

# A Preliminary Report on a New Measure: Internalization of the Model Minority Myth Measure (IM-4) and Its Psychological Correlates Among Asian American College Students

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This investigation is a preliminary report on a new measure of internalization of the model minority myth. In 3 studies, there was evidence for the validation of the 15-item Internalization of the Model Minority Myth Measure (IM-4), with 2 subscales. The Model Minority Myth of Achievement Orientation referred to the myth of Asian Americans' greater success than other racial minority groups associated with their stronger work ethics, perseverance, and drives to succeed. The Model Minority Myth of Unrestricted Mobility referred to the myth of Asian Americans' greater success than other racial minority groups associated with their stronger belief in fairness of treatment and lack of perceived racism or barriers at school or work. The 2-subscale structure of the IM-4 was supported by a combination of exploratory and confirmatory factor analyses, with support of discriminant, convergent, and incremental validity, as well as internal reliability and stability over 2 weeks. The IM-4 is a new measure that taps into a uniquely racialized experience of Asian Americans with research and clinical implications.

*Keywords:* model minority, racial stereotype, ethnic identity, psychological adjustment, Asian American

There is a popular image of Asian Americans as the model minority. The label suggests that Asian Americans are more academically, economically, and socially successful than any other racial minority group associated with their supposedly stronger values emphasizing hard work, perseverance, and belief in the American meritocracy (S. J. Lee, 1996; Wu, 2002). Contrary to this popular belief, the overly positive caricature of Asian Americans as the model minority is misleading, and this inaccurate and distorted comparison can lead to adverse effects in the lives of Asian Americans (Chun, 1995; Inman & Yeh, 2007; F. Wong & Halgin, 2006). However, few empirical studies have investigated psychological consequences of internalizing the model minority myth. The purpose of this article was to present a preliminary report on a new measure of internalization of the model minority myth faced by Asian American college students.

## History and Context of the Model Minority Label

Throughout U.S. history, racial stereotypes of Asian Americans have been used to perpetuate racism and reinforce power structures between majority and minority group members. In the late 19th and early 20th centuries, Asian immigrants were commonly characterized as “filthy,” “inferior race,” “pollutants,” “deviants,” and

“yellow perils” (Hurr & Kim, 1989; R. G. Lee, 1999; Melendy, 1972; Suzuki, 2002)—images that justified countless racist practices, violence, and exclusionary laws directed toward Asian Americans (Takaki, 1993). At the height of the U.S. civil rights movement of the 1960s, however, there was a sudden shift in the popular image of Asian Americans. The negative images were replaced with the more positive image of the “model minority” (R. G. Lee, 1999). Although the tenor of the stereotypes has dramatically changed, it still continues to reify the practice of racism in the United States (Okimoto, 1994).

In reaction to efforts to remove institutional, legal, and social disparities between the majority and minority groups, political conservatives pointed to Asian Americans as an exemplar for other racial minorities. The success of Asian Americans was a testimony that the American dream was truly color-blind and racist free. The model minority image was used to discredit the protest and demands for social justice and silence critics of the systematic practice of racism in the United States (Suzuki, 1989). Petersen (1966) solidified this ideology by coining Asian Americans as the “model minority,” characterizing the comparative success of Japanese Americans through “their own unaided effort” (p. VI-20). Throughout the decades, related stories of comparative success and greater individual effort and mobility were written to generalize the model minority image to all Asian ethnic groups, regardless of their diversity in culture, education, and class (Graubard, 1988; Herrnstein & Murray, 1994; Kasindorf, 1982; Kristof, 2006; Ramirez, 1986; U.S. News and World Report, 1966).

## Deconstructing the Myth of the Model Minority Label

The model minority label is composed of two related parts. First, it compares the success of Asian Americans with other racial minorities. It suggests that not only are Asian Americans success-

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ful, but they are *more* successful than other racial minority groups (S. J. Lee, 1996; Wu, 2002). The thesis stands on the tenet that Asian Americans are *the* model minority, rather than *a* model minority. Second, the comparative success of Asian Americans is attributed to stronger values emphasizing hard work, achievement, and belief in the American dream (Herrnstein & Murray, 1994; Kasindorf, 1982; Kawai, 2005; Wu, 2002). This characterization of individual efforts and mobility justifies the assertion that *anyone* can make significant achievements as long as they work hard, and those who do not have only themselves to blame (S. J. Lee, 1996; National Commission on Asian American and Pacific Islander Research in Education [NCAAPIRE], 2008). Critical race theorists argue that the emphasis on success due to individual values promotes a color-blind attitude of meritocracy—creating a portrait of a successful group who has made it through their own individual efforts, while ignoring the racial and sociohistorical context in which Asian Americans are located (Delgado, 1999; Kawai, 2005).

The model minority label is often supported by examining aggregated mean racial group differences. Indeed, there are reports that highlight Asian Americans as a group generally fare better than other racial minority groups in respect to economic achievements (e.g., higher median family income, percentage in labor force and in high-skill occupations), academic achievements (e.g., higher numbers of high school, bachelor's, and advanced degrees obtained), and social achievements (e.g., less likely to experience racism) (Le, 2002; McNulty & Bellair, 2003; U.S. Census Bureau, 2003, 2007; Utsey, Chae, Brown, & Kelly, 2002). However, these reports do not take into consideration significant details within aggregate group statistics or important social and historical reasons—thus making the model minority label and its assumptions of comparative success and greater individual effort and mobility based on race more myth than fact (S. J. Lee, 1996; NCAAPIRE, 2008).

First, the model minority myth ignores the heterogeneity of Asian American groups and their significantly varied levels of success. For instance, although many South and East Asian American groups, such as Asian Indians and Japanese, have been successful in receiving high school, bachelor's, and advanced degrees, most Southeast Asian Americans, including Hmong, Cambodians, and Laotians, never finished high school—at times, rates are comparable to if not lower than other racial minority groups (U.S. Census Bureau, 2004).

Second, the model minority myth neglects history and the role of selective immigration of Asian Americans. The 1965 Immigration Act significantly changed the demography of Asian Americans in the U.S. today. In particular, it allowed a greater number of educationally and economically successful Asian American professionals who could “contribute” to the American society (Takaki, 1993). Thus, like many other Americans, the academic, economic, and social success of Asian Americans is correlated with their socioeconomic statuses.

Third, the model minority myth overlooks social and cultural context factors. For instance, Asian American families report higher family median income than other racial minority groups. However, this group difference is in part because Asian Americans are much more likely to live in metropolitan areas (i.e., New York City, Los Angeles, etc.), and Asian American families are typically larger with more family members who are working (S. J. Lee, 1996). In addition, studies have found that immigrant children are

more likely to focus on academic achievement with higher social and economic aspirations compared with U.S.-born children—regardless of their race (Tseng, 2006; Tseng, Chao, & Padmawidjaja, 2007).

Fourth, the model minority myth distorts and minimizes actual experiences of racism faced by Asian Americans. Despite popular beliefs that Asian Americans are not affected by racism (Committee of 100, 2001; McQueen, 1991), Asian Americans experience racism on a daily basis, on an individual, institutional, and a cultural level (see Young & Takeuchi, 1998, for review). Although some studies report that Asian Americans perceive less racism than other racial minority groups (e.g., Utsey et al., 2002), the overly positive, problem-free image of the model minority myth may lead Asian Americans to discount and underreport their experiences of actual racism (U.S. Equal Employment Opportunity Commission, 2007) and/or overlook unique racial discrimination experiences faced by Asian Americans (Sue, Bucceri, Lin, Nadal, & Torino, 2007).

### Psychological Implications of Internalizing the Model Minority Myth

Since the introduction of the model minority label in the 1960s, there has been a burgeoning literature in the negative effects of the myth in a wide range of arenas and disciplines, including politics, business, law, sociology, education, media, humanities, and government, to name a few (e.g., Bell, Harrison, & McLaughlin, 1997; Chang, 2001; Chou & Feagin, 2008; Chun, 1995; C. J. Kim, 1999; NCAAPIRE, 2008; Woo, 2000; Wu, 2002). However, there has been less attention paid to psychological implications for Asian Americans internalizing the model minority myth. Are some Asian Americans more likely to believe in the model minority myth than others? Can internalizing the model minority myth lead to greater pressure, unrealistic expectations, and psychological distress for Asian Americans? How does the internalization of the model minority myth shape ethnic and racial identity developments for Asian Americans?

