i>	CFI	RMSEA	SRMSR	Δ CFI	Δ S-B χ^2
Model 1: Original 90-item personal context model	14452.22	3909	.50	.07	.09	-	-
Model 2: Original 90-item personal context model with method factor	12610.73	3819	.58	.06	.07	.083	1967.57*
Model 3: Original 80-item work context model	8508.11	3074	.51	.06	.10	-	-
Model 4: Original 80-item work context model with method factor	6089.70	2994	.72	.05	.06	.211	3709.46*
Model 5: Revised 36-item model	866.75	566	.92	.03	.05	-	-
Model 6: Revised 36-item model with method factor	734.17	530	.95	.03	.04	.025	132.27*

Note. Reported S-B χ^2 , CFI, and RMSEA are based on robust estimates. Δ S-B χ^2 refers to Satorra-Bentler scaled difference from the previous model. * denotes $p < .001$.

Table 2.1

Measurement Properties of Personal Context Items

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
HI-P		0.228	0.055			0.222
Item 1	0.292	0.085		0.479	0.229	
Item 4	0.228	0.052		0.459	0.211	
Item 6	0.351	0.123		0.489	0.239	
Item 8	0.071	0.005		0.435	0.189	
Item 10	0.187	0.035		0.569	0.324	
Item 16	0.165	0.027		0.375	0.141	
VI-P		0.795	0.493			0.047
Item 6	0.697	0.486		0.139	0.019	
Item 12	0.765	0.585		0.264	0.070	
Item 21	0.653	0.426		0.092	0.008	
Item 23	0.688	0.473		0.300	0.090	
HC-P		0.708	0.289			0.204
Item 4	0.463	0.214		0.502	0.252	
Item 7	0.594	0.353		0.465	0.216	
Item 9	0.491	0.241		0.569	0.324	
Item 15	0.609	0.371		0.399	0.159	
Item 20	0.541	0.293		0.368	0.135	
Item 25	0.514	0.264		0.373	0.139	
VC-P		0.661	0.405			0.008
Item 1	0.479	0.229		-0.051	0.003	
Item 16	0.799	0.638		0.041	0.002	
Item 17	0.588	0.346		0.136	0.018	

Note. Composite reliabilities are in bold. AVE = average variance extracted.

Table 2.2

Measurement Properties of Work Context Items

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
HI-W		0.297	0.119			0.275
Item 2	0.069	0.005		0.484	0.234	
Item 5	0.252	0.064		0.605	0.366	
Item 6	0.488	0.238		0.458	0.210	
Item 7	0.411	0.169		0.538	0.289	
VI-W		0.572	0.259			0.178
Item 13	0.383	0.147		0.456	0.208	
Item 16	0.463	0.214		0.420	0.176	
Item 17	0.675	0.456		0.411	0.169	
Item 23	0.469	0.220		0.397	0.158	
HC-W		0.566	0.251			0.124
Item 1	0.598	0.358		0.419	0.176	
Item 2	0.537	0.288		0.359	0.129	
Item 8	0.461	0.213		0.385	0.148	
Item 20	0.381	0.145		0.206	0.042	
VC-W		0.540	0.193			0.240
Item 2	0.370	0.137		0.537	0.288	
Item 6	0.397	0.158		0.441	0.194	
Item 11	0.471	0.222		0.435	0.189	
Item 14	0.534	0.285		0.490	0.240	
Item 19	0.404	0.163		0.536	0.287	

Note. Composite reliabilities are in bold. AVE = average variance extracted.

Table 3

Latent Factor Correlations

Variable	1	2	3	4	5	6	7	8
1. HI-P	(.235)							
2. HC-P	-.916*	(.538)						
3. VI-P	-.036	-.218 [†]	(.702)					
4. VC-P	-.303	.294*	.132	(.636)				
5. HI-W	-.836 [†]	-.144	-.276 [†]	-.226	(.345)			
6. HC-W	-.687*	.525*	-.330*	.202	-.150	(.501)		
7. VI-W	-.729*	.061	.277*	.038	.147	-.153	(.509)	
8. VC-W	-.714 [†]	.445 [†]	-.350*	.152	.042	.648*	.003	(.439)

Note. The square root of the AVE for each trait is reported in the main diagonal.

* denotes $p < .001$. [†] denotes $p < .01$.

Table 4

Comparison of Interrater Reliability

Interrater combination ($C_{a/b}$) ¹	Interrater Agreement %	Cohen's kappa
C _{1/2}	67 (56)	.61 (.49)
C _{1/3}	64 (54)	.58 (.47)
C _{1/4}	47 (49)	.39 (.40)
C _{1/5}	44 (45)	.36 (.36)
C _{2/3}	81 (74)	.77 (.69)
C _{2/4}	56 (59)	.47 (.51)
C _{2/5}	61 (56)	.55 (.49)
C _{3/4}	69 (66)	.64 (.60)
C _{3/5}	67 (65)	.61 (.60)
C _{4/5}	61 (48)	.54 (.40)

Note. Statistics reported in parentheses are based on all 170 original items. ¹ Total number of judgments = 36 (170).

Table 5.1

Overall Placement Ratios – Personal Context Items

Item	%	Item	%	Item	%	Item	%
VI-P1	100	*HI-P1	40	*VC-P1	80	HC-P1	60
VI-P2	80	HI-P2	20	VC-P2	100	HC-P2	60
VI-P3	80	HI-P3	40	VC-P3	20	HC-P3	60
VI-P4	40	*HI-P4	40	VC-P4	100	*HC-P4	40
VI-P5	80	HI-P5	60	VC-P5	60	HC-P5	20
*VI-P6	80	*HI-P6	0	VC-P6	100	HC-P6	80
VI-P7	40	HI-P7	20	VC-P7	60	*HC-P7	80
VI-P8	100	*HI-P8	40	VC-P8	80	HC-P8	60
VI-P9	100	HI-P9	20	VC-P9	20	*HC-P9	60
VI-P10	100	*HI-P10	20	VC-P10	80	HC-P10	100
VI-P11	60	HI-P11	20	VC-P11	80	HC-P11	100
*VI-P12	100	HI-P12	40	VC-P12	40	HC-P12	100
VI-P13	80	HI-P13	0	VC-P13	40	HC-P13	80
VI-P14	100	HI-P14	20	VC-P14	40	HC-P14	80
VI-P15	40	HI-P15	20	VC-P15	0	*HC-P15	100
VI-P16	0	*HI-P16	20	*VC-P16	100	HC-P16	100
VI-P17	40	HI-P17	20	*VC-P17	100	HC-P17	100
VI-P18	20	HI-P18	0	VC-P18	40	HC-P18	80
VI-P19	60	HI-P19	0			HC-P19	80
VI-P20	40	HI-P20	40			*HC-P20	20
*VI-P21	80	HI-P21	20			HC-P21	40
VI-P22	60	HI-P22	0			HC-P22	40
*VI-P23	100	HI-P23	40			HC-P23	100
		HI-P24	20			HC-P24	80
						*HC-P25	100
Average	90.0 (68.7)	Average	26.7 (23.5)	Average	93.3 (63.3)	Average	66.7 (71.3)

Note. Items meeting Moore and Benbasat's (1991) minimum OPR standards are denoted in bold. Averages are based on the inclusion of only the retained items. Averages reported in parentheses are based on all original scale items. * denotes the item was included in the revised scale.

