DISSERTATION

THE DEVELOPMENT AND VALIDATION OF THE MENTORING FUNCTIONS MEASURE

Submitted by

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ABSTRACT

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This study developed and provided validation evidence for a new measure of mentoring functions, the Mentoring Functions Measure (MFM). Existing measures of mentoring functions suffer from flaws that the present study aimed to reduce or eliminate. This study had three primary goals: (1) to develop a new measure of mentoring functions, (2) to provide reliability and validity evidence for the measure, and (3) to connect the measure to socioemotional selectivity theory, a theory of aging.

In the first phase of the study, 98 items were created based on dimensions that had been used in previous research. These items were reviewed by subject matter experts (SMEs), after which the number of items was reduced to 78. In the second phase, the measure was further refined after being completed by 487 participants in the United States through Amazon Mechanical Turk (MTurk); all participants were currently in an informal mentoring relationship and working at least part-time. Through item analysis, exploratory factor analysis, and confirmatory factor analysis, the MFM was refined and finalized. The MFM consists of 12 items, demonstrates good reliability evidence, and is comprised of three factors: Career functions, Trust & Acceptance functions, and Relationship functions. Construct validity evidence was obtained, with the MFM generally correlating more strongly with the MFQ-9 than with transformational or paternalistic leadership. Criterion-related validity evidence was also established, with MFM subscales predicting affective outcomes (job satisfaction and life satisfaction), health outcomes

(burnout), and cognitive outcomes (personal learning). The MFM was expected to demonstrate known-groups validity evidence, using socioemotional selectivity theory; younger protégés were expected to prefer a mentor who exhibits more career functions, and older protégés were expected to prefer a mentor who exhibits more psychosocial functions. However, no significant differences were found in mentor preference based on protégé age. Due to the scale development best practices used to develop the MFM, as well as the reliability and validity evidence established in this study, the MFM can be used by both researchers and practitioners to measure mentoring functions.

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The Development and Validation of the Mentoring Functions Measure

Organizations worldwide are interested in implementing mentoring programs for their employees. Some organizations provide formal mentoring programs in which employees are required to participate, while others encourage informal mentoring relationships that develop naturally. Empirical evidence indicates that mentoring works. Both formal and informal mentoring appear to have benefits for both the mentor and the protégé (Allen, Eby, Poteet, Lentz, & Lima, 2004; Allen, Lentz, & Day, 2006), and mentoring is also believed to help women and minorities reach higher levels in an organization (Bearman, Blake-Beard, Hunt, & Crosby, 2007).

Although the definition of mentoring has evolved over time (Haggard, Dougherty, Turban, & Wilbanks, 2011), one of the most widely-used conceptualizations of mentoring is that of Kram (1985). Kram described mentoring as an interpersonal, developmental relationship between someone who is more senior and experienced (the mentor) and someone who is more junior and less experienced (the protégé, or mentee). Mentoring relationships can be formal or informal (Chao, 1992; Kram, 1985). Formal mentoring relationships are those that are assigned and managed by the organization, whereas informal mentoring relationships happen spontaneously and are not managed by the organization. They may not occur in the workplace at all; for example, an informal mentoring relationship might be the result of a chance meeting at a networking or social event. Informal mentoring relationships, in contrast to formal mentoring relationships, have been found to be more beneficial to protégés in terms of compensation, career outcomes, and perceived effectiveness (Ragins & Cotton, 1999; Underhill, 2006), and for this reason informal mentoring relationships will be the focus of the present paper.

As noted above, mentoring appears to have many benefits, both for the mentor and for the protégé, but most research has focused on benefits to the protégé. Several meta-analyses have found that having a mentor is related to numerous positive outcomes, such as higher job satisfaction, career satisfaction, expectations for advancement, career commitment, compensation, and promotions (Allen et al., 2004; Kammeyer-Mueller & Judge, 2008). A study in Germany found that protégés also engaged in increased networking behaviors, which predict career success (Blickle, Witzki, & Schneider, 2009). As for mentors, Allen et al. (2006) found that acting as an informal mentor to others is related to more subjective career success, higher compensation, and higher rates of promotion. A recent meta-analysis of mentor outcomes found that mentors (as opposed to non-mentors) indicated greater job satisfaction, organizational commitment, job performance, and career success (Ghosh & Reio, 2013).

Mentoring Functions and their Measurement

Kram (1985) first delineated primary mentoring functions, which she defined as "those aspects of a developmental relationship that enhance both individuals' growth and advancement," and that "are the essential characteristics that differentiate development relationships from other work relationships" (p. 22). These broad categories of functions Kram labeled career functions and psychosocial functions. Career functions are those that prepare the protégé for advancement, whereas psychosocial functions focus on improving the protégé's sense of professional competence, identity, and effectiveness.

Kram's (1985) broad career function includes the subfunctions of sponsorship, exposure-and-visibility, coaching, protection, and challenging assignments. *Sponsorship*, the most common of the career subfunctions, occurs when the mentor actively tries to increase the likelihood of the protégé's advancement. For example, a mentor may act as a proponent for the

protégé upon hearing that a more senior position will be opening up in the organization. *Exposure-and-visibility* occurs when the mentor gives some sort of work to the protégé that will require the protégé to interact with an important person in the organization. *Coaching* involves teaching protégés what they need to know, such as enhancing knowledge, giving advice, and providing strategies to be successful. *Protection* occurs when the mentor shields the protégé from something or someone who could be detrimental to their career. For example, the mentor might take blame for something that the protégé did wrong or if the protégé did something controversial. Protection can be both good and bad; too much protection can keep the protégé from career advancement. Finally, *challenging assignments* occur when the mentor provides the protégé with challenging work that will increase both the protégé's specific competencies as well as the protégé's sense of accomplishment.

Kram's (1985) broad psychosocial function includes the subfunctions of role modeling, acceptance-and-confirmation, counseling, and friendship. *Role modeling*, the most frequently executed psychosocial subfunction, occurs when the protégé sees the mentor as someone to be admired and emulated. In some later measures, as will be explained later, role modeling has been categorized as its own major function (along with career and psychosocial functions). *Acceptance-and-confirmation* occurs when there is mutual respect in the mentoring relationship, and the mentor supports and encourages the protégé. *Counseling* involves the mentor helping the protégé with internal issues that might be problematic, such as anxieties and fears. Finally, *friendship* is when the mentor and protégé consider themselves to be friends and talk about aspects of their lives both within and outside of work. They share informal social interactions, though these are largely contained within the work context.

Measuring mentoring functions is important for several reasons. Measuring the functions provided enables a researcher to quantify what types of behaviors mentors use to develop protégés. This also would allow for the comparison of mentoring relationships. For example, one could use a mentor's score on a particular function, such as a career function, and compare that score to another mentor's score on the same function. In addition, measures of mentoring functions enable subsequent research to examine the relationships between characteristics of the mentoring relationship and specific outcomes, such as increased learning or job satisfaction. From a practical perspective, measuring and quantifying mentor functions could assist in developing mentor training programs or providing developmental feedback to mentors.

Numerous measures of mentoring functions have been based on Kram's (1985) work. Noe (1988) partially based his 21-item scale on Kram's work, choosing to categorize items into eight functions with no broad, overarching functions; he named these coaching, acceptance and confirmation, role model, counseling, protection, exposure and visibility, sponsorship, and challenging assignments. Another common measure is the Global Measure of Mentoring Practices developed by Dreher and Ash (1990), who used 18 items taken from both Noe's (1988) measure and an earlier measure developed by Whitely, Dougherty, and Dreher (1988); all items were based on Kram's (1985) work. Ragins and McFarlin (1990) also based their 33-item Mentor Role Instrument on Kram's work, but they added two additional psychosocial subscales: social and parent. Scandura and Ragins (1993) developed a 15-item Mentoring Measure, which was based on Scandura's (1992) measure. The Scandura and Ragins' (1993) measure was later reduced to nine items and became known as the MFQ-9 (Castro & Scandura, 2004); it is one of the most common mentoring measures used today. Fowler and O'Gorman (2005) developed a mentoring functions measure that focused on the subcategories of mentoring functions as

opposed to the broad psychosocial and career functions used by other measures. This 36-item measure was based on interviews with both mentors and protégés, and the resulting eight categories were personal and emotional guidance, coaching, advocacy, career development facilitation, role modeling, strategies and systems advice, learning facilitation, and friendship. These categories are closely related to many of those described by Kram (1985). St-John (2011) developed a 12-item measure of entrepreneurial mentoring functions, and Janssen, van Vuuren, and de Jong (2013) used self-determination theory to come up with 17 new categories of mentoring functions. See Appendix A for a summary of all functions and subfunctions used in previous measures.

Developing a New Measure

It can be argued that due to the existence of numerous measures of mentoring functions, there is not a need for another. However, there is no generally accepted measure of mentoring (Pellegrini & Scandura, 2005), in part because existing measures have serious issues regarding the nature of the items, the extent of the content area covered, and general lack of validity evidence. The MFQ-9 has recently received more attention than other measures, with a number of studies investigating its construct validity. For example, Hu (2008) demonstrated the MFQ-9's construct equivalence across gender, though men and women did respond differently to one item, while Hu, Pellegrini, and Scandura (2011) investigated the MFQ-9's invariance across culture (the United States and Taiwan). While there is evidence of construct equivalence across groups and cultures, the MFQ-9 has serious measurement issues. First, the MFQ-9 does not assess many of the different types of mentoring functions that a mentor can provide. While the measure does address vocational support, psychosocial support, and role modeling, with only three items per category, many of the important subfunctions that mentors provide cannot be addressed by this

measure. Second, Pellegrini and Scandura (2005) demonstrated that the MFQ-9 does not appear to work equivalently for both satisfying and dissatisfying relationships; five of the items had greater variances and higher reliabilities for dissatisfied protégés than for satisfied protégés, indicating that satisfied and dissatisfied protégés respond differently to some of the items. It is possible that the items of the MFQ-9 are biased toward satisfied protégés, which would be a serious problem with the measure and could affect relationships between the receipt of mentoring functions and outcome variables such as job satisfaction.

Another potential problem with the MFQ-9 (Castro & Scandura, 2004) and the original scale on which it was based (Scandura & Ragins, 1993) is that they used an orthogonal (not an oblique) rotation, assuming that the mentoring functions were uncorrelated. We know from past research that mentoring functions are correlated (e.g., Mullen, 1998; Tepper, Shaffer, & Tepper, 1996), and they should have been allowed to be correlated when the MFQ-9 was created. By conducting an orthogonal rotation, the authors forced the selection of items such that career, psychosocial, and role modeling functions were uncorrelated, so how effective a mentor was on one function would be unrelated to how effective he or she was on the others.

The partial measurement invariance found in the MFQ-9 for satisfied and dissatisfied protégés indicates that the measure may be biased toward producing correlations between mentor functions and *important* mentoring outcomes. As noted previously, mentoring has been shown to be related to positive outcomes such as salary growth, promotions, career satisfaction, satisfaction with the mentor, and job satisfaction (Allen et al., 2004). However, the items of the MFQ-9, and those of other mentoring measures, are biased toward finding some of these positive outcomes. Items such as “My mentor has devoted special time and consideration to my career,” from the vocational support function of the MFQ-9, will likely bias results to be correlated with

satisfaction with the mentor and will not result in much variance for a satisfied protégé. A satisfied protégé will probably rate this item highly, whereas a dissatisfied protégé may or may not rate this item highly. For example, the satisfied protégé may not know what exactly "special time and consideration" means; he may just know that he is satisfied with the extent of attention he is getting. However, a dissatisfied protégé may have had more experience with what "special time and consideration" may mean, and he is better able to judge the extent of attention received from his mentor. If this item were worded in a different way, such as "My mentor rarely devotes extra time to my career," then one might expect more variance in the response for satisfied as well as dissatisfied protégés.