In one of the first published psychological studies on Asian Americans, D. W. Sue and D. W. Sue and Sue (1973) discussed the potential harm of the distorted model minority success image in the lives of Asian Americans, including a restricted sense of identity and limited choice of educational and vocational opportunities. However, it was not until recently that studies started to examine the extent to which Asian Americans themselves internalized the inaccurate messages of the model minority myth. P. Wong, Lai, Nagasawa, and Lin (1998), for instance, found that Asian Americans, along with all other racial groups, falsely believed that Asian Americans were the model minority performing better academically, were more motivated to do well in college, and were more successful in careers compared with other racial minority groups.

Scholars also suggest that Asian Americans who internalize the misleading model minority image, even if positive, can be damaged psychologically if he or she cannot live up to his or her own and society's expectations (S. J. Lee, 1996). Oyserman and Sakamoto (1997) found the majority of Asian Americans did not like to be referred to as the model minority—although there were differences. In particular, 52% of Asian Americans expressed negative feelings, 26% expressed positive feelings, and 16% expressed

ambivalent feelings toward the label. Individuals who thought the label was negative disliked the unfair expectations and pressure placed on them simply because of their race. Other scholars suggest that internalization of the model minority myth may lead to unrealistic expectations and pressure to succeed, serving as a stressor, and consequently leading to greater psychological distress (Chen, 1995; Chu, 2002; F. Wong & Halgin, 2006), lower academic performance (Cheryan & Bodenhausen, 2000; Chun, 1995; F. Wong & Halgin, 2006), and even suicide (Cohen, 2007), especially for those individuals who do not possess either the intellectual capacity or the desire to achieve excellence (Cocchiara & Quick, 2004).

Internalization of the model minority myth may also have adverse consequences in ethnic identity development of Asian Americans. Arguably, belief in one's group as comparatively more successful and exhibiting greater individual efforts and mobility than other groups may invoke a sense of embarrassment and shame as they unnecessarily stand out from the group based on their race. Indeed, studies have found that Asian American youth are already preferentially treated by their teachers, with higher expectations than other racial minority groups (Rosenbloom & Way, 2004; Tenebaum & Ruck, 2007), and are more likely to be racially harassed by their peers (Fisher, Wallace, & Fenton, 2000; Greene, Way, & Pahl, 2006; Rosenbloom & Way, 2004)—often teased for being too successful, as “nerds” and “geeks” (S. J. Lee, 1996; Qin, Way, & Rana, 2008). In turn, these negative experiences and beliefs may be viewed as a threat to one's social identity (Tajfel & Turner, 1986), leading to further disidentification and decreased pride, understanding, and engagement in one's ethnic group membership (Branscombe, Ellemers, Spears, & Doosje, 1999; R. M. Lee, 2005; Pyke, 2003).

Asian Americans who internalize the model minority myth may also silence their personal problems and hinder their help-seeking behaviors (Inman & Yeh, 2007; S. J. Lee, Wong, & Alvarez, 2008). Individuals who falsely endorse their racial group as problem-free and successful may be at greater risk of not seeking help to deal with their personal academic and mental health problems, at the cost of embarrassment or shame of not living up to the model minority myth (Das & Kemp, 1997; Zhou, Sm, & Xin, 2009). In fact, studies have found that Asian Americans are less likely to seek help, whether it is for school or for physical or mental health needs—even though they may have serious issues (Crystal, 1989; Tseng et al., 2007; U.S. Department of Health and Human Services, 2001). This may be due in part to individuals who internalize the model minority myth.

### Measuring Internalization of the Model Minority Myth

The measurement of internalizing the model minority myth would provide researchers with a unique opportunity to assess psychological implications of Asian American individuals who endorse a uniquely racialized, positive, but distorted label of one's group. This would be a significant contribution and shift in the literature from discussing the model minority image as an external stereotype to an internal individual-difference process. The benefits of such a measure would include (a) the recognition of individual variability in processing and internalizing the model minority myth, (b) the ability to directly measure how much an

individual believes in the myth, and (c) the empirical examination of antecedents and consequences of internalizing the model minority myth. The progression in this area of research, however, is hampered by the limited availability of psychometrically valid and reliable instruments that directly measure the internalization of the model minority myth. Two exceptions are measures developed by Chen (1995) and R. P. Wong (2008) for their dissertations. Both measures significantly contribute to researchers' understanding of the role of internalizing the model minority myth, but there are some noteworthy concerns with these measures that can be further improved upon.

Conceptually, both Chen's (1995) and R. P. Wong's (2008) definition and items of internalizing the model minority myth seemed to capture more broadly Asian values or stereotypes of Asian American success (e.g., high achievers, good at math and science, get good grades, education is important, etc.). However, it is important to recognize that the actual myth of the model minority label is more than values or stereotypes of Asian Americans' success, but the assumption that their success is comparatively greater than other racial minorities and is associated with individual efforts and mobility (R. G. Lee, 1999; S. J. Lee, 1996; D. W. Sue & D. Sue, 1973; Suzuki, 1989; F. Wong & Halgin, 2006; Wu, 2002). After all, in many ways, Asian Americans are successful and value education. However, we are not aware of any evidence that suggests Asian Americans are more successful than other racial minorities with greater individual efforts and mobility when taking into account the host of social, racial, and historical facts (NCAAPIRE, 2008; Okihiro, 1994; Wu, 2002). Herein lies the *myth* of the model minority label.

Moreover, Chen's (1995) items were written to capture three components (i.e., social influence and expectations of success, beliefs in success, and performance congruence), although her factor analyses identified eight factors. At the end, it appears she used a total mean score without justification. Furthermore, she did not discuss the type of factor analyses or rotation used. R. P. Wong's (2008) measure and items were limited to the stereotypes experienced by Asian American men. Finally, both Chen and Wong's measures have not been further validated using confirmatory factor analyses to see whether their factor models were comparatively a better fit than alternative models or tested for temporal stability using a test-retest reliability method. Given these limitations, we believed it was necessary to develop another empirically validated measure of internalization of the model minority myth in order to advance the research in this area.

### Study 1: Exploratory Factor Analysis and Initial Validation

#### Purpose

The purpose of Study 1 was threefold in developing a new measure of Internalization of the Model Minority Myth (IM-4): (a) Generate an initial pool of items to capture the internalization of the model minority myth messages, (b) conduct an exploratory factor analysis to assess the factor structure of the scale items, and (c) assess for additional evidence of construct validity (including discriminant, convergent, and incremental) and reliability. In assessment of discriminant validity, we expected a small or nonsignificant correlation between the IM-4 and Asian American values.

Given the confusion and interchangeability in the use of these terms (Chen, 1995), our goal was to develop the IM-4 independent of Asian American values emphasizing comparative success associated with individual efforts and mobility. In assessment of convergent validity, we expected a significant negative correlation between the IM-4 and ethnic identity components, as internalizing the model minority myth focusing on comparative success may invoke embarrassment and group disidentification (R. M. Lee, 2005; Pyke, 2003). We also expected a significant positive correlation between the IM-4 and psychological distress, as internalizing model minority myth messages would be viewed as an unfair burden, a pressure, and a stressor (Cheryan & Bodenhausen, 2000; Chun, 1995; Cohen, 2007; F. Wong & Halgin, 2006). In assessment of incremental validity, we expected positive correlations between the IM-4 and psychological distress, above and beyond effects from Asian American values and ethnic identity components. Our goal was to demonstrate the unique contribution and significance of the IM-4 on distress and well-being of Asian Americans, complementing the growing literature on the significance of Asian American values and ethnic identity in the lives and health of Asian Americans (e.g., B. S. K. Kim, 2007; B. S. K. Kim, Li, & Ng, 2005; R. M. Lee, 2005; R. M. Lee & Yoo, 2004; Uba, 1994; Yoo & Lee, 2005, 2008).