Table 5.2

Overall Placement Ratios – Work Context Items

Item	%	Item	%	Item	%	Item	%
VI-W1	80	HI-W1	20	VC-W1	60	*HC-W1	80
VI-W2	80	*HI-W2	0	*VC-W2	20	*HC-W2	60
VI-W3	60	HI-W3	20	VC-W3	0	HC-W3	40
VI-W4	80	HI-W4	40	VC-W4	0	HC-W4	80
VI-W5	100	*HI-W5	0	VC-W5	40	HC-W5	80
VI-W6	100	*HI-W6	20	*VC-W6	80	HC-W6	40
VI-W7	100	*HI-W7	0	VC-W7	20	HC-W7	80
VI-W8	100	HI-W8	20	VC-W8	60	*HC-W8	100
VI-W9	20	HI-W9	20	VC-W9	0	HC-W9	60
VI-W10	100	HI-W10	0	VC-W10	40	HC-W10	100
VI-W11	100	HI-W11	20	*VC-W11	60	HC-W11	100
VI-W12	60	HI-W12	40	VC-W12	40	HC-W12	100
*VI-W13	80	HI-W13	20	VC-W13	80	HC-W13	20
VI-W14	100	HI-W14	40	*VC-W14	80	HC-W14	60
VI-W15	100	HI-W15	0	VC-W15	40	HC-W15	40
*VI-W16	80	HI-W16	0	VC-W16	60	HC-W16	60
*VI-W17	100	HI-W17	20	VC-W17	80	HC-W17	80
VI-W18	80	HI-W18	20	VC-W18	40	HC-W18	80
VI-W19	100			*VC-W19	100	HC-W19	60
VI-W20	100					*HC-W20	40
VI-W21	80						
VI-W22	80						
*VI-W23	80						
Average	85.0 (85.2)	Average	5.0 (16.7)	Average	68.0 (47.4)	Average	70.0 (68.0)

Note. Items meeting Moore and Benbasat's (1991) minimum OPR standards are denoted in bold. Averages are based on the inclusion of only the retained items. Averages reported in parentheses are based on all original scale items. * denotes the item was included in the revised scale.

Table 6

Hypothesized Relations among Newly Developed Scales and Conceptual Domain One Measures

	COS	Indiv	AIQ-P	AIQ-R	AIQ-S	AIQ-C	Collect	Agency	Assert	Relate
HI-W		+ ^a	+ ^a					+ ^a	+ ^a	
HI-P		+	+					+	+	
VI-W		+ ^a	+ ^a					+ ^a	+ ^a	
VI-P		+	+					+	+	
HC-W	+ ^a			+ ^a	+ ^a	+ ^a	+ ^a			+ ^a
HC-P	+			+	+	+	+			+
VC-W	+ ^a			+ ^a	+ ^a	+ ^a	+ ^a			+ ^a
VC-P	+			+	+	+	+			+

Note. Covariances in shaded (unshaded) cells within the individualism and collectivism constructs are hypothesized non-significant differences. COS = communal orientation scale; Indiv = individuation; Collect = collectivism; Assert = assertiveness; Relate = relatedness. ^aCovariance is included in the set of covariances expected to be significantly smaller than the set of non-denoted covariances. + denotes a hypothesized positive covariance. - denotes a hypothesized negative covariance.

Table 7

Hypothesized Relations among Newly Developed Scales and Conceptual Domain Two Measures

	PDCAS	HAS	Hier	PD
HI-W	- ^{bb}	- ^{bb}	- ^{bb}	- ^{bb}
HI-P	- ^{bb}	- ^{bb}	- ^{bb}	- ^{bb}
VI-W	+ ^{aa}	+ ^{aa}	+ ^{aa}	+ ^{aa}
VI-P	+ ^{aa}	+ ^{aa}	+ ^{aa}	+ ^{aa}
HC-W	- ^b	- ^b	- ^b	- ^b
HC-P	- ^b	- ^b	- ^b	- ^b
VC-W	+ ^a	+ ^a	+ ^a	+ ^a
VC-P	+ ^a	+ ^a	+ ^a	+ ^a

Note. Covariances in shaded cells are hypothesized to be significantly larger than covariances in non-shaded cells. Hier = hierarchy; PD = power distance. ^{aa} Covariance is included in the set of covariances expected to be significantly larger than the set of covariances marked with the ^a denotation. ^{bb} Covariance is included in the set of covariances expected to be significantly larger than the set of covariances marked with the ^b denotation. + denotes a hypothesized positive covariance. - denotes a hypothesized negative covariance.

Table 8

Fit Statistics for Hypothesized and Alternative Culture Models

Variable	S-B χ^2	df	CFI	RMSEA	SRMSR	Δ CFI	Δ S-B χ^2
Model 1a: Context-specific culture model	1088.86	566	.88	.05	.06	-	-
Model 1b: Context-specific culture model with method factor	925.68	530	.91	.04	.05	.03	168.92* ^a
Model 1c: Revised context-specific culture model with method factor (one specified error covariance)	858.06	529	.93	.04	.04	.02	33.25* ^b
Model 2a: Revised context-specific culture model with method factor and second-order individualism-collectivism factor	923.94	549	.91	.04	.05	.01	-67.26* ^c
Model 2b: Revised context-specific culture model with method factor and second-order individualism and collectivism factors	923.81	548	.91	.04	.05	.01	-67.13* ^c
Model 2c: Revised context-specific culture model with method factor and second-order horizontalism and verticalism factors	914.38	548	.92	.04	.05	.02	-58.32* ^c
Model 2d: Revised context-specific culture model with method factor and second-order work and nonwork factors	923.70	548	.91	.04	.05	.01	-66.89* ^c
Model 2: Revised corresponding measures model with method factor	2017.36	1293	.91	.04	.05	-	-

Table 8 (Continued)

Variable	S-B χ^2	<i>df</i>	CFI	RMSEA	SRMSR	Δ CFI	Δ S-B χ^2
Model 3a: Full model with method factor	5853.61	3770	.86	.04	.05	-	-
Model 3b: Revised full model with method factor	5166.69	3399	.88	.03	.05	.02	685.23* ^d

Note. Reported S-B χ^2 , CFI, and RMSEA are based on robust estimates. Δ S-B χ^2 refers to Satorra-Bentler scaled difference. * denotes $p < .001$. ^a denotes model was compared to model 1a. ^b denotes model was compared to model 1b. ^c denotes model was compared to model 1c. ^d denotes model was compared to model 3a.