Creating a new measure of mentoring functions that eliminates problems seen with other measures, such as items that are nonequivalent across satisfied and dissatisfied protégés, will benefit both researchers and organizations. A more valid measure would be important for mentoring researchers, as they would be able to use the measure in future research to more accurately determine the extent of the relationships between mentoring functions and outcomes such as job satisfaction. As previously noted, it is possible that the relationship between mentoring functions and protégé job satisfaction likely has been inflated due to how the items are written in existing mentoring functions scales. Organizations would also benefit from an improved measure of mentoring functions, as they would be better able to base decisions (such as how they could better train mentors on particular functions) on more accurate information coming from researchers. If an organization is interested in increasing employee satisfaction, for example, and use of an improved functions measure finds that receiving mentoring is not related to job satisfaction, then the organization might be less interested in encouraging informal mentoring of its employees.

In this study, I develop a new measure of mentoring functions. In Phase 1, I create a large number of items based on the existing literature and have subject matter experts (SMEs) review the items in order to reduce the total number of items and provide content validity evidence. In Phase 2, I conduct exploratory and confirmatory factor analyses to further refine the scale. I provide construct validity evidence in Phase 3 and criterion-related validity evidence in Phase 4.

Phase 1: Item Generation and Reduction

As mentioned in the previous section on the history of measures of mentoring functions, numerous dimensions have been proposed in the past. For the development of the present measure, the Mentoring Functions Measure (MFM), items were created based on all dimensions that have been used in previous research. Doing this increased the likelihood that the content domain would be covered sufficiently. Based on what has been found in previous research, the items were expected to fall into three broad dimensions: career functions, psychosocial functions, and role modeling functions.

Item Generation

Items were created based on all functions and subfunctions that have been developed in prior research on mentoring functions in the workplace. These categories include those described by Kram (1985), as well as the social and parent categories from Ragins and McFarlin (1990). I also included items addressing St-John's (2011) numerous psychological functions (reflector, reassurance, motivation, confidant), career-related functions (integration, information support, confrontation, guide), and role model function (model). In addition, I included items addressing the 22 categories proposed by Janssen et al. (2013). Some items were based on items used in other measures, while others were created based solely on the description of the category. In addition to the nine dimensions previously developed by other researchers (sponsorship, protection, exposure-and-visibility, coaching, challenging assignments, acceptance-and-confirmation, counseling, friendship, and role modeling), I added an additional psychosocial subfunction (encouragement and motivation) based on previous mentoring function items that

did not seem to fit in the other categories. See Appendix B for all MFM items used in pilot testing and/or used in data collection.

The majority of existing measures of mentoring functions have included three main functions: career, psychosocial, and role modeling. Most of the measures have also included either subfunctions of those three broad functions or numerous individual, more specific functions. Although there has been disagreement regarding whether or not there are overarching functions over subfunctions, I expected my measure to have a similar structure to the majority of the past measures. Therefore, in line with prior theory and measures of mentoring functions, I expected my final measure to consist of three broad functions (career, psychosocial, and role modeling), and for the career and psychosocial functions to include subfunctions. I created items for five subscales based on career functions (sponsorship, protection, exposure and visibility, coaching, challenging assignments) and five subscales based on psychosocial support (acceptance and confirmation, counseling, friendship, encouragement and motivation, role modeling). Encouragement and motivation was a new subscale created based on behaviors that were referenced in the literature but did not seem to fit neatly with the other pre-established subscales. One of the aims of this study, however, was to determine if this factor structure (regarding functions as well as subfunctions) is indeed the appropriate one based on the data. Because I anticipated that my final measure would be approximately 30-35 items to ensure that each subcategory includes several items, I therefore aimed to create at least 70 potential items. This was based on Hinkin's (1998) recommendation of creating at least twice as many items as will be retained in the final measure. I actually created 98 potential items.

Item Review and Reduction

In this initial stage of the study, graduate students were recruited to review and give feedback on the 98 potential items developed for the MFM. These graduate student SMEs provided content validity evidence by categorizing each item, and they also rated each item on its relevance, clarity, and conciseness. They were also given the opportunity to provide written feedback on each item.

Sample. Participants were 12 graduate students in the online Master of Applied Industrial/Organizational Psychology (MAIOP) program at Colorado State University. Of the 12 SMEs, seven were male and five were female, and they were between 23 and 54 years old. All SMEs were taking at least one class, working at least part-time, and had been a protégé in a mentoring relationship. By using working students in the MAIOP program as SMEs, I could expect them to have basic knowledge of mentoring relationships and have the background to be able to evaluate the quality of survey items.

Procedure. In order to assess the content validity of the proposed items, I generally followed the procedures outlined by Anderson and Gerbing (1991) to establish what they call substantive validity. Anderson and Gerbing proposed two indices to assess substantive validity. The first is the proportion of substantive agreement, which is the proportion of respondents who indicate that the item reflects its intended construct. The second is the substantive-validity coefficient, which is the extent to which respondents rate that an item represents its intended construct as opposed to other constructs.

The content validity process was conducted online using Qualtrics. The 12 MAIOP students served as subject matter experts (SMEs). These SMEs needed to be working at least

part-time to participate. For the judgment task, I followed a two-step procedure recommended by Anderson and Gerbing (1991) to assess content validity for multifaceted constructs.

SMEs were presented with each item, which they first categorized as falling under the broad categories of psychosocial functions, career functions, role modeling, or "other." To aid this judgment, SMEs were provided with a definition of psychosocial functions, career functions, and role-modeling. If they chose psychosocial functions, they were presented with the psychosocial categories of acceptance and confirmation, counseling, encouragement and motivation, friendship, or "other." If they chose career functions, they were presented with the categories of sponsorship, exposure and visibility, coaching, protection, challenging assignments, or "other." If they choose "other," they were asked to provide a new category name. Each of the subfunctions for both psychosocial and career functions were defined. These subfunctions represented those that had been most frequently used in previous research, with the addition of encouragement and motivation, and I expected the subsequent factor analyses to support these subfunctions. No subfunctions under role modeling have been proposed in past research, so if participants chose role modeling, they were not presented with subcategories to choose from. Finally, if the SMEs chose "other," they were asked how they would categorize the item. I was then able to follow the procedures described by Anderson and Gerbing (1991) to calculate the proportion of substantive agreement and the substantive-validity coefficient.

After SMEs categorized each item one at a time, I followed the recommendations of DeVellis (2012) and had SMEs rate each item on its relevance, clarity, and conciseness. At this point each SME was also able to make a comment on the item. After categorizing and rating all items, I asked SMEs for feedback on whether or not they felt the content domain was accurately

assessed by the items. They were asked to explain their response if they felt that the domain was not accurately covered; in this way they were able to explain what they felt was missing.

Results

A total of 98 items were created based on the previous mentoring literature (see Appendix B for all items). Although Hinkin (1998) recommended eliminating any items in which the proportion of substantive agreement among SMEs is less than 75%, I used this number as a general guideline due to the small number of SMEs and the large number of possible subscales. In general, I eliminated items with a proportion of substantive agreement less than 75%; however, I also took into account SMEs' ratings of relevance, SME comments regarding the items, and the support in the literature for the behaviors described. I followed a similar procedure for assessing the substantive-validity coefficient, and in general I retained those items that had the highest substantive-validity coefficient. As noted previously, the substantive-validity coefficient refers to the extent to which respondents rate that an item represents its intended construct as opposed to other constructs. The substantive-validity coefficient is calculated by subtracting the highest number of SMEs who categorized an item as representing a construct other than the one intended from the number of SMEs who categorized the item as representing its intended construct, and dividing that difference by the total number of SMEs who categorized the item. Seventy-eight items were retained for Phase 2.

Phase 2: Instrument Refinement

Method

In Phase 2, participants recruited through Amazon Mechanical Turk (MTurk) responded to all MFM items that remained from Phase 1. Exploratory and confirmatory factor analyses were conducted in order to determine the final scale and factor structure.

Sample. In this study, participants were obtained using Amazon Mechanical Turk (MTurk). Amazon Mechanical Turk is a website at which people from all over the world complete online surveys and receive minimal payment as compensation. The researcher can specify how many respondents are wanted, as well as their demographic characteristics. Buhrmester, Kwang, and Gosling (2011) and Casler, Bickel, and Hackett (2013) found that MTurk samples are significantly more diverse than the typical college sample often used in psychological research. In addition, Buhrmester et al. (2011) found that MTurk respondents tend to be internally motivated and therefore will participate for minimal compensation. The resulting data also appear to be roughly equivalent, in terms of alphas and test-retest reliabilities, to data obtained traditionally. Another study found that increasing the payment actually decreased the quality of the data (Chandler et al., 2014), and additional studies have also found evidence that MTurk results are sufficiently reliable (Behrend, Sharek, Meade, & Wiebe, 2011; Holden, Dennie, & Hicks, 2013). Although some researchers have expressed concern about inattentive responding (e.g. Fleischer, Mead, & Huang, 2015), Hauser and Schwarz (in press) recently found that MTurk samples were as or more attentive than typical college student samples.

I initially targeted a sample size of 500, and paid participants $1 for their time. Although Hoelter (1983) recommended a minimal sample size of 200 for confirmatory factor analysis,

Comrey (1988) classified a sample of 500 as very good. Tinsley and Tinsley (1987) recommended having five to ten participants per item, but only up to 300 participants; after that, diminishing returns on additional participants can be expected (DeVellis, 2012). Having a larger sample increases the generalizability of the measure, and I hoped that with a larger sample I would obtain more variation in the demographics of the sample.

For the present study, all participants were from the United States. For validation purposes (as described below) I sought to have approximately 100 participants of age 18-24, 100 of age 25-34, 100 of age 35-44, 100 of age 45-54, and 100 of age 55+. To accomplish this, I cut off participation by age group once approximately 100 had participated; for example, once I had 100 participants in the 18-24 age range, I would only allow those 25 years of age or older to participate. Older participants (age greater than 45) were harder to obtain using an MTurk sample, but were necessary for the last set of research questions.

In this study, I focused exclusively on participants who reported being in an informal mentoring relationship. Most mentoring relationships are informal (Phillips-Jones, 1983), and research suggests that informal mentoring relationships lead to more positive outcomes (Chao, Walz, & Gardner, 1992; Ragins & Cotton, 1999). Evidence also suggests that functions may be different for informal and formal relationships. Career functions have been found to be more prevalent in informal relationships than they are for formal relationships (Chao et al., 1992; Ragins & Cotton, 1999), and some psychosocial subfunctions have also been found to be more prevalent in informal than formal relationships (Ragins & Cotton, 1999). Thus, in order to narrow the scope of the project but create a scale meaningful to the most common mentoring relationships, I only used participants from informal relationships.

***Demographics*.** In the initial version of the survey (without added consistency items; see "Addition of items" section), 328 participants completed the survey and data were retained for 277 of those participants. In the second version of the survey (with added consistency items), 265 participants completed the survey and data were retained for 210 of those participants. In total, I retained data from 487 participants (260 males, 227 female) after having deleted data from participants who answered inconsistently. Participants ranged from 18 to 94 years old, with a mean age of 39.0. The number of participants in each age range was fairly similar (100 participants aged 18-24, 104 participants aged 25-34, 97 participants aged 35-44, 98 participants aged 45-54, and 87 participants aged 55 or older; one participant did not report his age). Most participants reported working in the same organization as their mentor (332 in the same organization, 115 in different organizations), and most had a mentor who was not their direct supervisor (127 mentors were direct supervisors, 360 were not). Slightly more mentors were male (n = 274) than female (n = 213). Of the 487 participants, 485 reported being from the United States; one identified as Indian and one as Filipino. Most participants reported being in their mentoring relationship for fewer than four years (155 participants for less than one year, 202 participants for one to three years, 67 participants for four to six years, 32 participants for seven to nine years, and 31 participants for ten or more years).

Addition of items. Partway through the study, I suspected that not all participants were paying close attention while completing the survey. The reasons for this suspicion were short response times for some participants, as well as suspiciously high levels of agreement with reverse-scored items. As a comparison, McGonagle (2015) recently reported sometimes finding over 30% inattentive respondents in her research using MTurk.