### Scale Construction

In review of the literature, there was no clear consensus on the definition of the model minority myth; rather, the definition seemed to be dependent on the discipline in which it was used. However, there were two prevailing themes in the literature that helped differentiate the model minority myth from similar Asian American stereotypes or values. First, the model minority myth focuses on comparative success based on race. Thus, the model minority myth suggests not only that Asian Americans are economically, academically, and socially successful, but they are somehow more successful than other racial minority groups (Kawai, 2005; S. J. Lee et al., 2008; Suzuki, 1989; F. Wong & Halgin, 2006; Wu, 2002). Second, the model minority myth associates the greater success of Asian Americans with their individual efforts and mobility (S. J. Lee, 1996; NCAAPIRE, 2008; D. W. Sue & D. Sue, 1973; Wu, 2002). Thus, the flawed assumption of comparative success is related to Asian American individuals' greater emphasis on achievement, stronger work ethics, and/or greater belief in unrestricted mobility—without any consideration of group heterogeneity, selective immigration, context dependency, or institutional barriers faced by Asian Americans (Inman & Yeh, 2007; R. G. Lee, 1999; Suzuki, 1989; F. Wong & Halgin, 2006; Wu, 2002). For these reasons, we define *internalization of the model minority myth* as the extent to which individuals believe Asian Americans are more successful than other racial minority groups based on their values emphasizing achievement and hard work and belief in unrestricted mobility toward progress.

On the basis of guidelines set by Clark and Watson (1995), efforts were made to keep items simple and written to oversample the construct of interest. Using the aforementioned framework and operational definitions, Hyung Chol Yoo and three research assistants developed an initial pool of 49 items tapping into a range of endorsement of flawed, attitudinal messages capturing the model minority myth. These included a range of supposed comparative

academic, economic, and social success of Asian Americans (Le, 2002; McNulty & Bellair, 2003; U.S. Census Bureau, 2003, 2007; Utsey et al., 2002) associated with individual efforts and mobility (Herrnstein & Murray, 1994; Kasindorf, 1982). Six independent experts in the field of Asian American studies in a wide range of disciplines (i.e., history, psychology, literature, sociology, and geography) reviewed items to assess congruency between items and construct. Fifteen items were dropped in the process to eliminate redundant, inappropriate, and unclear items, resulting in an initial 34-item inventory. Eight items were randomly reverse scored to minimize potential response bias. All items started with the stem "In comparison to other racial minorities (e.g., African American, Hispanics, Native Americans)." The response format for the measure was a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores representing greater internalization of the model minority myth and lower scores representing the opposite.

### Method

**Participants.** Participants in Study 1 consisted of 206 self-identified Asian American undergraduate students from a large public Southwestern university. Their mean age was 20 ( $SD = 2.1$ ), with 94 women and 111 men (one did not respond). Generational status included 78 first-generation, 73 second-generation, and 55 third-generation students. Self-identified ethnic groups included 61 Chinese, 38 Vietnamese, 30 multiracial/multiethnic, 29 Filipino/a, 21 Korean, 8 Japanese, 6 Asian Indian, 3 Hawaiian/Pacific Islander, 2 Cambodian, 2 Taiwanese, 1 Thai, and 1 Bengali (4 did not respond). Family income included 11 individuals who reported \$19k or less, 32 reported \$20k–\$39k, 37 reported \$40k–\$59k, 31 reported \$60k–\$79k, 35 reported \$80k–\$99k, and 48 reported \$100k or more (12 did not respond). Students were distributed across classes (1st year = 60; 2nd year = 48; 3rd year = 52; 4th year = 28; "other" = 18). Their mean self-reported cumulative college grade point average (GPA) was 3.36 ( $SD = 0.47$ ).

**Procedure.** Participants were recruited from Asian American student organizations and Asian American studies and psychology classes. Researchers coordinated with course instructors and organizational leaders to make an announcement about the purpose of our study and criteria for participation (including self-identification by participants as an Asian American college student). For those interested, one of two options was followed (depending on the preference of the participants, course instructors, or organizational leaders). Students who qualified and agreed to participate completed the survey either in groups (e.g., during the organizational meeting) or individually outside of class, at which point they scheduled a meeting time with a researcher to pick up the survey. Surveys took roughly 30 min to complete. Participants were paid \$5 for the completion of their survey packet. Written debriefing about the purpose of the study was reviewed and given to each participant. The university's human subjects committee approved all procedures.

**Measures.** The measures used are discussed below.

**Asian American Values Scale—Multidimensional (AAVS-M; B. S. K. Kim et al., 2005).** The AAVS-M is a widely used 42-item self-report measure of Asian American values with five subscales: Collectivism (seven items), Conformity to Norms



(seven items), Emotional Self-Control (eight items), Family Recognition through Achievement (14 items), and Humility (six items). It is rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores representing greater endorsement of Asian American values. Kim and colleagues showed the instrument to be both reliable and valid. For this study, the mean item score of Collectivism was 4.22 ( $SD = 0.80$ ), with an internal reliability estimate of .71. The mean item score of Conformity to Norms was 3.88 ( $SD = 0.95$ ), with an internal reliability estimate of .76. The mean item score of Emotional Self-Control was 3.54 ( $SD = 0.82$ ), with an internal reliability estimate of .73. The mean item score of Family Recognition through Achievement was 4.52 ( $SD = 0.95$ ), with an internal reliability estimate of .89. The mean item score of Humility was 3.83 ( $SD = 0.86$ ), with an internal reliability estimate of .65.

**Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992).**

The MEIM consists of 15 items that are rated on a 4-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*) to measure ethnic identity. A higher score on the MEIM represents a more positive ethnic identity. The MEIM has been used widely on various Asian ethnic groups, including college students, and has been correlated with self-esteem, depression, subjective well-being, and social connectedness (R. M. Lee, 2005; Phinney, 1992; Worrell, 2000; Yip & Fuligni, 2002). Phinney (1990, 1992) originally proposed ethnic identity as a multidimensional construct, although results from her scale development study suggested only one general factor. R. M. Lee and Yoo (2004) consequently developed a three-factor version from the original MEIM items measuring different aspects of ethnic identity that closely approximated Phinney's (1990, 1992) original theoretical model. Specifically, the Ethnic Identity Cognitive-Clarity (EI Cognitive-Clarity; five items) measures a sense of clarity, self-understanding, and belonging. The Ethnic Identity Affective-Pride (EI Affective-Pride; five items) measures positive feelings toward one's ethnic group membership. The Ethnic Identity Behavioral-Engagement (EI Behavioral-Engagement; five items) measures interest and participation in one's ethnic group. R. M. Lee and Yoo (2004) reported that internal reliability estimates for the three-factor MEIM ranged from .72 to .81. For this study, the mean item score for EI Cognitive-Clarity was 2.90 ( $SD = 0.55$ ), with an internal reliability estimate of .72 ( $\alpha$ ). For this study, the mean item score for EI Affective-Pride was 3.31 ( $SD = 0.55$ ), with an internal reliability estimate of .80 ( $\alpha$ ). For this study, the mean item score for EI Behavioral-Engagement was 2.75 ( $SD = 0.60$ ), with an internal reliability estimate of .70 ( $\alpha$ ).

**Hopkins Symptom Checklist—21 [HSCL-21]; Green, Walkey, McCormick, & Taylor, 1988).** The HSCL-21 is a widely used 21-item self-report measure of distress symptoms with three subscales: General Distress (seven items), Somatic Distress (seven items), and Performance Difficulty (seven items). It is rated on a 4-point scale ranging from 1 (*not at all*) to 4 (*extremely*), with higher scores representing greater distress. Green and colleagues showed the instrument to be both reliable and valid, and it has been used with Asian American samples (e.g., Liu & Goto, 2007; Su, Lee, & Vang, 2005). For this study, the mean item score of General Distress was 1.93 ( $SD = 0.61$ ), with an internal reliability estimate of .84. The mean item score of Somatic Distress was 1.67 ( $SD = 0.59$ ), with an internal reliability estimate of .85. The mean

item score of Performance Difficulty was 2.10 ( $SD = 0.56$ ), with an internal reliability estimate of .76.