Table 9

Fit Statistics for Hypothesized and Alternative Values Models

Variable	S-B χ^2	df	CFI	RMSEA	SRMSR	Δ CFI	Δ S-B χ^2
Model 1: WAPS and NAPS dual second-order factors model	3853.83	1681	.85	.05	.09	.09	-1378.71
Model 2: WAPS and NAPS single second-order factor model	3969.64	1682	.84	.06	.10	.10	-1487.85
Model 3: WAPS and NAPS first-order factors model	2404.15	1563	.94	.04	.04	-	-

Note. Reported S-B χ^2 , CFI, and RMSEA are based on robust estimates. Δ S-B χ^2 refers to Satorra-Bentler scaled difference from Model 3. * denotes $p < .001$.

Table 10

Statistical Justification for Removing Items

Item	Unreliable	Multi-dimensional	Unreliable & Multi-dimensional	Error Covariance
Agency Item 1		✓(Assert)		
Agency Item 5		✓(Assert)		
Agency Item 6			✓(Assert)	
Agency Item 7			✓(Assert)	
AIQ Item 1 (Personal)	✓			
AIQ Item 10 (Personal)			✓(AIQ-C)	
AIQ Item 13 (Personal)		✓(Assert)		
AIQ Item 16 (Personal)	✓			
AIQ Item 21 (Personal)			✓(Assert)	
AIQ Item 22 (Relational)	✓			
AIQ Item 28 (Relational)				✓(AIQ-R)
AIQ Item 8 (Social)			✓(Relate)	
AIQ Item 15 (Social)			✓(AIQ-P)	
AIQ Item 17 (Social)		✓(AIQ-P)		
AIQ Item 9 (Collective)	✓			
AIQ Item 20 (Collective)				✓(AIQ-R)
Assertiveness Item 3		✓(AIQ-S)		
Collectivism Item 1		✓(AIQ-P)		
Collectivism Item 4			✓(Assert)	
Collectivism Item 6	✓			
Collectivism Item 7	✓			
COS Item 1	✓			
COS Item 5				✓(COS)

Table 10 (Continued)

Item	Unreliable	Multi-dimensional	Unreliable & Multi-dimensional	Error Covariance
COS Item 7	✓			
COS Item 11	✓			
COS Item 14	✓			
HAS Item 2		✓(PDCAS)		
HAS Item 4				✓(HAS)
HAS Item 6				✓(HAS)
HAS Item 10	✓			
HAS Item 13			✓(AIQ-S)	
HAS Item 14	✓			
HAS Item 15	✓			
HAS Item 16	✓			
HAS Item 22		✓(PDCAS)		
HAS Item 23			✓(PDCAS)	
HAS Item 24	✓			
HAS Item 25	✓			
HAS Item 26	✓			
Hierarchy Item 2			✓(HAS)	
Hierarchy Item 4		✓(Relate)		
Hierarchy Item 6		✓(AIQ-P)		
HI-P Item 3		✓(AIQ-C)		
HI-P Item 4		✓(AIQ-C)		
HI-P Item 5				✓(AIQ-P)
Individuation Item 3				✓(Indiv)
Individuation Item 5				✓(Indiv)

Table 10 (Continued)

Item	Unreliable	Multi-dimensional	Unreliable & Multi-dimensional	Error Covariance
Individuation Item 11				✓(Indiv)
Individuation Item 12				✓(Indiv)
NAPS 3 (Self Development)				✓(NAPS)
NAPS 6 (Altruism)		✓(NAPS-Pres)		
NAPS 9 (Peers)		✓(NAPS-Alt)		
NAPS 12 (Prestige)		✓(NAPS-Alt)		
NAPS 21 (Management)		✓(NAPS-Alt & Pres)		
PDCAS Item 7			✓(Hier)	
Power Distance Item 2	✓			
VI-W Item 1		✓(AIQ-P)		
WAPS 23 (Independence)		✓(WAPS-Det)		
WAPS 2 (Coworkers)			✓(NAPS-Peer)	
WAPS 26 (Creativity)		✓(WAPS-Self)		
WAPS 38 (Money)		✓(WAPS-Sec)		
WAPS 7 (Prestige)	✓			
WAPS 18 (Prestige)*				
WAPS 29 (Prestige)	✓			
WAPS 40 (Prestige)	✓			
WAPS 43 (Management)				✓(NAPS)

* Item was removed due to large method loading and because it was the sole remaining WAPS-Prestige item.

Table 11

Measurement Properties of Study Two Scales

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
HI-P ¹		0.567	0.309			0.018
Item 1	0.598	0.358		0.079	0.006	
Item 4	0.619	0.383		0.164	0.027	
Item 16	0.431	0.186		0.143	0.020	
HC-P ¹		0.839	0.471			0.004
Item 4	0.499	0.249		0.091	0.008	
Item 7	0.746	0.557		0.078	0.006	
Item 9	0.696	0.484		0.059	0.003	
Item 15	0.805	0.648		0.026	0.001	
Item 20	0.720	0.518		0.004	0.000	
Item 25	0.608	0.370		0.069	0.005	
VI-P ¹		0.876	0.639			0.012
Item 6	0.794	0.630		0.069	0.005	
Item 12	0.877	0.769		0.100	0.010	
Item 21	0.716	0.513		0.167	0.028	
Item 23	0.803	0.645		0.067	0.004	
VC-P ¹		0.750	0.503			0.000
Item 1	0.705	0.497		0.007	0.000	
Item 16	0.802	0.643		0.019	0.000	
Item 17	0.607	0.368		0.027	0.001	

Table 11 (Continued)

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
HI-W ¹		0.622	0.304			0.011
Item 2	0.546	0.298		0.045	0.002	
Item 5	0.742	0.551		0.060	0.004	
Item 6	0.424	0.180		0.169	0.029	
Item 7	0.431	0.186		0.091	0.008	
HC-W ¹		0.785	0.486			0.027
Item 1	0.746	0.557		0.137	0.019	
Item 2	0.748	0.560		0.233	0.054	
Item 8	0.780	0.608		0.064	0.004	
Item 20	0.469	0.220		0.175	0.031	
VI-W ¹		0.794	0.572			0.001
Item 16	0.531	0.282		0.040	0.002	
Item 17	0.870	0.757		0.010	0.000	
Item 23	0.823	0.677		0.036	0.001	
VC-W ¹		0.719	0.341			0.006
Item 2	0.673	0.453		0.005	0.000	
Item 6	0.553	0.306		0.053	0.003	
Item 11	0.511	0.261		0.147	0.022	
Item 14	0.549	0.301		0.060	0.004	
Item 19	0.619	0.383		0.011	0.000	

Table 11 (Continued)