Due to my suspicions regarding inattention, I added an item to each subscale to check for inconsistent responding. The additional items were the approximate reverse of another question in the subscale; for example, the Sponsorship subscale contains the item "My mentor actively helps me get promotions." To check for consistency, I added an item that stated "My mentor actively keeps me from getting promotions." Out of the ten additional consistency items, I deleted data from participants who inconsistently responded to four or more. In a recent article, Paolacci and Chandler (2014) discussed inattention in MTurk samples and noted that attention may not be consistent throughout a study. Deleting data from participants who inconsistently responded to four or more of the new consistency items led to a deletion rate of 29%, which is consistent with McGonagle's (2015) report of finding 30% inattentive respondents. I wanted to delete data from participants who probably were not paying attention most of the time, but due to the possibility that participants may have occasionally misread one of the consistency items (they were worded backwards from other items), as well as possible occasional lack of concentration, participants who inconsistently responded to three or fewer items (out of the possible ten) were retained for further analyses.

Procedure. In this phase of the study, participants responded to all items that were retained at the end of Phase 1. They also provided demographic information (age, gender, nationality) and answered items regarding the nature of their most recent mentoring relationship (e.g., whether or not it was assigned, if the mentor is in the same organization, if the mentor is the protégé's direct supervisor), their mentor's gender, and the duration of their mentoring relationship. All of these variables are proposed to affect mentoring outcomes (Dougherty & Dreher, 2007), so I expected to use them as control variables. In addition, participants also responded to items asking about expected time left in their organization, expected time left in

their career, and overall preference for mentor functions. These final three questions were relevant for and described in Phase 5.

When responding to the potential Mentoring Functions Measure (MFM) items, participants indicated, on a Likert scale from 1-5 (1 = *strongly disagree*, 5 = *strongly agree*), the extent to which they agreed that the item was characteristic of their mentor. Participants were asked to think of their current mentor when responding to each item.

Results

Item analysis. As recommended by DeVellis (2012), item analyses were initially performed to determine which of the 78 items performed most poorly (e.g., had little variance, had very high means, were unrelated to other items, etc.). Items means and variances, as well as inter-item correlations were evaluated. Items with very high means (> 4.2) and very low variances (< .6) were flagged. In addition, items with very high inter-item correlations (indicating redundancy) were flagged, as well as those that had low correlations within the subscale. No items were negatively correlated within subscales. No item exclusion decisions were made based on flagging the items, but this information was considered when reducing items in the factor analyses.

Exploratory factor analysis. An initial exploratory factor analysis (EFA) was conducted with all 78 items included in order to determine the number of factors and to reduce the total number of items. Due to the varying number of factors chosen for past measures of mentoring functions, exploratory factor analysis was chosen as the first step in reducing the number of items and determining factor structure, after which confirmatory factor analysis could be used to further reduce the items. As recommended by Ford, MacCallum, and Tait (1986) and Rummel (1970), principal axis factoring with an oblique oblimin rotation was used so that the resulting

factors could be correlated. In an oblimin rotation, the researcher can elect to inspect the pattern matrix, the structure matrix, or both to interpret factors. Factor loadings in a pattern matrix represent regression coefficients, while loadings in a structure matrix represent correlations between the variables and the factors. When all items were included in the EFA, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.95, which is greater than the .9 value considered to be superb (Hutcheson & Sofroniou, 1999) and indicates that factor analysis should yield distinct and reliable factors. Bartlett's test of sphericity was also significant (χ^2 (3003) = 22383.62, $p < .001$), rejecting the null hypothesis that the variables in the population correlation matrix are uncorrelated and further indicating that factor analysis would be appropriate.

According to Ford et al. (1986), once a factor extraction model is chosen, the next important decision is the number of underlying factors in the data. Multiple criteria were used to decide on the number of factors, including scree plots (Cattell, 1966), variance accounted for, interpretability, and existing theory. As described earlier, past theory and measures have categorized functions primarily into two-factor models (e.g., Kram, 1985), three-factor models (e.g., Castro & Scandura, 2004), and eight-factor models (Noe, 1988). The three-factor model (specifically, Castro & Scandura's MFQ-9) has been the most widely accepted and frequently used, and is drawn from Kram's (1985) theoretical work. When the number of factors is debatable, such as in this case, retaining a factor structure similar to that proposed by theory may be desirable.

That said, the possibility existed that the items as a set could generate more than three (or even five, or eight) factors. This study is the first comprehensive effort to measure everything that mentors do; therefore, items were drawn from forty-one different functions that have been proposed in the literature from various perspectives (mentoring literature, entrepreneurship

literature, etc.). Prior models of mentoring functions were narrower and did not attempt to include items from the entire content domain. Accordingly, it is not surprising that a factor analysis of all items would reveal the potential for factors beyond the number specified in a narrower model.

An examination of the resulting scree plot suggested that the factor structure was not clear, with three, five, or even ten factors all possible. Additionally, only 41.6%, 47.3%, and 57.1% of the common variance were predicted by those, respectively. In general, items loaded onto factors resembling the original subscales for which they were written. By choosing too few factors, items loading onto less important (but nonetheless unique) factors were at risk of being discarded. Reducing the items to fit a three-factor structure, however, would allow the model to fit the data and for the content domain to be sufficiently addressed. Pattern matrices for each solution also suggested that three factors might be most appropriate. By hiding factor loadings lower than 0.2 and looking at how the items were clustered, a three factor model made conceptual sense when reading the items themselves, and the entire content domain was represented by those items. Although there was some support for the five-factor model (by looking at the pattern matrix as well as the eigenvalues), in which Role Modeling and Challenging Assignments were their own factors, the three-factor model made the most conceptual sense and coincided with existing theory.

The first of the three factors included items from the Acceptance, Coaching, Role Modeling, Encouragement & Motivation, and Counseling subscales; I decided to name this factor *Trust & Acceptance*. The second factor included items from the Sponsorship, Exposure & Visibility, Challenging Assignments, and Coaching subscales; this factor I named *Career*. Finally, the third factor included items from Friendship, Counseling, Acceptance & Motivation,

Role Modeling, and Encouragement & Motivation subscales; I named this factor *Relationships*. Although there was some overlap in items from original subscales loading onto different factors, closer inspection of the item wordings indicated that the items were indeed referencing different aspects of mentoring even though they were originally placed in the same subscale.

From looking at the various options for factor solutions, it became apparent that some of the problems I was having with model fit came from the inclusion of the proposed Protection subscale. Although this subscale did not appear in the three or five factor model, it was one of the factors in the ten factor model. Recall that this subscale had items such as "My mentor will sometimes take credit for controversial decisions I have made," and "My mentor will sometimes take the blame for me." There were two apparent problems with the content of these items. First, as mentioned, it was difficult to find an interpretable factor solution when protection items were included. Second, it can be questioned whether protection as a concept is on a bipolar or unidirectional scale. That is, unlike the other proposed subfactors, for which more of the behavior is better, protection can be good or bad. Protection from a mentor to some extent is a supportive and positive behavior, but too much protection can be stifling, inhibit learning, and lead to negative repercussions (Kram, 1985).

When developing their measure of mentoring functions, Fowler and O'Gorman (2005) found that protection did not emerge as an important factor in their initial EFA (they retained eight factors based on eigenvalues, of which protection was not one), and the authors therefore did not include protection in subsequent analyses. The authors reasoned that protection may not be as beneficial as it once was, which was why it did not appear to be important in their study but was supported by Kram (1985). As an example, they noted that Cordes and Gibson (1996) found negative outcomes related to protection (e.g., lower salary and fewer promotions). Accordingly,

because of both the problems of item directionality and model fit, I decided to eliminate all protection items from subsequent data analysis.

After deciding to eliminate the protection items and explore a three-factor model, another EFA was conducted using Principal Axis Factoring and oblimin rotation while being constrained to three factors. The resulting Kaiser-Meyer-Olkin measure of sampling adequacy was 0.95, and Bartlett's test of sphericity was also significant (χ^2 (2415) = 2002.70, $p < .001$). This time the rotation converged in 17 iterations.

By examining the full pattern matrix (see Appendix C) and structure matrix (see Appendix D), I chose 10 to 12 of the best items for each of the three factors. This number of items was chosen because it would allow me to eliminate items that fit most poorly with the factor structure while still retaining a large number of items representative of the entire content domain and allowing me to conduct further analyses. Items were eliminated if they had lower factor loadings than the other items, loaded similarly high on multiple factors, or had a negative factor loading on one factor and a positive factor loading on another. When choosing which items to retain from those that remained, items were selected based on high factor loadings and representativeness of the content domain; i.e., an attempt was made to retain items from all the initially proposed subscales. For example, at one stage there were six potential items in the Career factor; two were Sponsorship items, two were Exposure & Visibility items, one was a Challenging Assignments item, and one was a Coaching item. Although the Coaching and Challenging Assignments items had the two lowest factor loadings, they were retained for the next round of items because they were each the last item from the original subscale. Had I not taken this step of retaining some items even if they did not have the highest factor loadings, the resulting items would have represented only exposure and visibility, role modeling, and

friendship. By intentionally choosing items that represented more variety in the content domain, a more representative final scale could be obtained. Once the items were reduced to 10 to 12 for each factor, a series of confirmatory factor analyses were conducted to further reduce the number of items and determine a final scale that would best represent the data. A total of 32 items were retained for further analyses.

Confirmatory factor analysis. Version 6.11 of Mplus (Muthén & Muthén, 1998) was used to compare CFA models based on the correlation matrix of all original items. Based on the exploratory factor analysis, I was interested in reducing the three-factor model to include items that were diverse regarding the content domain and resulted in a model that fit the data well. I began with the three-factor model that resulted from the exploratory factor analysis and systematically reduced the items, as described below.

Item reduction. The aim of this step was to reduce the number of items to include those that were representative of the content domain and best fit the data, with the practical result of having a shorter and more parsimonious final scale. Such a scale would be useful for researchers and especially practitioners who often must strive for good validity evidence with the fewest number of items. An iterative process was performed in which the fit statistics were examined after removing an item to determine if the resulting items resulting in a better or worse fit. Items with the lowest factor loadings were removed to determine if their removal improved fit statistics. Different permutations of items were chosen and the fit statistics examined each time.

An attempt was made to include a variety of items that covered the mentoring functions content domain, with items from the majority of the original proposed subscales (Harvey, Billings, & Nilan, 1985; and Hinkin, 1998). For example, for the Career factor, at one stage I had eight items: two Sponsorship items, three Exposure & Visibility items, two Challenging

Assignments items, and one Coaching item. In this iteration, the item with the lowest factor loading was Challenging Assignments 2 (0.58), and I therefore eliminated this item. Another Challenging Assignments item remained in the Career factor, so I did not feel that I would be eliminating an essential part of the content domain. In this step, I also eliminated one item from Trust & Acceptance and two items from Relationship using this same procedure, and I examined the fit statistics afterwards; chi-square increased from 927.94 to 494.69, RMSEA decreased from .09 to .08, and the CFI increased from .84 to .89. In the next stage, I began the Career factor with seven items and eliminated Exposure & Visibility 7. This item did not have the lowest factor loading, as the factor loading was .66 while Sponsorship 6 had a factor loading of .65, Coaching 6 had a factor loading of .63, and Challenging Assignments 1 had a factor loading of .59. However, there were already two other items from Exposure & Visibility in the Career factor, and I did not want to over-represent that construct. In addition, removing either Challenging Assignments 1 or Coaching 6 would have removed the last item from those constructs. Again, I followed this same procedure for Trust & Acceptance (I eliminated one item; I did not eliminate any Relationship items in that particular iteration). Fit statistics improved again, with chi-square improving to 306.21, RMSEA improving to .07, and the CFI improving to .93. This process was continued until four items were chosen for each of the three factors.

When items were chosen, some remaining items were from the perspective of the protégé, and some were actionable items regarding behaviors of the mentor. Both types of items were left in the measure. Although some of the items are not actionable per se, they are important indicators of the underlying construct and are still indicative of mentoring functions. Had they not been representative of the factors, they would have been eliminated due to low factor loadings or low inter-item correlations.