## Results

**Exploratory factor analysis.** Following recommended procedures for assessing the dimensionality of psychological measurement data (Steger, 2006), we conducted an exploratory factor analysis (principal axis factor analysis [PFA] with promax rotation,  $\kappa = 4$ ) on the initial 34 items of the IM-4. PFA was chosen over principal-components analysis because the latter introduces more spurious common variance into solutions (Comrey, 1988) and is less appropriate for latent variable identification (Floyd & Widaman, 1995). We chose an oblique rotation on the assumption that any additional factors beyond a single factor solution would be correlated, and attribution of comparable success would only differ on the basis of type of values (i.e., achievement oriented, strong work ethics, belief in meritocracy, etc.). However, results using oblique and orthogonal rotations were comparable. The screeplot indicated a clear "elbow" after the third factor. The first five eigenvalues were 8.17, 5.19, 2.19, 1.51, and 1.50. We used a separate parallel analysis with 1,000 randomly permuted data sets (O'Connor, 2000), which also supported a three-factor solution. In particular, only the eigenvalues from the first three factors exceeded the 95th percentile random eigenvalues from 1,000 randomly generated data sets. The Kaiser measure of sampling adequacy was sufficiently high (.85) to suggest the correlation matrix was appropriately factorable (Tabachnick & Fidell, 2001).

We next evaluated each item with a pattern matrix factor loading greater than |.40| on the intended factor and below |.30| on the other factor for item retention (Pett, Lackey, & Sullivan, 2003). We deleted 11 items in accordance with this criterion. Factor 1 had 11 items that represented a dimension of greater success associated with Asian Americans' achievement orientation, strong work ethics, and perseverance. Factor 2 had six items that represented a dimension of greater success associated with Asian Americans' lack of barriers at work and school, not experiencing racial discrimination, and stronger belief in meritocracy. Factor 3 had six items that did not have a coherent theme across the items. For instance, it included item stems such as "Asian American families are less stable"; "Asian Americans are less likely to value education"; and "Asian Americans are less likely to succeed in business." Furthermore, all six items were reverse scored. We believed this factor was a function of method variance, and thus removed all six items.

We subjected the resulting 17 items to another identical factor analysis described above. The screeplot indicated a clear "elbow" after the second factor. The first five eigenvalues were 5.99, 2.72, 1.21, .90, and .78. Independent parallel analysis with 1,000 randomly permuted data sets supported the two-factor solution. Using the same factor loading criterion described above, we deleted two additional items, resulting in a 15-item measure. We reanalyzed the remaining 15 items once more, which accounted for approximately 54% of the total variance. Factor 1 with 10 items accounted for 37% of the variance. We named this factor Model Minority Myth of Achievement Orientation (MM—Achievement Orientation) because the myth of Asian Americans' greater success than other racial minority groups was associated with their stronger work ethics, perseverance, and drive to succeed. Factor 2 with five items accounted for 17% of the variance. We named this factor Model Minority Myth of Unrestricted Mobility (MM—Unrestricted Mobility) because the

myth of Asian Americans' greater success than other racial minority groups was associated with their stronger belief in meritocracy and lack of perceived racism or barriers at school/work (see Table 1).

**Descriptive and internal reliability.** The mean score for MM—Achievement Orientation was 4.91 (*SD* = 0.93), and the mean score for MM—Unrestricted Mobility was 3.41 (*SD* = 1.02). The internal consistency reliability of the MM—Achievement Orientation ( $\alpha = .91$ ) and MM—Unrestricted Mobility ( $\alpha = .77$ ) subscales were good. MM—Achievement Orientation and MM—Unrestricted Mobility subscales were correlated with a small, but significant effect size ( $r = .16, p < .05$ ).

No specific hypotheses were made regarding the possibility of within-group differences among Asian Americans. However, given the diversity among Asian Americans, we explored possible demographic differences (i.e., age, gender, generational status, family income, academic year, and college GPA) in our IM-4 subscales. We found no significant correlations or differences between demographic characteristics and IM-4 subscales. We were not able to test for ethnic group differences given the small sample sizes of each ethnic group.

**Discriminant and convergent validity.** We examined correlations between IM-4 subscales (i.e., MM—Achievement Orientation and MM—Unrestricted Mobility), Asian American values (i.e., Collectivism, Conformity to Norms, Emotional Self-Control, Family Recognition through Achievement, and Humility), ethnic identity components (i.e., EI Cognitive-Clarity, EI Affective-Pride, EI Behavioral-Engagement), and distress symptoms (i.e., General Distress, Somatic Distress, and Performance Difficulty) to assess discriminant and convergent validity (see Table 2).

In partial support of discriminant validity, there were small positive or nonsignificant relations between IM-4 subscales and

Asian American values. Specifically, MM—Achievement Orientation was correlated with Collectivism ( $r = .15, p < .05$ ) and Conformity to Norms ( $r = .22, p < .05$ ), and not with Emotional Self-Control ( $r = -.01, ns$ ) and Humility ( $r = -.12, ns$ ). The only exception was the moderate relations between MM—Achievement Orientation and Family Recognition through Achievement ( $r = .32, p < .05$ ). Similarly, MM—Unrestricted Mobility was correlated with Conformity to Norms ( $r = .21, p < .05$ ) and Emotional Self-Control ( $r = .17, p < .05$ ), and not with Collectivism ( $r = .05, ns$ ), Family Recognition through Achievement ( $r = .07, ns$ ), and Humility ( $r = -.10, ns$ ).

In partial support of convergent validity, there were some significant relations between IM-4 subscales and ethnic identity components. As expected, MM—Unrestricted Mobility was negatively correlated with EI Affective-Pride ( $r = -.18, p < .05$ ). In contrast, MM—Achievement Orientation was positively correlated with EI Affective-Pride ( $r = .29, p < .05$ ). In addition, there were some positive relations between IM-4 subscales and distress symptoms. Specifically, MM—Achievement Orientation was positively correlated with Performance Difficulty ( $r = .15, p < .05$ ). MM—Unrestricted Mobility was correlated with General Distress ( $r = .15, p < .05$ ) and Somatic Distress ( $r = .25, p < .05$ ).

**Incremental validity.** To assess for incremental validity, we performed three hierarchical multiple regression analyses to examine correlations between IM-4 subscales (i.e., MM—Achievement Orientation and MM—Unrestricted Mobility) and distress symptoms (i.e., General Distress, Somatic Distress, and Performance Difficulty), after controlling for Asian American values (i.e., Collectivism, Conformity to Norms, Emotional Self-Control, Family Recognition through Achievement, and Humility) and ethnic identity components (i.e., EI Cognitive-Clarity, EI

Table 1  
IM-4 Item Description, Factor Loadings, Means, and Standard Deviations From the Final Reduced Item Set in Study 1

Item	Factor 1	Factor 2	<i>M</i>	<i>SD</i>
Factor 1: MM—Achievement Orientation				
18. Asian Americans have stronger work ethics.	<b>.78</b>	-.12	4.96	1.27
13. Asian Americans are harder workers.	<b>.75</b>	-.06	4.80	1.24
16. Despite experiences with racism, Asian Americans are more likely to achieve academic and economic success.	<b>.74</b>	.03	4.79	1.29
17. Asian Americans are more motivated to be successful.	<b>.73</b>	-.08	5.01	1.26
29. Asian Americans generally have higher grade point averages in school because academic success is more important.	<b>.72</b>	.12	4.82	1.40
9. Asian Americans get better grades in school because they study harder.	<b>.71</b>	-.04	5.01	1.37
3. Asian Americans generally perform better on standardized exams (i.e., SAT) because of their values in academic achievement.	<b>.70</b>	.06	5.18	1.36
5. Asian Americans make more money because they work harder.	<b>.66</b>	-.01	4.64	1.43
8. Asian Americans are more likely to be good at math and science.	<b>.66</b>	.03	4.90	1.31
7. Asian Americans are more likely to persist through tough situations.	<b>.57</b>	-.01	4.72	1.21
Factor 2: MM—Unrestricted Mobility				
20. Asian Americans are less likely to face barriers at work.	-.20	<b>.74</b>	3.33	1.28
32. Asian Americans are less likely to encounter racial prejudice and discrimination.	.01	<b>.68</b>	3.27	1.48
10. Asian Americans are less likely to experience racism in the United States.	.05	<b>.63</b>	3.23	1.62
11. Asian Americans are more likely to be treated as equals to European Americans.	-.03	<b>.62</b>	3.41	1.45
23. It is easier for Asian Americans to climb the corporate ladder.	.01	<b>.54</b>	3.81	1.26

*Note.* All items began with the stem: "In comparison to other racial minorities (e.g., African American, Hispanics, Native Americans)." The response format for the measure was a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores representing greater internalization of the model minority myth and lower scores representing the opposite. Pattern matrix factor loadings  $> .40$  on the intended factor and  $< .30$  on the other factor are in bold. IM-4 = Internalization of the Model Minority Myth Measure; MM = model minority myth.