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
Communal Orientation ²		0.843	0.376			0.006
Item 2	0.524	0.275		0.017	0.000	
Item 3	0.674	0.454		0.067	0.004	
Item 4	0.595	0.354		0.066	0.004	
Item 6	0.690	0.476		0.004	0.000	
Item 8	0.524	0.275		0.064	0.004	
Item 9	0.647	0.419		0.127	0.016	
Item 10	0.536	0.287		0.030	0.001	
Item 12	0.631	0.398		0.074	0.005	
Item 13	0.666	0.444		0.136	0.018	
Individuation ³		0.826	0.380			0.023
Item 1	0.633	0.401		0.144	0.021	
Item 2	0.631	0.398		0.019	0.000	
Item 4	0.365	0.133		0.160	0.026	
Item 6	0.687	0.472		0.054	0.003	
Item 7	0.666	0.444		0.192	0.037	
Item 8	0.532	0.283		0.112	0.013	
Item 9	0.744	0.554		0.035	0.001	
Item 10	0.596	0.355		0.293	0.086	

Table 11 (Continued)

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
AIQ – Personal ³		0.708	0.328			0.014
AIQ Item 4	0.554	0.307		0.046	0.002	
AIQ Item 7	0.586	0.343		0.181	0.033	
AIQ Item 18	0.503	0.253		0.032	0.001	
AIQ Item 23	0.656	0.430		0.123	0.015	
AIQ Item 27	0.554	0.307		0.141	0.020	
AIQ – Relational ³		0.839	0.566			0.021
AIQ Item 19	0.658	0.433		0.210	0.044	
AIQ Item 24	0.585	0.342		0.080	0.006	
AIQ Item 26	0.559	0.312		0.012	0.000	
AIQ Item 29	0.621	0.386		0.039	0.002	
AIQ Item 30	0.785	0.616		0.142	0.020	
AIQ Item 32	0.710	0.504		0.082	0.007	
AIQ Item 33	0.761	0.579		0.133	0.018	
AIQ Item 35	0.752	0.566		0.199	0.040	
AIQ – Social ³		0.813	0.523			0.006
AIQ Item 2	0.724	0.524		0.001	0.000	
AIQ Item 5	0.626	0.392		0.105	0.011	
AIQ Item 11	0.791	0.626		0.108	0.012	
AIQ Item 14	0.741	0.549		0.028	0.001	

Table 11 (Continued)

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
AIQ – Collective ³		0.594	0.335			0.019
AIQ Item 3	0.413	0.171		0.066	0.004	
AIQ Item 6	0.554	0.307		0.157	0.025	
AIQ Item 12	0.518	0.268		0.054	0.003	
AIQ Item 25	0.505	0.255		0.049	0.002	
AIQ Item 31	0.487	0.237		0.188	0.035	
AIQ Item 34	0.717	0.514		0.135	0.018	
Collectivism ³		0.719	0.470			0.010
Item 2	0.838	0.702		0.079	0.006	
Item 3	0.655	0.429		0.110	0.012	
Item 5	0.527	0.278		0.103	0.011	
Agency ³		0.781	0.544			0.049
Item 2	0.716	0.513		0.224	0.050	
Item 3	0.780	0.608		0.271	0.073	
Item 4	0.714	0.510		0.151	0.023	
Assertiveness ³		0.734	0.421			0.012
Item 1	0.726	0.527		0.182	0.033	
Item 2	0.791	0.626		0.078	0.006	
Item 4	0.396	0.157		0.019	0.000	
Item 5	0.612	0.375		0.095	0.009	

Table 11 (Continued)

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
Relatedness ³		0.555	0.248			0.075
Item 1	0.369	0.136		0.014	0.000	
Item 2	0.518	0.268		0.385	0.148	
Item 3	0.664	0.441		0.304	0.092	
Item 4	0.385	0.148		0.245	0.060	
PDCAS ³		0.920	0.459			0.031
Item 1	0.787	0.619		0.111	0.012	
Item 2	0.477	0.228		0.266	0.071	
Item 3	0.613	0.376		0.028	0.001	
Item 4	0.497	0.247		0.290	0.084	
Item 5	0.679	0.461		0.160	0.026	
Item 6	0.559	0.312		0.216	0.047	
Item 8	0.849	0.721		0.023	0.001	
Item 9	0.855	0.731		0.083	0.007	
Item 10	0.650	0.423		0.255	0.065	
Item 11	0.636	0.404		0.073	0.005	
Item 12	0.673	0.453		0.140	0.020	
Item 13	0.791	0.626		0.040	0.002	
Item 14	0.768	0.590		0.101	0.010	
Item 15	0.483	0.233		0.281	0.079	

Table 11 (Continued)

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
HAS ³		0.828	0.275			0.060
Item 1	0.563	0.317		0.038	0.001	
Item 3	0.376	0.141		0.071	0.005	
Item 5	0.553	0.306		0.334	0.112	
Item 7	0.564	0.318		0.080	0.006	
Item 8	0.588	0.346		0.314	0.099	
Item 9	0.579	0.335		0.350	0.123	
Item 11	0.478	0.228		0.425	0.181	
Item 12	0.547	0.299		0.044	0.002	
Item 17	0.414	0.171		0.060	0.004	
Item 18	0.408	0.166		0.350	0.123	
Item 19	0.443	0.196		0.103	0.011	
Item 20	0.664	0.441		0.347	0.120	
Item 21	0.551	0.304		0.013	0.000	
Hierarchy ³		0.715	0.455			0.017
Item 1	0.641	0.411		0.165	0.027	
Item 3	0.697	0.486		0.080	0.006	
Item 5	0.685	0.469		0.131	0.017	

Table 11 (Continued)

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
Power Distance ³		0.599	0.235			0.087
Item 1	0.414	0.171		0.247	0.061	
Item 3	0.626	0.392		0.377	0.142	
Item 4	0.492	0.242		0.081	0.007	
Item 5	0.460	0.212		0.251	0.063	
Item 6	0.400	0.160		0.404	0.163	
WAPS - Independence ²		0.748	0.513			0.014
Item 1	0.442	0.195		0.086	0.007	
Item 12	0.810	0.656		0.093	0.009	
Item 34	0.830	0.689		0.159	0.025	
WAPS - Coworkers ²		0.799	0.572			0.080
Item 13	0.776	0.602		0.074	0.005	
Item 24	0.683	0.466		0.465	0.216	
Item 35	0.804	0.646		0.138	0.019	
WAPS - Self Development ²		0.847	0.580			0.001
Item 3	0.738	0.545		0.014	0.000	
Item 14	0.789	0.623		0.045	0.002	
Item 25	0.792	0.627		0.011	0.000	
Item 36	0.726	0.527		0.039	0.002	

Table 11 (Continued)

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
WAPS - Creativity ²		0.890	0.730			0.005
Item 4	0.789	0.623		0.093	0.009	
Item 15	0.903	0.815		0.073	0.005	
Item 37	0.867	0.752		0.033	0.001	
WAPS - Money ²		0.732	0.479			0.206
Item 5	0.728	0.530		0.480	0.230	
Item 16	0.579	0.335		0.356	0.127	
Item 27	0.757	0.573		0.511	0.261	
WAPS - Life Style ²		0.700	0.374			0.078
Item 6	0.486	0.236		0.293	0.086	
Item 17	0.689	0.475		0.270	0.073	
Item 28	0.707	0.500		0.289	0.084	
Item 39	0.535	0.286		0.267	0.071	
WAPS - Altruism ²		0.876	0.639			0.010
Item 8	0.713	0.508		0.060	0.004	
Item 19	0.801	0.642		0.109	0.012	
Item 30	0.860	0.740		0.058	0.003	
Item 41	0.817	0.667		0.150	0.023	
WAPS - Security ²		0.834	0.559			0.109
Item 9	0.768	0.590		0.290	0.084	
Item 20	0.830	0.689		0.337	0.114	
Item 31	0.714	0.510		0.291	0.085	
Item 42	0.669	0.448		0.391	0.153	