Criteria for model fit. Confirmatory factor models were compared based on three fit indices: chi-square, the comparative fit index (CFI: Bentler, 1990), and the root mean square error of approximation (RMSEA: Marsh, Balla, & Hau, 1996). The smaller the chi-square value the better, though chi-square is particularly sensitive to sample size (Bearden, Sharma, & Teel, 1982) and is therefore not the best option when testing or comparing models. The CFI assesses the relative improvement in fit of the model being tested based on the null (independence) model, in which all variables are uncorrelated. CFI is less sensitive to sample size than chi-square (Fan, Thompson, & Wang, 1999). A cutoff of .90 is commonly used, though Hu and Bentler (1999) recommend a CFI of greater than .95. A CFI between .90 and .95 is generally considered to be acceptable fit (Bentler, 1990). RMSEA takes sample size into account, and favors simpler models because it includes a correction for model complexity (Kline, 2005). While there has been some debate regarding setting cutoffs for RMSEA (Chen, Curran, Bollen, Kirby, & Paxton, 2008), Hu and Bentler (1999) considered a value of less than .06 to be good fit.

Results of model comparisons. The goodness-of-fit indices can be found in Table 1. Goodness of fit indices for an initial three-factor model using all 32 items retained from the EFA were suboptimal, suggesting stronger fitting models were possible, $\chi^2(461) = 1720.36$, $p = .00$, RMSEA = 0.08 (90% CI = 0.07 - 0.08), CFI = 0.83. Based on factor loadings and their representativeness of the content domain, seven items were deleted and the CFA was re-run, with better resulting fit statistics: $\chi^2(272) = 1141.03$, $p = .00$, RMSEA = 0.08 (90% CI = 0.08 - 0.09), CFI = 0.85. This process was continued until representative items were chosen for each factor and good fit was obtained: $\chi^2(51) = 181.28$, $p = .00$, RMSEA = 0.07 (90% CI = 0.06 - 0.08), CFI = 0.94. The final scale consisted of 12 items, with four items for each of the three factors. The factor correlations for the MFM can be seen in Table 2.

Table 1

Initial and Final Fit Statistics for the MFM

Fit Statistic	Initial	Final
χ^2	1720.36	181.27
RMSEA	.08	.07 (CI: .06 - .08)
CFI	.83	.94

Table 2

Factor Correlations for the Mentoring Functions Measure (MFM)

	1	2	3
1. Trust & Acceptance	-		
2. Career	0.31	-	
3. Relationship	0.60	0.48	-

The final solution can be seen in Table 3. As shown in the table, there are three factors covering three main content areas: Trust & Acceptance, Career, and Relationships. Career represents the career functions as they have been proposed in past theory and measures, with the notable absence of protection items; one item each was chosen from the Sponsorship, Exposure & Visibility, Challenging Assignments, and Coaching subscales. Psychosocial functions, as previously conceptualized, were separated into two functions: Trust & Acceptance, and Relationship. Trust & Acceptance includes two items from the Acceptance subscale, with the items addressing the mentor respecting and trusting the protégé. One item from the original Encouragement subscale is included ("My mentor makes me feel like I have what it takes to be successful"), and one trust-related Role Modeling item is also included ("My mentor is trustworthy"). The Relationship factor includes two items from the original Friendship subscale, one item from the original Counseling subscale, and one item from the original Role Modeling subscale ("I admire my mentor's significant relationships with others").

Table 3

Standardized MFM Factor Loadings

		Standardized Factor Loading
	Trust & Acceptance	
1.	Acceptance & Confirmation 8 – My mentor respects me.	0.78
2.	Role Modeling 5 – My mentor is trustworthy.	0.67
3.	Encouragement & Motivation 1 – My mentor makes me feel like I have what it takes to be successful.	0.68
4.	Acceptance & Confirmation 10 – My mentor trusts me.	0.82
	Career	
5.	Sponsorship 6 – My mentor lets me know about opportunities for promotion.	0.66
6.	Exposure & Visibility 3 – My mentor introduces me to important people in my organization.	0.72
7.	Challenging Assignments 1 – My mentor provides me with opportunities for challenging work.	0.58
8.	Coaching 6 – My mentor familiarizes me with the work environment.	0.70
	Relationship	
9.	Friendship 3 – My mentor and I have a close personal relationship.	0.86
10.	Friendship 2 – My mentor is my friend.	0.84
11.	Counseling 1 – My mentor encourages me to talk openly about my fears.	0.54
12.	Role Modeling 10 – I admire my mentor's significant relationships with others.	0.55

Subscale properties. To assess reliability, I calculated coefficient alpha for each four-item subscale. See Table 4 for the alphas, means, and standard deviations for the subscales. Final alphas were 0.82 (Trust & Acceptance), 0.79 (Relationship), and 0.76 (Career); although higher alphas would have been desirable, these reliability estimates are considered to be good (Nunnally, 1978). Means for the subscales were 3.85 for Relationship, 3.92 for Career, and 4.27 for Trust & Acceptance. Trust & Acceptance was expected to have a high mean because role modeling is such an important aspect of mentoring. Although this mean was high, standard

deviations indicated that there were variation in scores; standard deviations ranged from 0.57 (Trust & Acceptance) to 0.78 (Relationship).

Table 4

Alphas, Means, and Standard Deviations for MFM Subscales

Subscale	Alpha	*N*	*M*	*SD*
Trust & Acceptance	.82	487	4.27	0.57
Career	.76	487	3.92	0.69
Relationship	.79	487	3.85	0.78

Phase 3: Evidence of Construct Validity

Having established my 12 item scale, I sought to determine evidence of the construct validity of the scale using additional data collected concurrently with the 78 mentoring function items. In the following section, I discuss other constructs measured and make predictions about the expected relationship with my mentoring function scales. Finally, I present the results for these construct validity analyses.

Construct validity refers to the extent to which one can make inferences based on the measure of interest to other constructs based on theoretical assumptions, and construct validity evidence establishes that a measure assesses the intended construct (Cronbach & Meehl, 1955). Part of that evidence is convergent and discriminant validity. Convergent validity is supported when the new measure correlates well with other measures that assess similar constructs. Discriminant validity is supported when the new measure does not correlate with, or correlates to a lesser extent with, measures of constructs that should not be similar to the measure being validated (Campbell & Fiske, 1959).

Convergent Validity

To establish convergent validity, participants also completed the MFQ-9 (Castro & Scandura, 2004). It was expected that the Mentoring Functions Measure (MFM) would correlate highly with the MFQ-9, as they are both measures of mentoring functions. Both measures address the same general behaviors, though the MFM is more extensive than the MFQ-9.

Hypothesis 1: Scores on the Mentoring Functions Measure will correlate strongly with scores on the MFQ-9.

Discriminant Validity

A measure of paternalistic leadership was used to help establish discriminant validity. Paternalistic leadership is a management style in which the manager acts in a fatherly manner; the manager is interested in all aspects of the subordinate's life, and gives advice and makes decisions without the subordinate's input. A paternalistic manager is disciplinary and an authority figure, but his or her intentions are good (Pellegrini & Scandura, 2008).

Scandura and Pellegrini (2007) argued that paternalistic leadership and mentoring are two different constructs. First, paternalistic leadership is a leader-based approach; the main focus is on the leader's behaviors, such as making decisions regarding an employee without that employee's input. Mentoring is a follower-based approach, focusing on the protégé and what the protégé can get out of the relationship. Second, paternalistic leadership relates to what the leader wants and thinks is best, while mentoring also addresses what the protégé wants and how the protégé can benefit from the relationship. The protégé participates in decision-making.

Hypothesis 2: Scores on the Mentoring Functions Measure will be moderately correlated with scores on a measure of paternalistic leadership.

Transformational leadership was also assessed to provide discriminant validity evidence. Transformational leaders inspire and motivate their followers to achieve a vision or goal (Bass & Riggio, 2005). Though there are many similarities between transformational leadership and mentoring, transformational leadership is expected to be different from mentoring. Transformational leadership is more focused on increased performance (Bass, 1985), while mentoring is more focused on development (Kram, 1985). In addition, transformational leadership and career mentoring have been found to be complementary – they are similar, but not

the same. They have been found to have incremental effects over each other in predicting affective outcomes (Scandura & Williams, 2004).

Hypothesis 3: Scores on the Mentoring Functions Measure will be moderately correlated with scores on a measure of transformational leadership.

Method

Participants and procedure. The participants and procedure were the same as in Phase 2. To establish convergent and discriminant validity, additional measures were provided to participants at the same time as they responded to the items from Phase 2.

Measures.

MFQ-9. The MFQ-9 (Castro & Scandura, 2004) includes nine items; three measure vocational support, three measure psychosocial support, and three measure role modeling. The MFQ-9 uses a 5-point Likert response scale, and respondents rate each item from 1-5 (1 = *strongly disagree*, 5 = *strongly agree*). An example item is "My mentor takes a personal interest in my career" (vocational support). Kwan, Liu, and Yim (2011) found that the MFQ-9 demonstrated good internal consistency reliability (for career support, psychosocial support, and role modeling: α = .86, α = .75, α = .79, respectively). See Appendix E for the complete list of items.

Paternalistic leadership. To measure paternalistic leadership, I used Pellegrini and Scandura's (2006) 13-item measure (α = .86), with the word "mentor" replacing "manager," and "protégé" replacing "employee" to reflect an informal mentoring relationship. Changing the wording in such a way should not affect what is actually being measured, as this scale focuses on the specific behaviors and not the target. "Manager" is only used once, in the introductory stem, and the items themselves simply describe a behavior. Respondents rate each item on a Likert

scale from 1-5 (1 = *strongly disagree*, 5 = *strongly agree*). A sample item is "Gives advice to his/her employees (*protégés)* on different matters as if he/she were an elder family member." See Appendix F for the complete list of items.

Transformational leadership. To assess transformational leadership, I used the seven-item Global Transformational Leadership scale (GTL) developed by Carless, Wearing, and Mann (2000). Respondents rate items on a 5-point Likert scale (1 = *rarely to never*, 5 = *very frequently, if not always*), rating their mentor in terms of how frequently he or she engages in the behavior described in each item. The target (the mentor in this case) is not actually described by these items; instead, the GTL items simply describe behaviors. In this way, I was able to easily apply the scale to mentors. I slightly modified the wording of a few items to imply protégés instead of staff, but as with the paternalistic scale, due to the focus on behaviors I did not expect my minor modifications to change what the scale is measuring. Carless, Wearing, and Mann (2000) found that the GRL demonstrated high internal consistency reliability (α = .93). A sample item is "My mentor communicates a clear and positive vision of the future." See Appendix G for the complete list of items.

Results

Evidence of construct validity (both convergent and discriminant) is traditionally demonstrated by the pattern of resulting correlations among the new measure with measures of constructs that should theoretically be strongly related or not strongly related to the construct of interest (Campbell & Fiske, 1959). Scores on the construct of interest should be more strongly correlated with scores on constructs that should be related to the construct of interest than with scores on constructs that should not be as strongly related. Although this is a fairly subjective approach, it is the most common way of establishing construct validity evidence.

The factor structure of the MFM is not such that the score can be aggregated into one; rather, scores on each of the subscales are to be calculated separately. Therefore, each of the three MFM subscales was separately correlated with the other measures.

Hypothesis 1. As can be seen in Table 5, subscale scores on the MFM generally correlated well with the MFQ-9. The MFM Career subscale correlated most strongly with the career functions subscale of the MFQ-9 (r = .53), and the MFM Relationship subscale correlated most strongly with the psychosocial functions subscale of the MFQ-9 (r = .75). Surprisingly, the Trust & Acceptance subscale of the MFM correlated equally with both the Career and Role Modeling subscales of the MFQ-9 (r = .54), and its correlation with the Psychosocial subscales of the MFQ-9 was actually lower (r = 46). Due to the overall high correlations of the MFM subscales with the MFQ-9 subscales, Hypothesis 1 was supported.

Table 5

Correlations among MFM Subscales and Construct Validity Measures

Scale	MFQ-9 CF	MFQ-9 PF	MFQ-9 RM	PL	TL
Trust & Acceptance	.54	.46	.54	.32	.50
Career	.53	.18	.38	.35	.28
Relationship	.49	.75	.57	.68	.35

Note. MFQ-9 CF = Career Functions subscale of the MFQ-9. MFQ-9 PF = Psychosocial Functions subscale of the MFQ-9. MFQ-9 RM = Role Modeling subscale of the MFQ-9. PL = Paternalistic Leadership. TL = Transformational Leadership. All correlations were significant at $p < .001$.