Table 2  
Scale Means, Standard Deviations, Internal Reliability, and Intercorrelations in Study 1

Scale	1	2	3	4	5	6	7	8	9	10	11	12	13
1. MM—Achievement Orientation	—												
2. MM—Unrestricted Mobility	.14	—											
3. Collectivism	.15*	.05	—										
4. Conformity	.22**	.21**	.30**	—									
5. Emotional Self-Control	-.01	.17*	.29**	.41**	—								
6. Achievement	.32**	.07	.36**	.40**	.21**	—							
7. Humility	-.12	-.10	.14*	.01	.32**	-.06	—						
8. EI Cognitive-Clarity	.02	-.12	.10	-.06	-.16*	.11	-.10	—					
9. EI Affective-Pride	.29**	-.18*	.08	-.18*	-.25**	.16*	-.01	.61**	—				
10. EI Behavioral-Engagement	.10	.06	.12	.06	-.03	.16*	-.09	.58**	.47**	—			
11. General Distress	.10	.15*	-.10	.17*	.16*	.17*	-.03	-.11	-.01	.08	—		
12. Somatic Distress	-.01	.25**	-.02	.16*	.16*	.08	-.08	-.13	-.11	.11	.56**	—	
13. Performance Difficulty	.15*	.11	.01	.15*	.15*	.28**	.00	-.11	-.03	.06	.65**	.55**	—
Mean item	4.90	3.41	4.22	3.88	3.54	4.52	3.83	2.90	3.31	2.75	1.93	1.67	2.10
SD	0.93	1.02	0.80	0.95	0.82	0.95	0.86	0.55	0.55	0.60	0.61	0.59	0.56
α	.91	.77	.71	.76	.73	.89	.65	.72	.80	.70	.84	.85	.76

Note. *N* = 197 after listwise deletion. MM—Achievement Orientation = Internalization of the Model Minority Myth—Achievement Orientation; MM—Unrestricted Mobility = Internalization of the Model Minority Myth—Unrestricted Mobility; Collectivism = Asian Values, Collectivism; Conformity = Asian Values, Conformity to Norms; Self-Control = Asian Values, Emotional Self-Control; Achievement = Asian Values, Family Recognition through Achievement; Humility = Asian Values, Humility; EI Cognitive-Clarity = Ethnic Identity Cognitive-Clarity; EI Affective-Pride = Ethnic Identity Affective-Pride; EI Behavioral-Engagement = Ethnic Identity Behavioral-Engagement.  
\* *p* < .05. \*\* *p* < .01.

Affective-Pride, EI Behavioral-Engagement). In Step 1, we entered all Asian American values and ethnic identity components as covariates. In Step 2, we entered IM-4 subscales to examine its unique contribution to distress above and beyond effects from Asian American values and ethnic identity components (see Table 3).

One out of three hierarchical multiple regression analyses were significant, partially supporting the incremental validity of IM-4 subscales. The incremental effect of IM-4 subscales on Somatic Distress was statistically significant ( $R^2 = .14$ ;  $+R^2 = .03$ ),  $F(2, 186) = 3.11$ ,  $p < .05$ , although it was not statistically significant on General Distress ( $R^2 = .14$ ;  $+R^2 = .01$ ),  $F(2, 186) = 0.73$ ,  $p =$

.48, and Performance Difficulty ( $R^2 = .14$ ;  $+R^2 = .01$ ),  $F(2, 186) = 0.72$ ,  $p = .49$ . Specifically, MM—Unrestricted Mobility was positively associated with Somatic Distress, controlling for MM—Achievement Orientation, Asian American values, and ethnic identity components ( $\beta = .18$ ,  $sr^2 = .03$ ,  $p < .05$ ).

**Study 2: Confirmatory Factor Analysis**

The purpose of Study 2 was to replicate the two-factor structure and fit of the IM-4 on an independent sample. Moreover, we tested internal reliability and convergent validity of IM-4 subscales. To

Table 3  
Hierarchical Multiple Regression Analyses Testing Incremental Validity of IM-4 Subscales on Distress Symptoms in Study 1

Subscale	General distress				Somatic distress				Performance difficulty			
	<i>B</i>	<i>SE B</i>	$\beta$	<i>sr</i> <sup>2</sup>	<i>B</i>	<i>SE B</i>	$\beta$	<i>sr</i> <sup>2</sup>	<i>B</i>	<i>SE B</i>	$\beta$	<i>sr</i> <sup>2</sup>
(Constant)	1.36	.47			1.15	.45			1.42	.43		
Collectivism	-.18*	.06	-.24	.04	-0.06	.06	-.08	.01	-0.10	.05	-.14	.01
Conformity	0.06	.06	.09	.01	0.05	.05	.08	.00	0.00	.05	-.01	.00
Emotional Self-Control	0.11	.06	.14	.01	0.07	.06	.10	.01	.07	.06	.10	.01
Achievement	.10*	.05	.16	.02	.03	.05	.05	.00	0.16**	.05	.28	.06
Humility	-.02	.05	-.03	.00	-0.06	.05	-.09	.01	0.01	.05	.01	.00
EI Cognitive-Clarity	-.25*	.11	-.23	.03	-0.26*	.10	-.24	.03	-0.18	.10	-0.18	.02
EI Affective-Pride	0.12	.11	.11	.01	0.02	.11	.02	.00	-0.01	.10	-.01	.00
EI Behavioral-Engagement	0.15	.09	.15	.01	0.23*	.09	.23	.03	0.13	.08	.14	.01
MM—Achievement Orientation	0.02	.05	.02	.00	-0.05	.05	-.08	.00	0.05	.05	.08	.00
MM—Unrestricted Mobility	0.05	.04	.08	.01	0.10*	.04	.18	.03	0.02	.04	.04	.00

Note. *N* = 197 after listwise deletion. IM-4 = Internalization of the Model Minority Myth Measure; MM—Achievement Orientation = Internalization of the Model Minority Myth—Achievement Orientation; MM—Unrestricted Mobility = Internalization of the Model Minority Myth—Unrestricted Mobility; Collectivism = Asian Values, Collectivism; Conformity = Asian Values, Conformity to Norms; Self-Control = Asian Values, Emotional Self-Control; Achievement = Asian Values, Family Recognition through Achievement; Humility = Asian Values, Humility; EI Cognitive-Clarity = Ethnic Identity Cognitive-Clarity; EI Affective-Pride = Ethnic Identity Affective-Pride; EI Behavioral-Engagement = Ethnic Identity Behavioral-Engagement.  
\* *p* < .05. \*\* *p* < .01.

test convergent validity, we hypothesized IM-4 subscales would negatively correlate with situational well-being (specifically, negatively associate with positive affect and positively associate with negative affect), as internalizing model minority myth messages would be viewed as an unfair burden, pressure, and stressor (Cheryan & Bodenhausen, 2000; Chun, 1995; Cohen, 2007; F. Wong & Halgin, 2006).

## Method

**Participants.** Participants in Study 2 consisted of 187 self-identified Asian American undergraduate students from a large public Southwestern university. Source of data collection included 83 students from Asian American studies courses and 104 students from Psychology 101 courses.