Table 11 (Continued)

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
WAPS - Management ²		0.749	0.500			0.087
Item 10	0.736	0.542		0.249	0.062	
Item 21	0.742	0.551		0.273	0.075	
Item 32	0.638	0.407		0.354	0.125	
WAPS - Detachment ²		0.852	0.593			0.066
Item 11	0.645	0.416		0.294	0.086	
Item 22	0.766	0.587		0.196	0.038	
Item 33	0.866	0.750		0.199	0.040	
Item 44	0.787	0.619		0.317	0.100	
NAPS - Independence ²		0.754	0.435			0.018
Item 1	0.585	0.342		0.069	0.005	
Item 8	0.668	0.446		0.051	0.003	
Item 15	0.712	0.507		0.157	0.025	
Item 22	0.668	0.446		0.199	0.040	
NAPS - Peers ²		0.739	0.491			0.103
Item 2	0.750	0.563		0.155	0.024	
Item 16	0.561	0.315		0.532	0.283	
Item 23	0.771	0.594		0.055	0.003	
NAPS - Self Development ²		0.827	0.614			0.011
Item 10	0.747	0.558		0.018	0.000	
Item 17	0.817	0.667		0.089	0.008	
Item 24	0.786	0.618		0.153	0.023	

Table 11 (Continued)

Construct and indicators	Trait			Method		
	Standardized loading	Reliability	AVE	Standardized loading	Reliability	AVE
NAPS - Creativity ²		0.882	0.653			0.007
Item 4	0.774	0.599		0.125	0.016	
Item 11	0.857	0.734		0.093	0.009	
Item 18	0.745	0.555		0.049	0.002	
Item 25	0.850	0.723		0.036	0.001	
NAPS - Prestige ²		0.632	0.368			0.115
Item 5	0.650	0.423		0.274	0.075	
Item 19	0.659	0.434		0.306	0.094	
Item 26	0.497	0.247		0.419	0.176	
NAPS - Altruism ²		0.867	0.685			0.011
Item 13	0.786	0.618		0.021	0.000	
Item 20	0.838	0.702		0.136	0.018	
Item 27	0.857	0.734		0.122	0.015	
NAPS - Management ²		0.783	0.548			0.046
Item 7	0.682	0.465		0.169	0.029	
Item 14	0.820	0.672		0.190	0.036	
Item 28	0.711	0.506		0.273	0.075	

Note. Composite reliabilities are in bold. AVE = average variance extracted. ¹ denotes estimates are based on the revised full measurement model. ² denotes estimates are based on a measurement model including the COS, WAPS, and NAPS. ³ denotes estimates are based on a measurement model including the individuation, AIQ, collectivism, agency, assertiveness, relatedness, PDCAS, HAS, hierarchy, and power distance scales.

Table 12

Factor Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11
1. HI-P	(.556)										
2. HC-P	.079	(.686)									
3. VI-P	.377*	-.064	(.799)								
4. VC-P	.130	.234*	.090	(.709)							
5. HI-W	.587*	.331*	.266*	.077	(.551)						
6. HC-W	.072	.622*	-.158	.189	.428*	(.697)					
7. VI-W	.201	.320*	.313*	.102	.527*	.306*	(.756)				
8. VC-W	.246*	.612*	-.005	.212*	.478*	.715*	.317*	(.584)			
9. COS	-.096	.496*	-.314*	.124	.144	.497*	.052	.429*	(.613)		
10. Indiv	-.007	.169*	-.047	-.065	.246*	.239*	.228*	.166	.191*	(.616)	
11. AIQ-P	.547*	.433*	.119	.008	.540*	.485*	.344*	.490*	.320*	.317*	(.573)
12. AIQ-R	.161	.681*	-.065	.129	.323*	.485*	.224*	.484*	.486*	.203*	.615*
13. AIQ-S	.173	.163	.468*	.135	.115	.134	.250*	.138	-.004	-.032	.268*
14. AIQ-C	.277*	.176	.126	.306*	.242*	.182	.268*	.188	.004	.044	.451*
15. Collect	.005	.203*	.031	.234*	.179	.170	.145	.330*	.188*	.108	.072

Table 12 (Continued)

Variable	1	2	3	4	5	6	7	8	9	10	11
16. Agency	.109	-.112	.127	-.089	.052	-.100	.016	-.152	-.147	.105	.102
17. Assert	.053	.220*	-.169*	-.076	.274*	.228*	.194*	.199*	.293*	.442*	.250*
18. Relate	-.121	.426*	-.223*	.210	.094	.472*	-.050	.402*	.772*	.142	.287*
19. PDCAS	.057	.144	.117	.015	.259*	.228*	.620*	.194*	.074	.202*	.219*
20. HAS	.236*	-.155	.594*	-.004	.161	-.273*	.428*	-.182	-.392*	.025	-.047
21. Hier	.169	.190*	.438*	.037	.169	.037	.348*	.055	-.035	.070	.246*
22. PD	.015	-.167	.268*	.169	-.014	-.246*	.061	-.193	-.343*	-.084	-.060
23. WAPS-Ind	.422*	.089	.225*	.067	.253*	.040	.126	.116	-.121	-.019	.282*
24. WAPS-Cow	.088	.478*	.013	.163	.175	.503*	.176*	.409*	.358*	.000	.378*
25. WAPS-SD	.279*	.404*	.060	.113	.409*	.436*	.371*	.466*	.299*	.183*	.556*
26. WAPS-Cre	.202*	.153	.114	.090	.284*	.160	.317*	.157	-.011	.191*	.276*
27. WAPS-\$	.306*	.054	.354*	.072	.157	-.082	.337*	-.019	-.171*	-.038	.203*
28. WAPS-LS	.226*	.203*	.169*	.155	.103	.166	.094	.244*	.012	-.103	.169
29. WAPS-Alt	.085	.446*	-.080	.236*	.254*	.503*	.139	.423*	.457*	.147	.355*
30. WAPS-Sec	.294*	.277*	.173*	.114	.214*	.186*	.271*	.308*	.066	-.008	.322*

Table 12 (Continued)