Hypotheses 2-3. Correlations among the MFM subscales and the Paternalistic Leadership and Transformational Leadership scales provided further support for the construct validity of the MFM. Overall, scores on the MFM subscales were more strongly correlated with the MFQ-9 than with paternalistic or transformational leadership. However, Relationship was an exception; it was strongly correlated with paternalistic leadership (r = .68). MFM scores were

more strongly correlated with paternalistic leadership than with transformational leadership for Career (r = .35 vs. r = .28), though there was some overlap in 90% confidence intervals (CI with paternalistic leadership: .28-.47; CI with transformational leadership: .21-.35). MFM scores were also more strongly correlated with paternalistic leadership than with transformational leadership for Relationship (r = .68 vs. r = .35), with no overlap in 99% confidence intervals (CI with paternalistic leadership: .61-.74; CI with transformational leadership: .25-.45). Trust & Acceptance was more strongly correlated with transformational leadership (r = .50) than with paternalistic leadership (r = .32), again with no overlap in 95% confidence intervals (CI with paternalistic leadership: .24-.40; CI with transformational leadership: .43-.57). Due to the moderate correlations that the MFM demonstrated with paternalistic and transformational leadership, Hypotheses 2 and 3 were supported.

Phase 4: Criterion-Related Validity

Having established evidence of the construct validity of the MFM in Phase 3, in Phase 4 I used even more data collected concurrently with the 78 mentoring function items in order to provide criterion-related validity evidence. In the following section, I discuss potential outcome measures and make predictions about the expected relationship with my mentoring function scales. Finally, I present the results for these criterion-related validity analyses.

Criterion-related validity refers to how well the measure to be validated predicts various outcomes. In an attempt to assess different types of outcome variables, in this study I chose to look at affective variables (job satisfaction, life satisfaction), a health-related variable (burnout), and a cognitive variable (learning).

Job Satisfaction

Previous research has found that other mentoring functions measures are related to job satisfaction (Castro, Scandura, & Williams, 2004) and that receiving formal mentoring is related to job satisfaction (Egan & Song, 2008). Although Egan and Song (2008) focused on formal mentoring, receiving informal mentoring should have a similarly positive correlation with job satisfaction. Previous meta-analyses have found that just being mentored is related to greater job satisfaction (Allen et al., 2004; Underhill, 2006), and Ragins and Cotton (1999) found that protégés in informal mentoring relationships reported more career and psychosocial functions than protégés in formal mentoring relationships. It therefore stands to reason that if protégés in informal mentoring relationships are receiving more quality mentoring on multiple functions than those in formal relationships, and if mentoring functions in formal relationships are related to job satisfaction, then protégés in informal mentoring relationships who report receiving more

quality mentoring on multiple functions would also report higher job satisfaction. The receipt of more quality mentoring on multiple functions can be quantified by higher ratings on items, which indicates that the mentor exemplifies more of that characteristic or exhibits more of that behavior.

Hypothesis 4: The receipt of quality mentoring on multiple functions will be positively related to job satisfaction.

Life Satisfaction

Although Wanberg, Welsh, and Hezlett (2003) proposed that life satisfaction would be an outcome of mentoring, it has not been investigated much in the work mentoring literature. Allen et al. (2004) found that those who had a mentor reported better subjective outcomes, such as career satisfaction, so it seems likely that mentored individuals would also report higher life satisfaction. Research also indicates that job satisfaction and life satisfaction are positively correlated (Rice, Near, & Hunt, 1980). In the youth mentoring literature, DuBois and Silverthorn (2005) found that youth who felt close to their mentor reported higher levels of life satisfaction. A logical assumption is that someone who feels accepted by their mentor, considers their relationship a type of friendship, and receives some sort of counseling from their mentor (all psychosocial functions), will feel closer to their mentor and therefore report higher life satisfaction. Thus, while being mentored should predict life satisfaction, this should be particularly true for those protégés who receive psychosocial support and feel closer to their mentor. I therefore predicted that receiving more mentoring functions will be related to greater life satisfaction, but that this relationship will be stronger for psychosocial functions.

Hypothesis 5: The receipt of quality mentoring on multiple functions will be positively related to life satisfaction.

Hypothesis 6: The receipt of psychosocial functions will be more strongly related to life satisfaction than will the receipt of career functions.

Burnout

It is expected that mentoring will be negatively correlated with burnout. Mentoring has previously been shown to be negatively related to other health outcomes, such as role stress (Baugh, Lankau, & Scandura, 1996), and positively related to stress reduction (Kram & Hall, 1989). In a study of public accounting firms, mentoring was found to positively predict organizational socialization, which negatively predicted burnout (Kleinman, Siegel, & Eckstein, 2001). More recent research suggests that nonsupervisory mentoring has a direct effect on organizational socialization, which in turn leads to reduced role stress and, subsequently, reduced burnout (Thomas & Lankau, 2009). Thus it was predicted:

Hypothesis 7: The receipt of quality mentoring on multiple functions will be negatively related to burnout.

Learning

Another important mentoring outcome is increased learning. Although many mentoring studies have investigated the relationship between mentoring and career outcomes such as promotions and salary (Allen et al., 2004; Kammeyer-Mueller & Judge, 2008), comparatively little research has been conducted exploring the relationship between mentoring and learning (Allen & Eby, 2003). However, learning as an outcome has been included in an influential model (Wanberg et al., 2003) and overview articles (e.g., Scandura & Pellegrini, 2007) as an important proximal outcome of mentoring. Recently, researchers have begun to include learning as a criterion variable in mentoring studies, and receipt of mentoring has been found to be related to

learning (Hezlett, 2005; Kleinman et al., 2001). It was therefore expected that mentoring functions, as assessed by the MFM, will also be related to increased learning.

Hypothesis 8: The receipt of quality mentoring on multiple functions will be positively related to protégé learning.

Method

Participants and procedure. The participants and procedure were the same as in Phase 2. To establish criterion-related validity, additional measures were provided to participants at the same time as they responded to the items from Phase 2.

Measures.

Job satisfaction. Global job satisfaction was assessed with the job satisfaction scale used by Pond and Geyer (1991), which includes six items and is a modified version of Quinn and Shepard's (1974) scale. A sample item is "All things considered, how satisfied are you with your current job?" Responses range on a Likert scale from 1-5, with specific responses varying based on the question. For example, for the aforementioned item, responses range from 1 = *definitely not take the job* to 5 = *definitely take the job.* Pond and Geyer (1991) found that this instrument demonstrated high internal consistency reliability (α = .89). See Appendix H for the complete list of items.

Life satisfaction. Life satisfaction was assessed with the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; α = .87). A sample item is "If I could live my life over, I would change almost nothing." Respondents rate each of the five items on a Likert scale from 1-7 (1 = *strongly disagree*, 7 = *strongly agree*). See Appendix I for the complete list of items.

Burnout. Burnout was assessed with the 18-item Burnout Measure (Pines & Aronson, 1988). Respondents indicate how often they experience each of the feelings described by the items; responses are given on a Likert scale from 0-6 (0 = *never*, 6 = *always*). A sample item is "Being emotionally exhausted." The Burnout Measure has high internal consistency reliability (α = .94; Cropanzano, Howes, Grandey, & Toth, 1997). See Appendix J for the complete list of items.

Learning. Learning was measured with Lankau and Scandura's (2002) 12-item Personal Learning Measure (α = .84), which assesses relational job learning and personal skill development. A relational job learning item is "I have increased my knowledge about the organization as a whole." A sample personal skill development item is "I have become more sensitive to others' feelings and attitudes." Respondents rate each item on a Likert scale from 1-5 (1 = *strongly disagree*, 5 = *strongly agree*). See Appendix K for the complete list of items.

Results

Correlations between the MFM subscales and the criterion-related validity measures can be seen in Table 6.

Table 6

Correlations among MFM Subscales and Criterion-Related Validity Measures

Scale	Job Sat.	Life Sat.	Burnout	RJL	PSD	Learning
Trust & Acceptance	.40	.25	-.34	.50	.56	.57
Career	.37	.19	-.24	.57	.42	.54
Relationship	.33	.30	-.27	.40	.46	.47

Note. Job Sat. = Job Satisfaction. Life Sat. = Life Satisfaction. Burn = Burnout. RJL = Relational Job Learning. PSD = Personal Skill Development. All correlations were significant at $p < .001$.

Hypothesis 4. Hypothesis 4 predicted that the receipt of mentoring functions would be positively related to job satisfaction. Multiple regression was conducted to examine the relationship between the receipt of mentoring functions and job satisfaction. The resulting ANOVA was significant, $F(3, 483) = 45.60$, $p < .001$, $R^2 = .22$. Inspection of the individual predictors indicated that all three subscales significantly predicted life satisfaction (Career: $\beta = .24$, $p < .001$; Trust & Acceptance: $\beta = .23$, $p < .001$; Relationship: $\beta = .14$, $p = .006$). Hypothesis 4 was therefore supported.

Hypothesis 5. Hypothesis 5 predicted that the receipt of mentoring functions would be positively related to life satisfaction. Multiple regression was conducted to examine the relationship between the receipt of mentoring functions and life satisfaction. The resulting ANOVA was significant, F (3, 483) = 18.74, $p < .001$, $R^2 = .10$. Inspection of the individual predictors indicated that only Relationship significantly predicted life satisfaction: ($\beta = .23$, $p < .001$). However, the Career subscale approached significance ($\beta = .09$, $p = .06$). Hypothesis 5 was therefore supported.

Hypothesis 6. Hypothesis 6 predicted that receipt of psychosocial functions would be more strongly related to life satisfaction than career functions would. As with the construct validity analyses, these analyses were made more complicated by the factor analysis results of three separate factors. A comparison of standardized beta weights indicated that the Relationship subscale ($\beta = .23$, $p < .001$), which is comprised of psychosocial items, is a better predictor of life satisfaction than are career functions ($\beta = .09$, $p = .06$), though the confidence intervals for the beta weights overlapped (Relationship CI: .12-.34; Career CI: -.00-.19). Trust & Acceptance, which is also comprised of psychosocial items, was actually the worst predictor of life satisfaction ($\beta = .07$, $p = .20$). Combining the items from Relationship and Trust & Acceptance

(β = .23, p < .001) and comparing them to Career (β = .09, p = .06) also indicated that psychosocial functions are more strongly related to life satisfaction than career functions are, but again, there was some overlap in the confidence intervals for the beta weights (Career CI: -.01-.19; Psychosocial CI: .12-.34). Therefore, Hypothesis 6 was partially supported.

Hypothesis 7. Hypothesis 7 predicted that the receipt of mentoring functions would be negatively related to burnout. Multiple regression was conducted to examine the relationship between the receipt of mentoring functions and burnout. The resulting ANOVA was significant, F (3, 483) = 25.48, p < .001, R^2 = .14, with both Trust & Acceptance (β = -.24, p < .001) and Career (β = -.12, p = .01) predicting burnout. The Relationship subscale approached significance (β = -.10, p = .06). Hypothesis 7 was therefore supported.

Hypothesis 8. Hypothesis 8 predicted that the receipt of mentoring functions would be positively related to personal learning. Multiple regression was conducted to examine the relationship between the receipt of mentoring functions and personal skill development. The resulting ANOVA was significant, F (3, 483) = 97.28, p < .001, R^2 = .38, and significance was found for all subscales (Trust & Acceptance: β = .35, p < .001; Career: β = .22, p < .001; Relationship: β = .19, p < .001).

Multiple regression was conducted to examine the relationship between the receipt of mentoring functions and relational job learning. The resulting ANOVA was significant, F (3, 483) = 118.76, p < .001, R^2 = .43, and significance was found for all subscales (Career: β = .43, p < .001; Trust & Acceptance: β = .24, p < .001; Relationship: β = .14, p = .001). Hypothesis 8 was therefore supported.

Phase 5: Known Groups Validity

As discussed by Cronbach and Meehl (1955), there are many types of evidence that support the construct validity of a new measure. These include reliability, content validity, convergent validity, discriminant validity, and criterion-related validity – evidence I investigated in Phases 3 and 4. Additionally, evidence can come from known groups validity, in which it is demonstrated that groups that should differ on scores from the measure in fact do. To investigate this type of validity, I examined whether scores on my measure differ across age groups as predicted by socioemotional selectivity theory. This would provide additional validity evidence and would support the use of the MFM in future research, as well as add to the literature on mentoring and aging. Below I discuss socioemotional selectivity theory and derive predictions for scores on my measure.