Their mean age was 21 ( $SD = 2.5$ ), with 79 women and 99 men (9 did not respond). Nativity status included 80 U.S.-born and 97 foreign-born individuals (10 did not respond). Self-identified ethnic groups included 45 Chinese, 34 Korean, 19 Filipino, 19 Japanese, 15 Vietnamese, 15 Asian Indian, 16 other Asian, and 13 multiracial/multiethnic (11 did not respond). Academic year included 34 first-year college students, 74 second-year college students, 31 third-year college students, 12 fourth-year college students, 4 fifth-year college students, and 3 sixth-year or beyond college students (29 did not respond). Of those reporting, 50 self-reported cumulative college GPA of 3.5 or higher, 42 reported between 3.0 and 3.49, 25 reported 2.9 and lower (70 did not respond).

**Procedure.** The recruitment and procedure in data collection for Study 2 was the same as Study 1, but efforts were made to collect from Psychology 101 classes, rather than primarily from Asian American organizations and related classes. Psychology 101 classes were emphasized in order to obtain participants who may not as strongly identify (in terms of attitudes and behaviors) as being Asian American, thus increasing the variability in response to our race-based measures.

**Positive Affect Negative Affect Schedule—Short Form (PANAS—Short Form; Thompson, 2007).** Situational well-being was measured with the PANAS—Short Form, which includes two five-item affect scales measuring positive (e.g., active) and negative (e.g., nervous) affect. The scale items are rated according to level of agreement in response to a situation (i.e., “feel this way at this moment”) on a 5-point scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*), with higher scores reflecting greater positive or negative affect. Thompson conducted a series of extensive cross-cultural studies to assure the reduced 10 items from

the original 20-item measure (Watson, Clark, & Tellegen, 1988) was psychometrically valid and reliable. The PANAS—Short Form also demonstrated good internal reliability estimates and have demonstrated convergent and discriminant validity with other emotional well-being measures and psychological distress measures. The PANAS has also been used with Asian Americans and show similarly good reliability estimates (e.g., Kang, Shaver, Sue, Min, & Jing, 2003; Yoo & Lee, 2005). For this study, the mean item scale score for Positive Affect was 2.70 ( $SD = 0.99$ ), with an internal reliability estimate of .84 ( $\alpha$ ). The mean item scale score for Negative Affect was 1.71 ( $SD = 0.84$ ), with an internal reliability estimate of .84 ( $\alpha$ ).

## Results

**Confirmatory factor analysis.** To examine the stability of the two-factor solution derived from exploratory factor analyses in Study 1, we further tested the overall fit between the two-factor model against competing models, including the one-factor model. We used the structural equation modeling software AMOS 6.0 (Arbuckle, 2005) to conduct confirmatory factor analysis of the fit of the two-factor solution to the data. We specified a model with two correlated first-order factors, labeled MM—Achievement Orientation and MM—Unrestricted Mobility. MM—Achievement Orientation loaded on 10 items and MM—Unrestricted Mobility loaded on five items identified in Study 1. We assessed goodness of fit with a variety of fit indices, as is widely recommended, including confirmatory fit index (CFI), nonnormed fit index (NNFI), standardized root-mean-squared residual (SRMR), and root-mean-square error of approximation (RMSEA) (Quintana & Maxwell, 1999). A generally accepted guideline is that CFI and NNFI should be close to or greater than .90, and SRMR and RMSEA should be close to or less than .08 (Finch & West, 1997; Hu & Bentler, 1999; Lopez & Rice, 2006; Quintana & Maxwell, 1999). Together, our results indicate that the two-factor model of the IM-4 had an acceptable fit to the data, and supported the factor structure reported in Study 1 (see Table 4). We tested this correlated factors model against two competing models: a model positing two orthogonal factors and a single-factor solution (see Table 4). We used the Akaike information criterion (AIC) to determine which model fit the data best, with a smaller value indicating a better model fit (Maruyama, 1998). The fit of the correlated factors model (AIC = 226.34) was nearly identical to the orthogonal factors model (AIC = 225.14), and both models fit substantially better than the single-factor model (AIC = 396.82). In summary,

Table 4  
Summary of Fit Indices From Confirmatory Factor Analyses of the IM-4 in Study 2

Model	$\chi^2$	<i>df</i>	CFI	NNFI	SRMR	RMSEA (90% CI)	AIC
Correlated	164.34***	89	.93	.92	.07	.07 (.05, .09)	226.34
Orthogonal	165.14***	90	.93	.92	.07	.07 (.04, .09)	225.14
Single	336.82***	90	.73	.77	.14	.13 (.12, .14)	396.82

*Note.* For these analyses,  $n = 165$ , due to missing data. IM-4 = Internalization of the Model Minority Myth Measure; CFI = comparative fit index; NNFI = nonnormed fit index; SRMR = standardized root-mean-square residual; RMSEA = root-mean-square error of approximation; CI = confidence interval; AIC = Akaike information criterion.

\*\*\*  $p < .001$ .



results support the use of the IM-4 with the two subscales, MM—Achievement Orientation and MM—Unrestricted Mobility.

**Descriptive and internal reliability.** The mean score for MM—Achievement Orientation was 4.92 ( $SD = 0.93$ ), and the mean score for MM—Unrestricted Mobility was 3.36 ( $SD = 0.91$ ). The internal consistency reliability of the MM—Achievement Orientation ( $\alpha = .91$ ) and MM—Unrestricted Mobility ( $\alpha = .75$ ) subscales were good. The correlation between MM—Achievement Orientation and MM—Unrestricted Mobility subscales was not significant ( $r = -.04, ns$ ).

Although no a priori hypotheses were made, we explored possible demographic differences (i.e., source of data collection, age, gender, nativity status, academic year, and college GPA, in our IM-4 subscales. We were not able to test for ethnic group differences given the small sample sizes of each ethnic group. Participant's age was not significantly correlated with IM-4 subscales. We also performed a 2 (source; Asian American studies classes vs. psychology classes)  $\times$  2 (gender; male vs. female)  $\times$  2 (nativity status; foreign-born vs. U.S.-born)  $\times$  4 (academic year; first year, second year, third year, fourth year and more)  $\times$  4 (college GPA; no response, 2.9 and lower, between 3.0 and 3.49, and 3.5 or higher) multivariate analysis of variance, with MM—Achievement Orientation and MM—Unrestricted Mobility as dependent variables. A significant multivariate main effect was detected for gender (Wilks's  $\Lambda, F(2, 80) = 3.74, p < .05, \eta_p^2 = .09$ ). A test of between-subjects comparison found a significant gender difference on MM—Achievement Orientation,  $F(1, 81) = 4.34, p < .05, \eta_p^2 = .05$ . Women reported higher MM—Achievement Orientation than men ( $M = 5.09$  vs. 4.68).

**Convergent validity.** We examined correlations between IM-4 subscales (i.e., MM—Achievement Orientation and MM—Unrestricted Mobility) and situational well-being (Positive Affect and Negative Affect) to assess convergent validity. In partial support of our hypothesis, MM—Unrestricted Mobility was statistically correlated with Negative Affect ( $r = .22, p < .05$ ) and not with Positive Affect ( $r = .15, ns$ ). MM—Achievement Orientation was not correlated with either situational well-being measures.

### Study 3: Test–Retest Reliability

#### Purpose

The purpose of Study 3 was to conduct a 2-week test–retest reliability of IM-4 subscales (i.e., MM—Achievement Orientation and MM—Unrestricted Mobility). We hypothesized IM-4 subscales would be stable over time.

#### Method

**Participants.** Participants in Study 3 consisted of 38 self-identified Asian American undergraduate students from a large Southwestern university. Their mean age was 22 ( $SD = 3.1$ ), with 22 women and 16 men. Generational status included 11 first-generation, 12 second-generation, and 15 third-generation students. Self-identified ethnic groups included 26 Chinese, 5 Korean, 3 multiracial/multiethnic, 2 Filipino, 1 Vietnamese, and 1 Japanese. Family income included 9 individuals who reported \$20k–\$39k, 10 reported \$40–\$59k, 9 reported \$60k–\$79k, 3 reported

\$80k–\$99k, and 7 reported \$100k or more. Students were distributed across classes (first year = 3; second year = 5; third year = 3; fourth year = 10; other = 17). Their mean self-reported cumulative college GPA was 3.54 ( $SD = 0.31$ ).