Variable	1	2	3	4	5	6	7	8	9	10	11
31. WAPS-Mgt	.165	-.001	.347*	.090	.219*	.005	.277*	.027	-.095	.166*	.146
32. WAPS-Det	.273*	.043	.230*	.090	.088	-.001	.113	.133	-.111	-.088	.072
33. NAPS-Ind	.367*	.196*	.181*	.051	.287*	.199*	.230*	.286*	.012	.066	.367*
34. NAPS-Peers	.025	.497*	.030	.044	.127	.410*	.168*	.424*	.351*	.076	.375*
35. NAPS-SD	.211*	.282*	-.011	.101	.304*	.354*	.242*	.399*	.243*	.180*	.414*
36. NAPS-Cre	.210*	.151	.030	.104	.254*	.200*	.222*	.220*	.051	.196*	.282*
37. NAPS-Pres	.084	.296*	.233*	.178	.254*	.239*	.295*	.209*	.127	.067	.285*
38. NAPS-Alt	.031	.351*	-.134	.161	.205*	.438*	.122	.340*	.441*	.134	.365*
39. NAPS-Mgt	.072	.133	.105	.158	.178	.170	.224*	.103	.076	.137	.201*

Table 12 (Continued)

Variable	12	13	14	15	16	17	18	19	20	21	22
1. HI-P											
2. HC-P											
3. VI-P											
4. VC-P											
5. HI-W											
6. HC-W											
7. VI-W											
8. VC-W											
9. COS											
10. Indiv											
11. AIQ-P											
12. AIQ-R	(.752)										
13. AIQ-S	.231*	(.723)									
14. AIQ-C	.341*	.308*	(.579)								
15. Collect	.129	.033	.001	(.686)							

Table 12 (Continued)

Variable	12	13	14	15	16	17	18	19	20	21	22
16. Agency	-.050	-.015	.013	-.213*	(.738)						
17. Assert	.204*	-.132	-.056	-.022	.015	(.649)					
18. Relate	.439*	.083	.082	.172	-.179	.216*	(.498)				
19. PDCAS	.123	.059	.168	.122	-.021	.148	.013	(.677)			
20. HAS	-.094	.312*	.039	.017	.185*	-.009	-.394*	.295*	(.524)		
21. Hier	.193*	.611*	.339*	.004	-.029	-.017	.025	.163*	.351*	(.675)	
22. PD	-.127	.119	.138	-.001	.022	-.205*	-.331*	-.060	.283*	.172	(.485)
23. WAPS-Ind	.137	.150	.227*	-.034	.080	-.004	-.185	.039	.129	.124	.008
24. WAPS-Cow	.476*	.305*	.220*	.103	-.033	.086	.295*	.082	-.116	.223*	-.144
25. WAPS-SD	.375*	.129	.247*	.107	-.047	.208*	.228*	.261*	-.098	.166*	-.110
26. WAPS-Cre	.145	.098	.184*	.098	.056	.045	-.001	.176*	.046	.172*	.088
27. WAPS-\$	.094	.375*	.366*	-.032	.001	.004	-.179	.120	.384*	.478*	.206*
28. WAPS-LS	.235*	.242*	.344*	.030	.027	-.061	-.004	.049	.055	.194*	.081
29. WAPS-Alt	.380*	.142	.249*	.159*	-.009	.131	.426*	.079	-.189*	.108	-.136
30. WAPS-Sec	.292*	.308*	.375*	-.001	-.061	.076	-.002	.138	.175*	.388*	-.005

Table 12 (Continued)

Variable	12	13	14	15	16	17	18	19	20	21	22
31. WAPS-Mgt	.025	.292*	.326*	.084	.116	.050	-.128	.087	.329*	.324*	.214*
32. WAPS-Det	.122	.223*	.196*	.056	.083	-.102	-.127	.026	.177*	.193*	.104
33. NAPS-Ind	.263*	.133	.172	.052	.012	.094	-.032	.177*	.153	.113	-.068
34. NAPS-Peers	.487*	.284*	.098	.135	-.130	.110	.339*	.137	-.081	.206*	-.255*
35. NAPS-SD	.276*	.083	.179	.095	.005	.127	.172	.226*	-.121	.132	-.048
36. NAPS-Cre	.175*	.058	.214*	.118	.055	.035	.044	.146	-.021	.115	.066
37. NAPS-Pres	.299*	.514*	.409*	.015	.017	.060	.154	.116	.115	.557*	.181
38. NAPS-Alt	.372*	.152	.295*	.119	-.014	.119	.469*	.074	-.244*	.131	-.097
39. NAPS-Mgt	.143	.239*	.298*	.067	.060	.002	.033	.075	.080	.250*	.196*

Table 12 (Continued)

Variable	23	24	25	26	27	28	29	30	31	32	33
23. WAPS-Ind	(.716)										
24. WAPS-Cow	.326*	(.756)									
25. WAPS-SD	.292*	.488*	(.762)								
26. WAPS-Cre	.380*	.174*	.495*	(.854)							
27. WAPS-\$	.304*	.207*	.220*	.189*	(.692)						
28. WAPS-LS	.429*	.396*	.182*	.118	.414*	(.612)					
29. WAPS-Alt	.113	.461*	.414*	.189*	-.033	.230*	(.799)				
30. WAPS-Sec	.175*	.360*	.323*	.103	.562*	.443*	.232*	(.748)			
31. WAPS-Mgt	.262*	.167*	.171*	.364*	.430*	.202*	.169*	.275*	(.707)		
32. WAPS-Det	.478*	.240*	.100	.218*	.412*	.545*	.059	.338*	.350*	(.770)	
33. NAPS-Ind	.502*	.296*	.315*	.184*	.175*	.321*	.123	.190*	.180*	.312*	(.660)
34. NAPS-Peers	.191*	.624*	.368*	.024	.125	.259*	.343*	.283*	.043	.128	.482*
35. NAPS-SD	.247*	.349*	.680*	.441*	.177*	.167*	.399*	.226*	.135	.120	.210*
36. NAPS-Cre	.281*	.179*	.434*	.757*	.112	.117	.261*	.059	.277*	.162*	.159*
37. NAPS-Pres	.256*	.408*	.293*	.218*	.438*	.324*	.359*	.355*	.399*	.232*	.145
38. NAPS-Alt	.121	.400*	.359*	.156	.005	.175*	.706*	.158*	.104	.060	.107
39. NAPS-Mgt	.171*	.226*	.249*	.311*	.318*	.189*	.301*	.156	.510*	.231*	-.004

Table 12 (Continued)

Variable	34	35	36	37	38	39
34. NAPS-Peers	(.701)					
35. NAPS-SD	.289*	(.784)				
36. NAPS-Cre	.056	.654*	(.808)			
37. NAPS-Pres	.330*	.415*	.326*			
38. NAPS-Alt	.360*	.487*	.363*	.549*	(.828)	
39. NAPS-Mgt	.085	.381*	.442*	.592*	.441*	(.740)

Note. The square root of the AVE for each trait is reported in the main diagonal. AVE values for the context-specific culture measures were taken from the full model, whereas AVE values for all other measures were taken from models in which all factors were modeled as latent factors (i.e., values reported in Table 11). Ind = independence subscale; Cow = coworkers subscale; SD = self development subscale; Cre = creativity subscale; \$ = money subscale; LS = life style subscale; Pre = prestige subscale; Alt = altruism subscale; Sec = security subscale; Mgt = management subscale; Det = detachment subscale; Peers = peers subscale. * denotes $p < .001$.