Socioemotional Selectivity Theory

Socioemotional selectivity theory (Carstensen, 1991, 1992, 1995; Carstensen, Fung, & Charles, 2003; Carstensen, Isaacowitz, & Charles, 1999) posits that social goals have two primary functions: knowledge acquisition and the regulation of emotions. Knowledge acquisition goals focus on learning about both the social and physical world; in the work context, this might include learning about the best ways to network or how to write the perfect memo. Goals related to the regulation of emotion include maintaining close, positive relationships and feeling a sense of meaning or belonging as a result of those relationships. Throughout life, we care about both acquiring knowledge and maintaining meaningful relationships. However, according to socioemotional selectivity theory, our preference for social goals changes throughout our lifespan. When we are young, knowledge acquisition is most salient. Young people believe

(usually correctly) that they have many years ahead of them, so they are focused on seeking new information. Novel, unfamiliar people are advantageous to the young person who wants to acquire new knowledge, so younger people will often seek out interactions with numerous others. There may be emotional costs to doing this, but young people perceive their future as being expansive. To them, acquiring new knowledge is worth the emotional cost. However, when we are older and see time as more limited, emotion-related goals will be most salient. In general, older people will prefer strong, satisfying relationships with fewer people, and will focus more on enjoying the present as opposed to thinking a lot about the future.

While socioemotional selectivity theory is primarily framed in terms of age (younger versus older people), it is not the chronological age of the person that is responsible for their social goal preference; instead, it is the perception of time left. Several studies have found evidence to support this assertion. Carstensen and Fredrickson (1998) found that HIV positive men who were symptomatic showed preferences for social contacts similar to those of older people. However, it is not simply time until death that is important; time until some sort of ending is what is most relevant. Fung, Carstensen, and Lutz (1999) studied Hong Kong citizens shortly before the country's political return to China, when the people perceived the end of an era and many talked of emigrating. One year before the handover, preferences mimicked those found in the United States in previous studies; older people had a preference for relationships that was not found in younger people. However, two months prior to the handover, younger people's preferences mirrored those of older people, with both the young and old preferring relationships with familiar partners over relationships with novel partners. One year after the handover, preferences returned to how they had been one year before the handover.

Although Finkelstein, Allen, and Rhoton (2003) found that older protégés received less career mentoring than younger protégés did, no published research has explored protégés' preferences for mentor functions. However, it seems logical that not everyone wants the same type of mentor. Based on socioemotional selectivity theory, and using the new Mentoring Functions Measure (MFM) developed in Phases 1 and 2, I predicted that younger protégés would prefer a mentor who demonstrates more career functions. Socioemotional selectivity theory would predict that younger protégés should be more interested in seeking new knowledge and sacrificing emotional needs to achieve future success. Older protégés, who see their time as more limited, should prefer more psychosocial functions. Because older people prefer more meaningful and satisfying relationships, acceptance-and-confirmation and friendship would likely be more important to an older protégé than would acquiring new knowledge that might be of use in the distant future.

Due to socioemotional selectivity theory's central tenet of remaining time, and not chronological age, as driving social preferences, I expected that the relationship between age and preference would be moderated by remaining time in the organization and remaining time in the career. If a younger protégé does not expect to spend much more time at his organization, he likely will perceive an ending in the same way an older person would; he would prefer psychosocial functions that focus on the relationship with his mentor. The career functions may not seem as important when the protégé sees his time as limited. However, if a younger protégé expects to remain in the organization for a long time, he is expected to show a preference for career functions that focus on acquiring knowledge and gaining skills necessary for the future. The same pattern was expected for younger protégés who expect to leave their organization in the near future. A young protégé who expects to leave her career in the near future was expected

to prefer to focus on the relationship and be less interested in obtaining knowledge useful for her career. I therefore predicted the following hypotheses:

Hypothesis 9: Younger protégés will prefer career functions to psychosocial functions.

Hypothesis 10: Older protégés will prefer psychosocial functions to career functions.

Hypothesis 11: The relationship between protégé age and mentoring function preference will be moderated by expected time left in the organization and expected time left in the career.

Various studies have investigated protégés' satisfaction with their mentor (e.g., Ragins & Cotton, 1999). Recently, Wanberg, Kammeyer-Mueller, and Marchese (2006) explored the relationship between mentoring functions and protégé satisfaction with the mentor in formal mentoring relationships, and found that more psychosocial mentoring was related to greater satisfaction with the mentor. The same relationship was not found for career mentoring. However, it is possible that the findings were partially due to the nature of formal mentoring relationships; perhaps protégés expected career mentoring from their mentors and were pleasantly surprised when they received psychosocial mentoring as well.

It seems likely that the congruence between the mentor's style and the protégé's preference would affect the protégé's satisfaction with the mentor. Socioemotional selectivity theory, as noted previously, would predict that younger protégés will prefer a mentor who focuses more on career functions and older protégés will prefer a mentor who focuses more on psychosocial functions. It was therefore predicted that younger protégés whose mentors use more psychosocial functions would report lowers levels of satisfaction with their mentor than younger protégés whose mentors use more career functions. Likewise, older protégés whose mentors use

more career functions would report lowers levels of satisfaction with their mentor than older protégés whose mentors use more psychosocial functions.

Hypothesis 12: Age will moderate the relationship between the extent to which a mentor demonstrates a mentoring function and satisfaction with the mentor such that older protégés will be more satisfied with mentors who demonstrate psychosocial functions and younger protégés will be more satisfied with mentors who demonstrate career functions.

Method

Participants and procedure. The participants and procedure were the same as in Phases 2-4. Additional measures were provided to participants at the same time as they responded to the items from Phases 2-4.

Measures.

Preferred mentor function. Preference for mentoring functions was established in two ways. First, protégés were directly asked if they preferred a mentor who provides more guidance regarding career information and knowledge, or a mentor who fulfills more emotional needs, such as friendship and acceptance, and with whom the protégé can have a strong emotional connection. Second, temporally separated in the survey, the protégé was presented with profiles of two different types of mentors. The first mentor displayed career functions, especially coaching and challenging assignments. Providing knowledge was a focal part of this first mentor's profile. The second profile was that of a mentor who displays more psychosocial functions; this mentor exemplified the subfunctions of acceptance-and-confirmation, counseling, and friendship. The protégé was then asked which mentor they preferred.

Expected time left in the organization. Expected time left in the organization was assessed by directly asking participants to respond to the item "How much time do you expect to

remain in your organization?" Participants responded using the following scale: 1 = *less than 1 year*, 2 = *1-3 years*, 3 = *4-6 years*, 4 = *7-10 years*, 5 = *more than 10 years*.

Expected time left in the career. Expected time left in the career was assessed by directly asking participants to respond to the item "How much time do you expect to remain in your career?" Participants responded using the following scale: 1 = *less than 1 year*, 2 = *1-5 years*, 3 = *6-10 years*, 4 = *11-15 years*, 5 = *more than 15 years*.

Satisfaction with the mentor. Protégés' satisfaction with their mentor was evaluated using Ragins and Cotton's (1999) Satisfaction with Mentor Scale (α = .83). This scale consists of four items, and is measured on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). A sample item is "My mentor is someone I am satisfied with." See Appendix L for the complete list of items.

Results

Hypotheses 9-11. For Hypotheses 9, 10, and 11, binary logistic regression was performed to determine if protégé age is related to preference in mentor functions, as well as if the relationship is moderated by time left in the organization and time left in the career. Hypothesis 9 predicted that younger protégés would prefer career functions to psychosocial functions, and Hypothesis 10 predicted that older protégés would prefer psychosocial functions to career functions. The logistic regression model was not statistically significant, $X^2(1) = 3.29$, $p = .07$, though it was approaching significance and correctly classified 57% of the cases. Hypotheses 9 and 10 therefore were not supported.

Hypothesis 11 predicted that the relationship between protégé age and mentoring function preference will be moderated by expected time left in the organization and expected

time left in the career. Neither of the interaction terms were significant, so Hypothesis 11 was not supported.

Hypothesis 12. In this study, the MFM is used by the protégé to explain the extent to which the protégé's mentor utilizes different mentoring functions in their relationship. Hypothesis 12 predicted that age would moderate the relationship between the extent to which a mentor demonstrated a mentoring function and satisfaction with the mentor. Multiple regression was conducted to determine if the relationship between all three functions and satisfaction with the mentor was moderated by protégé age; the two predictors and the interaction were entered into a simultaneous regression model. Protégé age had a significant main effect on satisfaction with the mentor, $F(1, 484) = 18.29$, $p < .001$), with older protégés reporting lower levels of satisfaction with their mentors. Trust & Acceptance had a significant main effect on satisfaction with the mentor, $F(1, 485) = 410.26$, $p < .001$), with those rating their mentor higher on Trust & Acceptance reporting greater satisfaction with their mentor. Career also had a significant main effect on satisfaction with the mentor, $F(1, 485) = 71.40$, $p < .001$), with those rating their mentor higher on Career reporting greater satisfaction with their mentor. Relationship also had a significant main effect on satisfaction with the mentor, $F(1, 485) = 148.69$, $p < .001$), with those rating their mentor higher on Relationship reporting greater satisfaction with their mentor. However, none of the interaction terms were significant; Hypothesis 12 therefore was not supported.

Discussion

The purpose of this research project was to develop a reliable and valid measure of mentoring functions that can be used by both researchers and practitioners. Past measures of mentoring functions did not cover the entire content domain and did not go through a rigorous scale development process to establish validity. The Mentoring Functions Measure, developed in this paper, is an attempt to provide researchers and practitioners with a reliable and valid measure of mentoring functions that does not suffer from the same problems as past measures have.

In this study, working adults currently in an informal mentoring relationship in the United States were recruited through MTurk and completed potential items from the MFM as well as related measures to establish construct and criterion-related validity evidence. The resulting MFM is a reliable and valid measure for use in measuring mentoring functions.

Development, Refinement, and Content Validity of the MFM

The existing mentoring literature and existing measures of mentoring functions were used to develop 98 potential items. Subject Matter Experts (SMEs) then provided content validity evidence by reviewing all of these items, categorizing them and rating each item on its relevance, clarity, and conciseness. The SMEs were also able to provide written feedback on each item, and they were asked if they felt the content domain was accurately covered by the items. Of the original 98 items, 78 were retained for the next stage, in which criterion and construct validity evidence were obtained by having 487 participants on MTurk complete the MFM along with other, related measures. Both exploratory factor analysis and confirmatory factor analyses were

used to determine the final items and their factor structure. The final MFM included 12 items and was comprised of three factors: Trust & Acceptance, Career, and Relationship functions.

Construct Validity Evidence

Construct validity can be established, in part, by the strength of the correlations between the measure of interest and other related (or unrelated) measures. As predicted, the MFM subscales generally correlated well with the MFQ-9. The MFM Career subscale correlated most strongly with the Career functions subscale of the MFQ-9, and the MFM Relationship subscale correlated most strongly with the Psychosocial functions subscale of the MFQ-9. However, the MFM Trust & Acceptance subscale correlated more strongly with the Career and Role Modeling subscales of the MFQ-9 than it did with the Psychosocial subscale of the MFQ-9. The MFM Trust & Acceptance scale did include one role modeling item, which can partly explain the correlation with the Role Modeling subscales, but the other three items were originally items based on psychosocial functions. However, the Psychosocial subscale of the MFQ-9 included only three items ("I share personal problems with my mentor," "I exchange confidences with my mentor," and "I consider my mentor to be a friend"), all of which seem to be related to relationships and not to the full psychosocial content domain. I believe that the MFM Trust & Acceptance subscale would be more strongly related to a psychosocial functions scale that included more of the content domain.