**Procedure.** The recruitment and procedure in data collection for Study 3 were the same as Study 1. After the first administration, participants received \$5 and the opportunity to complete a second administration of IM-4 subscales for an additional \$10 two weeks following. Of the 38 participants, 37 completing the first administration completed the second administration.

### Results

**Two-week test–retest reliability.** Two-week test–retest reliability estimates for MM—Achievement Orientation and MM—Unrestricted Mobility were adequate (.72 and .70, respectively).

**Descriptive and internal reliability.** At Time 1, mean scores for MM—Achievement Orientation and MM—Unrestricted Mobility were 5.37 ( $SD = 0.96$ ) and 3.12 ( $SD = 0.96$ ), respectively. The internal consistency reliability of MM—Achievement Orientation ( $\alpha = .92$ ) and MM—Unrestricted Mobility ( $\alpha = .77$ ) subscales were acceptable. The correlation between MM—Achievement Orientation and MM—Unrestricted Mobility subscales was not significant ( $r = .05, ns$ ).

At Time 2, mean scores for MM—Achievement Orientation and MM—Unrestricted Mobility were 5.01 ( $SD = 0.91$ ) and 3.41 ( $SD = 0.77$ ), respectively. The internal consistency reliability of MM—Achievement Orientation ( $\alpha = .92$ ) and MM—Unrestricted Mobility ( $\alpha = .68$ ) subscales were acceptable. The correlation between MM—Achievement Orientation and MM—Unrestricted Mobility subscales was not significant ( $r = .20, ns$ ).

### Summary and General Discussion

The purpose of the present investigation was to provide a report on a new measure of internalization of the model minority myth for Asian American college students. In three studies, we provided evidence for the validation of the 15-item IM-4 with two subscales. The Model Minority Myth of Achievement Orientation referred to the myth of Asian Americans' greater success than other racial minority groups associated with their stronger work ethics, perseverance, and drives to succeed. The Model Minority Myth of Unrestricted Mobility referred to the myth of Asian Americans' greater success than other racial minority groups associated with their stronger belief in fairness of treatment and lack of perceived racism or barriers at school/work. Overall, there was support for the validity and reliability of IM-4 subscales. The two-subscale structure of the IM-4 was supported by a combination of exploratory and confirmatory factor analyses, with evidence of internal reliability and stability over 2 weeks. There also was support for discriminant, convergent, and incremental validity of the IM-4 subscales, although it was not as strong. In addition, results suggest the separate use of the IM-4 subscales because (a) there was consistent mean differences between subscales across three studies, (b) intercorrelations between subscales were relatively small across three studies, and (c) confirmatory factor analyses in Study 2 demonstrated the orthogonal factors model was comparable to the correlated factors model and better than the single-factor model.

In partial support of discriminant validity, there were small or nonsignificant correlations between IM-4 subscales and Asian American values. In particular, the Model Minority Myth of Achievement Orientation was related to Collectivism, Conformity to Norms, and Family Recognition through Achievement, and not Emotional Self-Control and Humility. Similarly, the Model Minority Myth of Unrestricted Mobility was related to Conformity, Self-Control, and not Collectivism, Achievement, and Humility. The only exception was the medium correlation between the Model Minority Myth of Achievement Orientation and Family Recognition through Achievement where emphasis on academic and professional achievements was shared as both constructs and wording of items. Generally, these patterns of small or nonsignificant correlations may be consistent with the values shared between the IM-4 subscales and Asian American values. But more importantly, it seems to provide evidence that the Model Minority Myth of Achievement Orientation and the Model Minority Myth of Unrestricted Mobility are more than simply Asian American values.

In partial support of convergent validity, there were some significant relations between IM-4 subscales and ethnic identity components. As expected, the Model Minority Myth of Unrestricted Mobility was negatively associated with EI Affective-Pride. Thus, an individual's stronger belief in greater comparative success associated with fairness of treatment and lack of perceived racism or barriers at school/work may elicit a sense of embarrassment and shame as the individual stands out from the group based on their race—accompanied already by preferential treatment by their teachers and teasing by their peers as “nerds” and “geeks” (S. J. Lee, 1996; Qin et al., 2008; Rosenbloom & Way, 2004; Tenebaum & Ruck, 2007). These negative experiences and associated comparative beliefs that make these individuals stand out, in turn, may be viewed as a threat to one's social identity (Tajfel & Turner, 1986), leading to further disidentification and decrease in one's ethnic group pride (Branscombe et al., 1999; R. M. Lee, 2005; Pyke, 2003). Alternatively, the belief in one's group experiencing less racism than other groups may be incongruent with these individuals' daily experiences of personal racism causing cognitive dissonance, and group disidentification may be a way to cope with the stress. However, the Model Minority Myth of Achievement Orientation was positively associated with EI Affective-Pride, not supporting our hypothesis. It suggested an individual's stronger belief in comparative success associated with working harder increased the person's ethnic group pride. Even though the image of Asian Americans having greater success than other racial minorities associated with working harder is a myth, internalizing this positive typecast may have some benefits related to ethnic group pride. However, whether this positive relationship is true or simply explained by a third variable (i.e., individuals who are already successful or endorse strong Asian American values) remains to be seen in future research. Alternatively, the positive correlation between the Model Minority Myth of Achievement Orientation and EI Affective-Pride may be a function of the positively worded content of our items. Thus, individuals endorsing characterization of their group as academically successful, harder workers, and having stronger work ethics are more likely to express pride in their ethnic group. Finally, there were no relationships between IM-4 subscales and EI—Cognitive-Clarity and EI—Behavioral-Engagement. This may suggest that the signifi-

cance of internalizing the model minority myth is less important to the cognitive and behavioral aspects of ethnic identity than the affective component.

There also were positive correlations between IM-4 subscales with distress symptoms and situational well-being. This is consistent with the literature that suggests internalization of overly positive images of Asian Americans as the model minority can be psychologically damaging to Asian Americans (Chun, 1995; Cohen, 2007; F. Wong & Halgin, 2006). However, it is important to note that these correlations were small. One possibility is the restriction in our range of samples. In particular, our samples performed academically well (i.e., high GPA) and adverse psychological consequences of internalizing the model minority myth may be worse for individuals who are not as successful or performing well (Cocchiara & Quick, 2004). In addition, the Model Minority Myth of Unrestricted Mobility was more likely to be correlated with psychological distress and situational well-being than the Model Minority Myth of Achievement Orientation. This may suggest that believing in the myth of comparative success associated with Asian Americans' greater belief in fair treatment and lack of perceived racism may be more harmful than the myth of comparative success associated with Asian Americans' stronger work ethics, perseverance, and drives to succeed. This may be due to the level of perceived control related to each myth. Several scholars have argued that perceived control plays a central role in the link between racism and well-being (Branscombe & Ellemers, 1998; Crocker & Major, 1989), with experiences of racism decreasing perceived control, in turn, decreasing well-being (Moradi & Hasan, 2004). It is reasonable that the Model Minority Myth of Achievement Orientation may be associated with greater perceived control (i.e., one simply needs to work harder) than the Model Minority Myth of Unrestricted Mobility (i.e., not experiencing racism or barriers). Thus, perceived control may explain why there is or is not a relationship between IM-4 subscales with distress symptoms and situational well-being. Alternatively, IM-4 subscales may have differential significance on different outcome measures. Although the Model Minority Myth of Unrestricted Mobility may be more relevant to affective and somatic distress measures, the Model Minority Myth of Achievement Orientation may be more important to performance distress measures. This is consistent with the finding from Cheryan and Bodenhausen (2000), who reported priming common stereotypes of Asians' mathematical prowess decreased math performance by Asian Americans because of their diminished ability to concentrate.