Table 13.1

Factor Correlations Related to HI

Variable	COS	Indiv	P-ID	R-ID	S-ID	C-ID	Collect	Agency	Assert	Relate
HI-W		.246*	.540*					.052	.274*	
HI-P		-.007	.547*					.109	.053	
VI-W		.228*	.344*					.016	.194*	
VI-P		-.047	.119					.127	-.169*	
HC-W	.497*			.485*	.134	.182	.170			.472*
HC-P	.496*			.681*	.163	.176	.203*			.426*
VC-W	.429*			.484*	.138	.188	.330*			.402*
VC-P	.124			.129	.135	.306*	.234*			.210

Note. Shading denotes relations consistent with *HI*. * denotes $p < .001$.

Table 13.2

Factor Correlations Related to H2

Variable	PDCAS	HAS	Hier	PD
HI-W	.259*	.161	.169	-.014
HI-P	.057	.236*	.169	.015
VI-W	.620*	.428*	.348*	.061
VI-P	.117	.594*	.438*	.268*
HC-W	.228*	-.273*	.037	-.246*
HC-P	.144	-.155	.190*	-.167
VC-W	.194*	-.182	.055	-.193
VC-P	.015	-.004	.037	.169

Note. Shading denotes relations consistent with *H2*.

* denotes $p < .001$.

Table 13.3

Factor Correlations between Culture and Work Values

Variable	WAPS – Ind	WAPS – Cow	WAPS – SD	WAPS – Cre	WAPS – \$	WAPS – LS	WAPS – Alt	WAPS – Sec	WAPS – Mgt	WAPS – Det
HI-W	.253*	.175	.409*	.284*	.157	.103	.254*	.214*	.219*	.088
HI-P										
VI-W	.126	.176*	.371*	.317*	.337*	.094	.139	.271*	.277*	.113
VI-P										
HC-W	.040	.503*	.436*	.160	-.082	.166	.503*	.186*	.005	-.001
HC-P										
VC-W	.116	.409*	.466*	.157	-.019	.244*	.423*	.308*	.027	.133
VC-P										

Note. Shading denotes relations consistent with *H3*. * denotes $p < .001$.

Table 13.4

Factor Correlations between Culture and Personal Values

Variable	NAPS – Ind	NAPS – Peers	NAPS – SD	NAPS – Cre	NAPS – Pres	NAPS – Alt	NAPS – Mgt
HI-W							
HI-P	.367*	.025	.211*	.210*	.084	.031	.072
VI-W							
VI-P	.181*	.030	-.011	.030	.233*	-.134	.105
HC-W							
HC-P	.196*	.497*	.282*	.151	.296*	.351*	.133
VC-W							
VC-P	.051	.044	.101	.104	.178	.161	.158

Note. Shading denotes relations consistent with *H3*. * denotes $p < .001$.

Table 14

Hierarchical Regression Effect Sizes

Item	Model 1 R^2	Model 2 R^2	ΔR^2
Conceptual Domain One			
COS	.414	.474	.060*
Indiv	.155	.195	.040
AIQ-P	.297	.388	.091*
AIQ-R	.360	.484	.124*
AIQ-S	.476	.518	.042*
AIQ-C	.271	.309	.038
Collect	.081	.154	.073*
Agency	.067	.099	.032
Assert	.117	.192	.075*
Relate	.299	.339	.040
Conceptual Domain Two			
PDCAS	.147	.331	.184*
HAS	.345	.481	.135*
Hier	.511	.543	.032*
PD	.197	.214	.017
Conceptual Domain Three			
WAPS-Ind	.148	.195	.047
WAPS-Cow	.327	.383	.056*
WAPS-SD	.307	.373	.066*
WAPS-Cre	.137	.186	.049
WAPS-\$	.346	.377	.031
WAPS-LS	.161	.196	.035

Table 14 (Continued)

Item	Model 1 R^2	Model 2 R^2	ΔR^2
WAPS-Alt	.299	.359	.060*
WAPS-Sec	.273	.311	.038
WAPS-Mgt	.249	.270	.021
WAPS-Det	.122	.158	.036
NAPS-Ind	.174	.209	.035
NAPS-Peers	.347	.388	.041*
NAPS-SD	.207	.251	.044
NAPS-Cre	.144	.181	.037
NAPS-Pres	.342	.361	.019
NAPS-Alt	.324	.341	.017
NAPS-Mgt	.165	.196	.031

Note. Model 1 refers to models excluding context-specific culture measures. Model 2 refers to models including context-specific culture measures as predictors. * denotes $p < .001$.

Appendix U

Figures

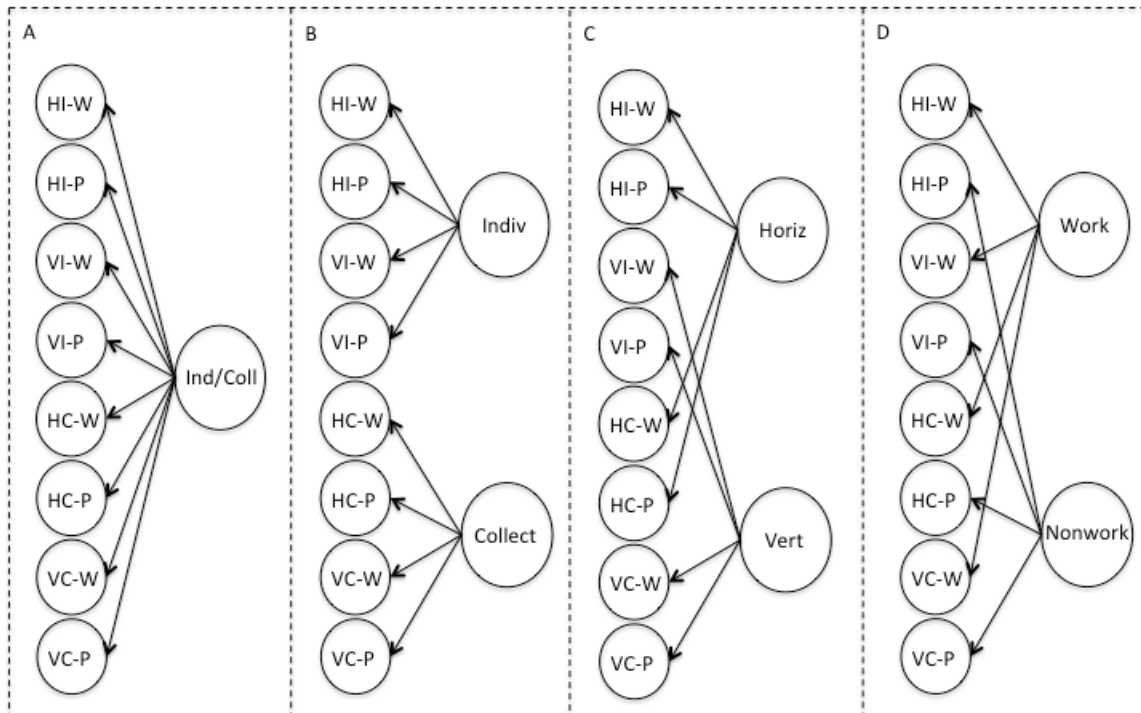


Figure 1: Alternative models examined to assess the structure of the eight newly developed measures. Note that the relevant items are not included in order to increase figure clarity. The actual models examined each first-order factor as a reflective latent variable. HI-W = horizontal individualism – work context; HI-P = horizontal individualism – nonwork context; VI-W = vertical individualism – work context; VI-P = vertical individualism – nonwork context; HC-W = horizontal collectivism – work context; HC-P = horizontal collectivism – nonwork context; VC-W = vertical collectivism – work context; VC-P = vertical collectivism – nonwork context; Ind/Coll = individualism-collectivism; Indiv = individualism; Collect = collectivism; Horiz = horizontalism; and Vert = verticalism.