Further support for the MFM's construct validity was established by the correlations among the subscales of the MFM and measures of paternalistic and transformational leadership. For both Career and Trust & Acceptance subscales, MFM subscale scores were more strongly correlated with the MFQ-9 than with the measures of paternalistic or transformational leadership. The MFM Relationship subscale was more strongly correlated with paternalistic leadership,

however, which might be expected based on the items in the Relationship subscale. These items address friendship, the closeness of the relationship, being able to talk about one's fears, and admiring the mentor's relationships with others; at least outwardly, these items appear to reflect aspects of the relationship that are very paternalistic. In addition, because the MFM Relationship subscale is similar to paternalistic leadership, it would make sense that it would be more similar to a measure of paternalistic leadership than it would be to a measure (in this instance, the MFQ-9) that includes a much larger content domain.

Scores on the MFM Career and Relationship subscales were more strongly correlated with paternalistic leadership than they were with transformational leadership, though confidence intervals for the correlations between transformational and paternalistic leadership with the Career subscale overlapped. The MFM Trust & Acceptance subscale was more strongly correlated with transformational leadership than with paternalistic leadership. All these correlations were moderate, therefore providing further evidence of construct validity. By having a strong correlation with the MFQ-9 and moderate correlations with both transformational and paternalistic leadership, construct evidence for the MFM was established. In addition, the strength of the correlations among the MFM functions and the MFQ-9, transformational leadership, and paternalistic leadership were as expected from theory, providing further construct validity evidence.

Criterion-Related Validity Evidence

In this study, I chose to establish criterion-related validity by assessing how MFM scores correlated with affective, health-related, and cognitive outcomes. Two affective outcomes were addressed: job satisfaction and life satisfaction. As predicted based on past research (e.g., Allen et al., 2004; Castro, Scandura, & Williams, 2004; Egan & Song, 2008; Underhill, 2006),

receiving mentoring functions was positively related to job satisfactions in this study; all three subscales significantly predicted protégés' job satisfaction. Only the Relationship subscale significantly predicted protégés' life satisfaction. Although the correlation between life satisfaction and the Relationship subscale was stronger than the correlation between life satisfaction and the Career subscale, the confidence intervals did overlap.

Burnout was chosen as a health-related outcome variable, though mentoring has already been found to be negatively correlated with other health outcomes (such as role stress; Baugh et al., 1996) and positively correlated with stress reduction (Kram & Hall, 1989). Both the Trust & Acceptance and Career subscales predicted burnout, with higher scores on both subscales being related to lower levels of burnout. Learning was chosen as a cognitive outcome variable, and all subscales of the MFM significantly predicted both personal skill development and relational job learning.

Known Groups Validity Evidence

To establish known groups validity, one must demonstrate that intact groups that should have different scores on a measure do in fact score differently on the newly developed measure. In this instance, I attempted to establish known groups validity by investigating whether scores on the MFM differed across age groups, as would be predicted by socioemotional selectivity theory. Socioemotional selectivity theory would predict that younger protégés would prefer a mentor who exhibits more career functions, and older protégés would prefer a mentor who exhibits more psychosocial functions. However, because time remaining (e.g., in life or in a current work situation) is the driving factor behind socioemotional selectivity theory, time left in the organization was expected to moderate the relationship between age and mentor preference. In other words, a young protégé with very little expected time remaining in his organization or

career would exhibit preferences similar to those of an older protégé. However, the results of this study did not support these hypotheses. Younger protégés therefore were not statistically more likely to prefer a mentor who exhibited more career functions, older protégés were not statistically more likely to prefer a mentor who exhibited more psychosocial functions, and there was no moderation of the relationship based on time left in the organization or time left in the career.

Socioemotional selectivity theory would also predict that age would moderate the relationship between the extent of a mentoring function and the protégé's satisfaction with the mentor, in that protégés would be more satisfied if their mentor exhibits more of the mentoring function congruent with the protégé's age. In other words, younger protégés would be more satisfied with a mentor who exhibits more career functions, and older protégés would be more satisfied with a mentor who exhibits more psychosocial functions. Protégés would be less satisfied if their mentors demonstrated lower levels of the predicted preferred function (i.e., younger protégés would be less satisfied with lower levels of career functions, and older protégés would be less satisfied with lower levels of psychosocial functions).

The results did not support socioemotional selectivity theory, with no interactions found between protégé age and mentoring functions on satisfaction with the mentor. Overall, protégé age predicted satisfaction with the mentor, with older protégés being less satisfied. In addition, each of the MFM subscales predicted satisfaction with the mentor, with higher levels of mentoring functions predicting higher levels of satisfaction with the mentor.

Improvements of the MFM over Past Measures

As stated previously, there is no generally accepted measure of mentoring (Pellegrini & Scandura, 2005), though the MFQ-9 (Castro & Scandura, 2004) has become a very common way

of measuring mentoring functions. However, the mentoring functions measures that currently exist all have problems, and therefore the MFM was developed in an attempt to create a measure that does not suffer from the same problems as existing measures. These problems include serious issues regarding the nature of the items, the extent of the content domain that is covered, and issues with scale development.

Past research (Pellegrini & Scandura, 2005) showed that the MFQ-9 does not work the same for both satisfying and dissatisfying relationships, and I believe that a major reason for this is that items are biased toward satisfied protégés. When writing items for the MFM, an attempt was made to avoid items that might be biased toward satisfied protégés. The MFQ-9 was shown in one study (Pellegrini & Scandura, 2005) to have five of the nine items with significantly different variances and reliabilities for satisfied versus dissatisfied protégés. In this sample, only 11 protégés indicated that they were dissatisfied with their mentor, so it was not possible to address this issue of measurement invariance with the MFM.

Another issue with the MFQ-9 (Castro & Scandura, 2004) and the scale on which it was based (Scandura & Ragins, 1993) is that an orthogonal rotation was used in the factor analysis. With an orthogonal rotation, the factors are assumed to be uncorrelated. However, as we know from past research (e.g., Mullen, 1998; Tepper, Shaffer, & Tepper, 1996) and from the present study, mentoring functions are correlated. Therefore, an oblique rotation should be used to allow the factors to be correlated, which is what was done in this study with the MFM.

The final MFM includes items that are actionable and pertain to behaviors of the mentor, and it also includes items that are about the mentor but from the perspective of the protégé. Both types of items are indicators of the three mentoring functions in the MFM and provide valuable information. Actionable, behavior items are important because they can be directly addressed

either by an individual or through a training program. However, items that pertain to the perspective of the protégé are also important; mentoring is a two-way relationship, and what the protégé thinks about the mentor also must be taken into account. In this sense, including non-actionable items in the MFM is both a limitation and an opportunity; not all items can be clearly used to recommended explicit changes that a mentor should make, but the scale takes into account the protégé's perspective.

Another criticism of past measures, especially the MFQ-9, is that it does not assess many of the different types of mentoring functions that could be provided by a mentor. The MFQ-9 was based on a previous measure (Scandura & Ragins, 1993), which in turn was based on a previous measure (Scandura, 1992), which does not appear to have been created based on the entire mentoring functions content domain or using scale development best practices. The development of the MFM started from scratch, using best practices, and included a large number of items written to cover the entire content domain. In the following section, the differences in content domain coverage by the MFM and the MFQ-9 are described in further detail.

Comparing the Content Domain of the MFM and the MFQ-9

Using the original nine subfunctions proposed by Kram (1985) to compare the MFQ-9 and the MFM, the MFQ-9 represents five of the subfunctions: Sponsorship, Coaching, Counseling, Friendship, and Role Modeling. However, the MFM represents eight of the nine subfunctions, with only Protection missing: Sponsorship, Coaching, Counseling, Friendship, Role Modeling, Acceptance & Confirmation, Exposure & Visibility, and Challenging Assignments. As noted earlier, Protection was intentionally eliminated. A comparison of the two measures using Kram's original subfunctions can be seen in Table 7.

Table 7

Comparison of the MFQ-9 and the MFM with Kram's (1985) Subfunctions

Measure	Item	Kram's Subfunction
MFQ-9	My mentor takes a personal interest in my career.	Sponsorship
MFQ-9	My mentor helps me coordinate professional goals.	Coaching
MFQ-9	My mentor has devoted special time and consideration to my career.	Sponsorship
MFQ-9	I share personal problems with my mentor.	Counseling
MFQ-9	I exchange confidences with my mentor.	Friendship
MFQ-9	I consider my mentor to be a friend.	Friendship
MFQ-9	I try to model my behavior after my mentor.	Role Modeling
MFQ-9	I admire my mentor's ability to motivate others.	Role Modeling
MFQ-9	I respect my mentor's ability to teach others.	Role Modeling
MFM	My mentor respects me.	Acceptance & Confirmation
MFM	My mentor is trustworthy.	Role Modeling
MFM	My mentor makes me feel like I have what it takes to be successful.	Acceptance & Confirmation
MFM	My mentor trusts me.	Acceptance & Confirmation
MFM	My mentor lets me know about opportunities for promotion.	Sponsorship
MFM	My mentor introduces me to important people in my organization.	Exposure & Visibility
MFM	My mentor provides me with opportunities for challenging work.	Challenging Assignments
MFM	My mentor familiarizes me with the work environment.	Coaching
MFM	My mentor and I have a close personal relationship.	Friendship
MFM	My mentor is my friend.	Friendship
MFM	My mentor encourages me to talk openly about my fears.	Counseling
MFM	I admire my mentor's significant relationships with others.	Role Modeling

It may be noted that the MFM covers much more of the mentoring functions domain (as conceptualized by Kram) than does the MFQ-9. In the MFQ-9, the first three items are called the "Career Support" function and include items from Kram's Sponsorship and Coaching subfunctions. The Career factor of the MFM includes items from Sponsorship, Coaching, Exposure & Visibility, and Challenging Assignments. The second factor of the MFQ-9 is called

the “Psychosocial Support” function and includes items from Counseling and Friendship, and the third factor of “Role Modeling” includes only Role Modeling items. In the MFM, items that were included in the “Psychosocial Support” factor and the “Role Modeling” factor of the MFQ-9 were split into two different factors: Trust & Acceptance, and Relationship. Trust & Acceptance includes items from Acceptance & Confirmation and Role Modeling, and Relationship includes items from Friendship, Counseling, and Role Modeling. From this direct comparison of items with their original, related subfunctions from Kram, it can be said that the MFM covers a greater extent of the content domain than does the MFQ-9.

Limitations

As with all research, this study has its limitations. The sample consisted entirely of participants found through Amazon Mechanical Turk, which can be problematic for multiple reasons. First, it could not be verified that all of the information provided was correct (e.g., age, whether or not they were in a mentoring relationship, etc.). Second, although measures were taken to exclude data from participants who weren’t paying attention, it was not possible to identify all participants who may not have paid close attention to the items, especially if they only stopped paying attention for part of the survey. Due to the lack of dissatisfied protégés in this sample, it also was not possible to determine if items had different means and variances for satisfied versus dissatisfied protégés; in future samples, both dissatisfied and satisfied protégés should be sought so as to determine if this is an issue with the MFM. Another potential limitation is the lack of additional validity evidence, as the sample who rated the original items was also the sample who completed the validity evidence measures at the same time. In the future, it would be best to obtain more validity evidence using different, more varied samples.

Applications and Future Directions for Research and Practice

More research beyond different samples is still needed to provide cumulative evidence of the validity of the MFM. In addition, the MFM should be used with protégés in both informal and formal mentoring relationships to determine if it is reliable, valid, and useful for both types of mentoring relationships. The MFM could be used with samples from countries other than the United States to establish measurement equivalence in other cultures, and further validity evidence should be established using other important outcomes, such as job performance. A sample including more dissatisfied protégés should also be sought so that it can be determined if the MFM is appropriate to use for all protégés, not just those who are satisfied.

The MFM can be used by mentoring researchers to better determine the extent to which mentoring functions are related to outcomes, like job satisfaction or learning. This more accurate information about mentoring functions and outcomes could then be used by practitioners to make better decisions (such as how to train mentors on particular functions). For example, this study suggests that older protégés do not have a significantly different preference in mentoring functions than do younger protégés. Therefore, an organization who might previously have taken protégé age into account when training or choosing mentors may think otherwise based on this research. Another example based on this study is that an organization who wants to reduce employee burnout may place more attention on building the capacity for their mentors regarding Career and Trust & Acceptance functions, and not Relationship functions, as Relationship functions did not significantly predict burnout.