In partial support of incremental validity, there was a significant relation between the Model Minority Myth of Unrestricted Mobility and Somatic Distress, above and beyond the effects from Asian American values and ethnic identity components. This supports the unique contribution and significance of internalization of the model minority myth (in particular, the myth related to unrestricted mobility) on distress symptoms, in addition to the already established literature on the importance of Asian American values and ethnic identity in the lives and well-being of Asian Americans (B. S. K. Kim, 2007; B. S. K. Kim et al., 2005; R. M. Lee, 2005; R. M. Lee & Yoo, 2004; Uba, 1994; Yoo & Lee, 2005, 2008). The significant relations on somatic distress and not on general stress or performance difficulty may be due to greater sensitivity, experience, and expression of psychosomatic complaints among Asian Americans (R. M. Lee, Su, & Yoshida, 2005; Takeuchi, Chun,

Gong, & Shen, 2002; Uba, 1994). It is also important to point out that some of the Asian American values and ethnic identity components had a more consistent relationship across the three distress measures (while controlling for other related variables) compared with either of the IM-4 subscales. In particular, Family Recognition through Achievement positively related to General Distress and Performance Difficulty. EI Cognitive-Clarity negatively related to General Distress and Somatic Distress. This suggests some Asian American values and ethnic identity components may be more important to psychological distress and well-being of Asian American lives compared with the internalization of the model minority myth associated with achievement orientation or unrestricted mobility.

There are a number of limitations that are worth mentioning and should be addressed in future research. First, generalizability of our measure is limited to an academically successful, diverse group of Asian American college students. Especially, because the model minority myth has a tendency to overgeneralize the success of all Asian Americans, it is critical to understand how the IM-4 factor structure and its relationships vary by the diversity found among Asian Americans, including differences in ethnic backgrounds, immigration experiences, language, geographical locations, and socioeconomic statuses. In addition, the extent to which the IM-4 factor structure and its relationships are found outside the college population is important, including examining its fit with high school adolescents when exploration of meaning in race and ethnicity developmentally peaks (Phinney, 1992; Uba, 1994) and community adult samples who may have more direct vocational consequences from the model minority myth (Woo, 2000).

Second, the overall evidence of both convergent and discriminant validity of the IM-4 was not as clear or strong, particularly given the generally small effect sizes across criterion measures. A notable concern was the lack of a stronger relationship between the IM-4 and distress and well-being measures. It may be that these relationships are clinically insignificant, and internalization of model minority messages—regardless of whether they are true or not—is not harmful to the individual's distress and well-being because the message is positive. The small relationships may also be due to restricted range of high-achieving Asian Americans who strongly identify being Asian American (as indicated by high a GPA and data collection from primarily Asian American classes and organizations). Future studies should sample from a more diverse group of Asian Americans with a broader range in academic performance and participation in Asian American activities. In addition, inclusion of stress measures that are more proximal to the experience of Asian Americans should be included such as familial and intergenerational stress, acculturative stress, and racism-related stress (Inman & Yeh, 2007).

Third, the degree to which Asian American individuals internalize the model minority myth messages to be true for their group as opposed to for themselves may not be as clear due to the wording of our items. It is possible that Asian Americans may believe that their group is more successful because they work harder, but not necessarily believe that as individuals they are more successful because they work harder. Although, it can be argued that any agreement with the model minority messages that are inaccurate, and a fallacy is at some level an internalization of the model minority myth—regardless of whether it applies to their group or to themselves. The stereotype and stereotype threat lit-

erature highlights this point, as priming one's race and stereotype can significantly influence stereotypic-consistent behaviors regardless of personal belief in those stereotypes (Aronson, Quinn, & Spencer, 1998; Steele & Aronson, 1995), often internalized at an unconscious level (Devine, 2001; Devos & Banaji, 2005). For instance, Devos and Banaji found that Asian Americans unconsciously believed that Asian Americans were less "American" than White Americans, even though they disagreed with this perpetual foreigner stereotype. Nevertheless, future research should examine more closely the impact of model minority myth messages endorsed at a group versus an individual level.

Fourth, the medium effect size between the Model Minority Myth of Achievement Orientation and the Asian American Values of Family Recognition through Achievement was larger than expected. Although we highlighted this relationship, and it may simply be a function of shared variance due to similarities in construct and wording of items, it is still possible that the model minority myth (in particular, the Model Minority Myth of Achievement Orientation) and its assumptions of racial comparative success is better explained by Asian American values rather than the greater individual efforts and mobility as defined by our measure. Future studies should continually disentangle the nuanced relationships found between the model minority myth, cultural values, and individual efforts and mobility.

There is a burgeoning literature highlighting dangers in the overly positive caricature of Asian Americans as the model minority, although its impact is less known in the field of psychology. This preliminary report in the development of a new measure of internalization of the model minority myth contributes to this growing literature, stimulating continual discussion and research directly assessing the psychological impact of these myths. The IM-4 has a wide range of research and clinical applications. For instance, studies can now identify the extent to which internalization of the model minority myth and its subtypes affect academic outcomes (e.g., academic identification, self-efficacy, performance, and choice in major/career path), social outcomes (e.g., intercultural competency, social/family relationship satisfactions and conflict), and health outcomes (e.g., depression, anxiety, shame, and high blood pressure). In therapy, clinical assessment of the IM-4 may help identify the type of Asian American clients seeking therapy or who have issues that they are willing or not willing to discuss. For instance, Asian American clients who strongly internalize the Model Minority Myth of Achievement Orientation may feel embarrassed in talking about their academic or career difficulties. The IM-4 may also help in the clinical intervention to help externalize and normalize performance difficulties associated with the model minority myth.

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### Correction to Armstrong and Vogel (2009)

In the article “Interpreting the Interest-Efficacy Association from a RIASEC Perspective” by Patrick Ian Armstrong and David L. Vogel (*Journal of Counseling Psychology, 56*, 392–407), an incorrect value was reported for the correlation between Artistic and Social occupational interests in Table 1 (p. 400), incorrect values were reported for some of the fit indices presented in Table 2 (p. 402), and incorrect values were reported for the fit indices presented in Table 5 (p. 404). The correct value for the correlation between Artistic and Social occupational interests is  $r = .44$ . The following fit indices are correct for the Structural Equation Models presented in Table 2 and Table 5:

Table 2  
*Summary of SEM Model Fit Indices*

Model	Chi-square	df	RMSEA	RMSEA 90% CI	SRMR	NFI	CFI	IFI
1a. Separate Interest and Efficacy								
Latent RIASEC Variables	1949.61	186	0.13	.12; .13	0.053	0.91	0.92	0.92
1b. Model 1a with method factors	1174.78	162	0.096	.091; .10	0.056	0.94	0.95	0.95
2a. RIASEC Latent Variables	5037.81	237	0.26	.25; .26	0.10	0.76	0.77	0.77
2b. Model 2a with method factors	1321.20	189	0.098	.093; .10	0.055	0.94	0.95	0.95

*Note.* RMSEA = Root Mean Square Error of Approximation; CI = Confidence Interval; SRMR = Standardized Root Mean Residual; NFI = Normed Fit Index; CFI = Comparative Fit Index; IFI = Incremental Fit Index.

Table 5  
*Re-Analysis of Models Specifying Longitudinal Interest-Efficacy Relationships*

Model	Chi-square	df	RMSEA	RMSEA 90% CI	SRMR	NFI	CFI	IFI
Base model <sup>a</sup>	25.44	12	0.071	.029; .11	0.079	0.97	0.98	0.98
Simultaneous	15.37	7	0.074	.018; .13	0.053	0.98	0.99	0.99
Efficacy-Antecedent <sup>a</sup>	9.93	6	0.055	.00; .12	0.036	0.99	0.99	0.99
Interest-Antecedent	13.18	6	0.074	.01; .13	0.045	0.98	0.99	0.99
Bidirectional <sup>a</sup>	4.59	3	0.050	.00; .14	0.027	0.99	1.00	1.00

*Note.* RMSEA = Root Mean Square Error of Approximation; CI = Confidence Interval; SRMR = Standardized Root Mean Residual; NFI = Normed Fit Index; CFI = Comparative Fit Index; IFI = Incremental Fit Index. Results obtained from analyzing data presented in Table 1 of Lent et al. (2008) using LISREL 8.80.

<sup>a</sup> Model as specified in Lent et al. (2008).