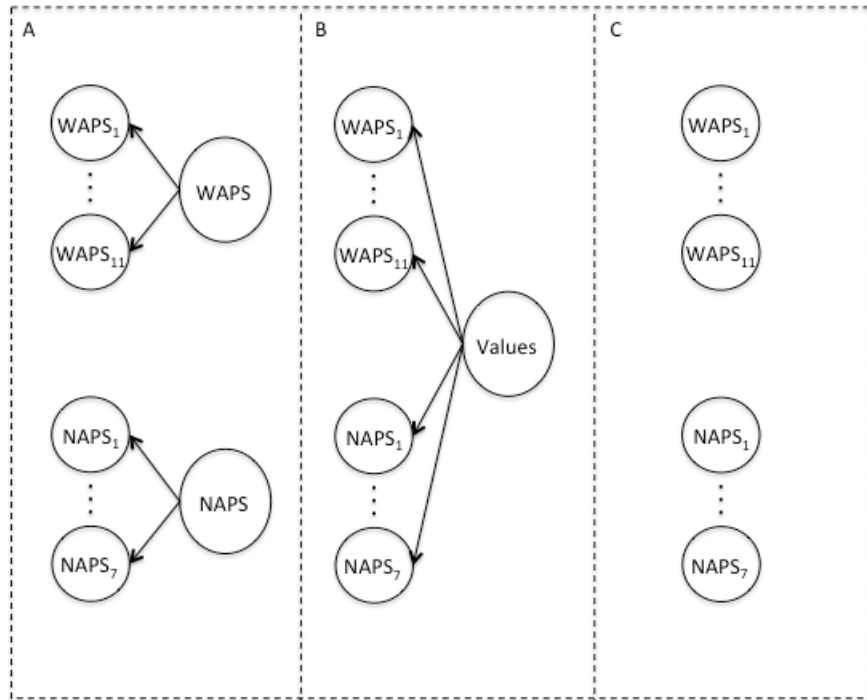


Figure 2: Alternative models examined to assess the structure of personal values. Note that the relevant items and several first-order factors are not included in order to increase figure clarity. WAPS = Work Aspect Preference Scale; NAPS = Nonwork Aspect Preference Scale.

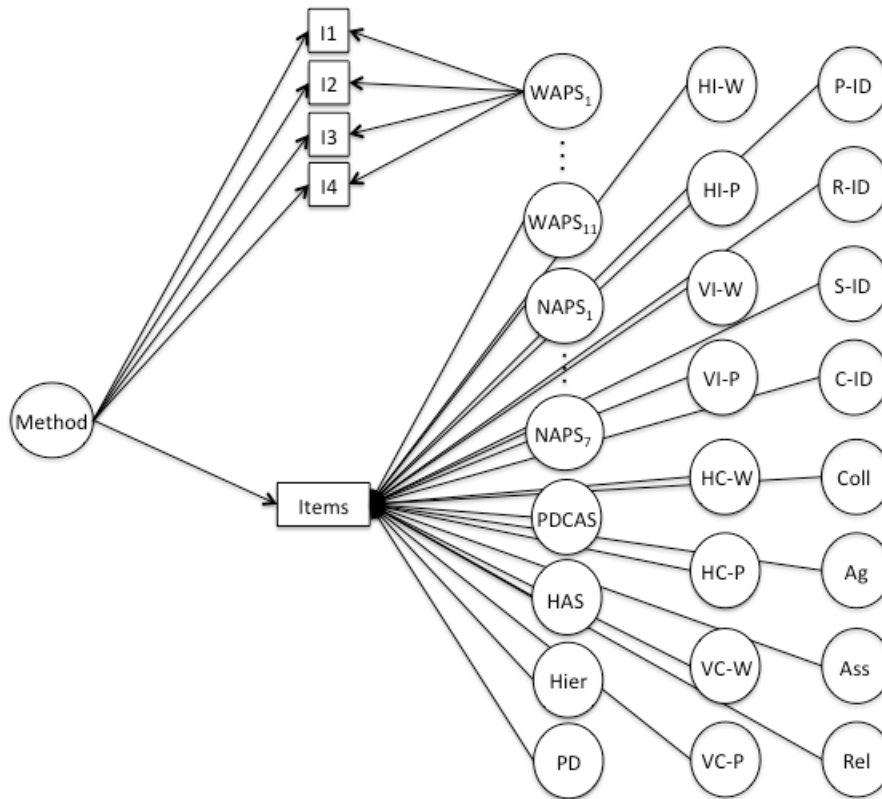


Figure 3: Mono-method multi-trait model in which a latent method factor is modeled. Note that many of the relevant items and several first-order WAPS and NAPS factors are not included in order to increase figure clarity. The actual model includes method loadings for all indicators in a manner consistent with the loadings modeled for the WAPS₁. WAPS = Work Aspect Preference Scale; NAPS = Nonwork Aspect Preference Scale; HI-W = horizontal individualism – work context; HI-P = horizontal individualism – nonwork context; VI-W = vertical individualism – work context; VI-P = vertical individualism – nonwork context; HC-W = horizontal collectivism – work context; HC-P = horizontal collectivism – nonwork context; VC-W = vertical collectivism – work context; VC-P = vertical collectivism – nonwork context; P-ID = personal identity; R-ID = relational identity; S-ID = social identity; C-ID = collective identity; Coll = collectivism; Ag = agency; Ass = assertiveness; Rel = relatedness.

FOOTNOTES

¹ This is not intended to be a comprehensive list of measures within this domain; rather, the purpose of this section is to review a variety of commonly used measures related to individualism and collectivism.

² Despite research indicating that individualism and collectivism are orthogonal (Oyserman et al., 2002), the authors conceptualized these two constructs as opposite ends of one cultural variable.

³ The rating scale was modified from its original format (see Schwartz, 1994a) to maintain consistency across measures.

⁴ Note that the use of the term individualistic in this context does not refer to the cultural variable of individualism.

⁵ As chi-square values can be highly sensitive with large sample sizes, a more stringent alpha value was used (see Byrne, 2006 for a discussion of this issue).

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