Conclusion

Through this study, I have developed a more comprehensive measure of mentoring functions than those that currently exist in the literature. The Mentoring Functions Measure

began with a large number of items covering the entire content domain, which had not been done in the past, and the process of eliminating items and choosing factors followed survey development best practices. Potential items were reviewed by SMEs, and the remaining items (along with additional validity measures and related items) were completed by hundreds of MTurk workers who were working at least part-time and a protégé in an informal mentoring relationship. Through exploratory and confirmatory factor analysis, the MFM items were reduced to 12 comprising three factors: Career, Relationship, and Trust & Acceptance. The MFM exhibits good reliability and validity evidence and is a better alternative to the mentoring functions measures that are currently being used in research and practice.

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Appendix A

Functions Used in Previous Research

	Kram (1985)	Noe (1988)	Ragins & McFarlin (1990)	Dreher & Ash (1990)	Scandura & Ragins (1993)	Castro & Scandura (1994)	Fowler & O'Gorman (2005)	St-John (2011)	Janssen et al. (2013)
Career functions/ vocational support	X		X		X	X		X	
Psychosocial functions/support	X		X		X	X		X	
Role modeling	X	X	X		X	X	X	X	
Sponsorship / Advocacy	X	X	X				X		
Exposure-and-visibility	X	X	X						
Coaching	X	X	X				X		
Protection	X	X	X						
Challenging work assignments	X	X	X						
Acceptance-and-confirmation	X	X	X						
Counseling / Personal and emotional guidance	X	X	X				X		
Friendship	X		X				X		
Social			X						
Parent			X						
Career development facilitation							X		
Strategies and systems advice							X		
Learning facilitation							X		
Reflector								X	
Reassurance								X	
Motivation								X	
Confidant								X	
Integration								X	
Information support								X	
Confrontation								X	
Guide								X	
Creating freedom									X
Encouraging self-initiation									X
Congruency with personal values									X
Confirming and praising autonomy									X
Emulating autonomous behavior									X
Emulating effective behaviors									X

	Kram (1985)	Noe (1988)	Ragins & McFarlin (1990)	Dreher & Ash (1990)	Scandura & Ragins (1993)	Castro & Scandura (1994)	Fowler & O'Gorman (2005)	St-John (2011)	Janssen et al. (2013)
Confirming and praising competence									X
Familiarizing with the working environment									X
Accepting one's own incompetence									X
Stimulating continuous development									X
Problem solving									X
Creating an environment for practice									X
Intimacy									X
Self-disclosure									X
Relatedness behavior to emulate									X
Showing genuine interest									X
Caring									X

Appendix B

Items Included in SME Pilot Testing and/or Used in Data Collection

	Item	n_c	n_o	N	p_{sa}	c_{sv}	Relevance	Clarity	Conciseness
Sponsorship									
1	My mentor nominates me when there is an opportunity for advancement.	11	1	12	0.92	0.83	1.75	1.58	1.75
2	My mentor acts as my proponent.	11	1	12	0.92	0.83	1.58	1.83	1.75
3	My mentor actively helps me get promotions.	11	1	12	0.92	0.83	1.92	1.67	1.50
4	I have more opportunities for movement and advancement in my organization because of my mentor.	9	2	13	0.69	0.54	1.69	1.85	1.92
5	My mentor helps me build a good reputation for myself.*	1	6	12	0.08	-0.42	2.08	2.17	2.08
6	My mentor acts as my advocate.	9	1	12	0.75	0.67	1.58	2.00	1.83
7	My mentor lets me know about opportunities for promotion.	8	3	12	0.67	0.42	1.58	1.50	1.58
8	My mentor helps me get good opportunities.	5	7	12	0.42	-0.17	1.50	1.83	1.83
9	My mentor uses his/her influence to get me good opportunities.*	7	3	12	0.58	0.33	2.00	1.58	1.58
10	My mentor tells influential people about my successes.*	7	5	12	0.58	0.17	1.75	1.92	1.67
11	My mentor actively keeps me from getting promotions. (Reverse of #3)†								
Protection									
1	My mentor will intervene when I am ill-equipped for the situation.	11	1	12	0.92	0.83	2.00	2.08	2.00
2	My mentor protects me from situations that could hurt my reputation.	11	1	12	0.92	0.83	1.83	1.92	1.92
3	My mentor will sometimes take the blame for me.	10	1	12	0.83	0.75	3.17	2.08	2.00
4	My mentor shields me from people who could be harmful to my career or reputation.	12	0	12	1.00	1.00	2.17	1.75	1.83
5	My mentor sometimes takes responsibility for things I have done wrong.	11	1	12	0.92	0.83	3.17	2.33	2.17
6	In tough situations, my mentor will sometimes take the negative attention away from me.	10	1	12	0.83	0.75	2.58	2.08	1.67
7	My mentor will sometimes take credit for controversial decisions I have made.	11	1	12	0.92	0.83	2.92	2.33	2.00

	Item	n_c	n_o	N	p_{sa}	c_{sv}	Relevance	Clarity	Conciseness
8	My mentor protects me from others who want me to fail.	12	0	12	1.00	1.00	2.00	1.67	1.58
9	My mentor helps me when I can't meet a deadline on my own.*	7	3	12	0.58	0.33	3.17	1.92	2.08
10	My mentor puts me in situations that could hurt my reputation. (Reverse of #2)†								
Exposure & Visibility									
1	My mentor gives me responsibilities that allow me to develop relationships with important people.	11	1	12	0.92	0.83	1.67	1.75	1.92
2	My mentor introduces me to business contacts who could be valuable to me in the future.*	8	4	12	0.67	0.33	1.83	1.75	1.67
3	My mentor introduces me to important people in my organization.	9	3	12	0.75	0.50	1.58	1.50	1.58
4	My mentor encourages me to interact with senior managers in my organization.	8	3	12	0.67	0.42	1.58	1.75	1.75
5	My mentor ensures that I am noticed by people who can influence my career.	9	2	12	0.75	0.58	1.58	1.50	1.58
6	My mentor puts me in situations that make me look good.*	8	4	12	0.67	0.33	2.08	2.00	1.83
7	My mentor makes sure that other people know my strengths.	7	5	12	0.58	0.17	1.67	1.58	1.50
8	My mentor gives me tasks that include corresponding with influential people.	11	1	12	0.92	0.83	1.50	1.58	1.58
9	My mentor helps me network.	9	2	12	0.75	0.58	1.67	1.58	1.50
10	My mentor hides me from people who can influence my career. (Reverse of #5)†								
Coaching									
1	My mentor suggests specific strategies for achieving recognition at work.*	4	3	12	0.33	0.08	2.08	1.75	1.75
2	My mentor teaches me how to navigate effectively in the corporate world.	11	1	12	0.92	0.83	1.50	1.92	1.92
3	My mentor suggests specific strategies for accomplishing work objectives.	9	1	12	0.75	0.67	1.50	1.67	1.67
4	My mentor suggests specific strategies for achieving my career aspirations.	10	1	12	0.83	0.75	1.33	1.67	1.83
5	My mentor helps me find ways to solve problems at work.	8	2	12	0.67	0.50	1.42	1.83	1.67
6	My mentor familiarizes me with the work environment.	9	1	12	0.75	0.67	2.33	2.17	2.00
7	My mentor provides me with valuable knowledge.	10	1	12	0.83	0.75	1.50	2.00	1.92
8	My mentor gives me feedback on the image I project to others.	7	3	12	0.58	0.33	1.67	1.67	1.67

	Item	n_c	n_o	N	p_{sa}	c_{sv}	Relevance	Clarity	Conciseness
9	My mentor confronts my ideas (such as my beliefs, attitudes, and habits) to help further my self-reflection.*	8	2	12	0.67	0.50	2.25	2.25	2.25
10	When problem solving, my mentor gives me good advice towards a solution.*	11	1	12	0.92	0.83	1.67	1.75	2.00
11	When problem solving, my mentor gives me bad advice towards a solution. (Reverse of #10)†								
Challenging Assignments									
1	My mentor provides me with opportunities for challenging work.	11	1	12	0.92	0.83	1.50	1.75	1.58
2	When I am doing difficult work, my mentor provides me with ongoing feedback.*	4	3	12	0.33	0.08	1.33	1.67	1.67
3	My mentor encourages me to improve my skills.*	6	4	12	0.50	0.17	1.42	2.08	2.00
4	My mentor creates conditions that allow me to practice my work-related skills.	9	2	12	0.75	0.58	1.75	2.00	1.83
5	My mentor provides me with learning opportunities.	7	3	12	0.58	0.33	1.50	1.50	1.58
6	My mentor provides me with opportunities that allow me to gain new skills.	11	1	12	0.92	0.83	1.42	1.75	1.75
7	My mentor gives me assignments that force me to learn new skills.	9	2	12	0.75	0.58	1.75	1.83	1.75
8	My mentor gives me assignments that are difficult but manageable.	11	1	12	0.92	0.83	1.67	1.42	1.67
9	My mentor supports me when he/she gives me challenging assignments.	8	3	12	0.67	0.42	1.67	1.75	1.75
10	My mentor avoids giving me learning opportunities. (Reverse of #5)†								
Acceptance & Confirmation									
1	My mentor makes me feel comfortable taking risks.	6	3	12	0.50	0.25	1.92	2.08	1.67
2	My mentor accepts me for who I am.	11	1	12	0.92	0.83	1.92	1.67	1.58
3	My mentor helps me accept that I might not yet have the ability to do a task as it should be done.*	4	2	12	0.33	0.17	2.00	2.08	2.33
4	My mentor and I share personally relevant information.	12	0	12	1.00	1.00	2.75	1.75	2.08
5	My mentor supports me in good times and in bad.	5	5	13	0.38	0.00	1.77	1.92	1.85
6	I think that if I made a big mistake, my mentor would reject me.‡	5	3	12	0.42	0.17	3.25	2.58	2.17
7	My mentor is angry with me when we disagree.‡	5	1	12	0.42	0.33	3.08	2.17	1.92

	Item	n_c	n_o	N	p_{sa}	c_{sv}	Relevance	Clarity	Conciseness
8	My mentor tolerates differences between us.	9	2	12	0.75	0.58	2.08	1.92	1.92
9	My mentor respects me.	9	1	12	0.75	0.67	1.58	1.33	1.42
10	My mentor trusts me.	11	1	12	0.92	0.83	1.42	1.42	1.50
11	My mentor makes me feel uncomfortable taking risks. (Reverse of #1)†								
Counseling									
1	My mentor encourages me to talk openly about my fears.	11	1	12	0.92	0.83	2.42	2.08	1.83
2	My mentor helps me decide if what I'm doing is in line with my own values.*	6	2	12	0.50	0.33	2.25	1.83	2.00
3	When times get tough, my mentor reassures me.	8	4	12	0.67	0.33	1.58	1.75	1.92
4	My mentor helps me put my problems into perspective.	9	2	12	0.75	0.58	1.67	2.08	1.75
5	My mentor acts as a sounding board for my self-exploration.*	4	3	12	0.33	0.08	2.25	1.92	1.75
6	My mentor helps me figure out how to balance work and my personal life.	10	1	12	0.83	0.75	2.08	1.83	1.75
7	My mentor helps me deal with distractions from my work.*	7	4	12	0.58	0.25	2.25	1.92	1.83
8	My mentor helps me figure out how to advance in my career without compromising my values.	6	4	12	0.50	0.17	1.83	1.92	1.92
9	My mentor gives me advice so that I can avoid some of the mistakes he/she has made.	7	2	12	0.58	0.42	1.33	1.42	1.67
10	My mentor encourages me to share my doubts and concerns.	9	1	12	0.75	0.67	2.08	1.92	1.92
11	My mentor discourages me from talking openly about my fears. (Reverse of #1)†								
Friendship									
1	My mentor and I talk about things unrelated to work.	11	1	12	0.92	0.83	2.83	1.75	1.75
2	My mentor is my friend.	10	2	12	0.83	0.67	2.83	1.67	1.58
3	My mentor and I have a close personal relationship.	10	2	12	0.83	0.67	2.75	1.67	1.75
4	My mentor worries about me.	9	1	12	0.75	0.67	3.50	2.67	2.17
5	My mentor genuinely cares about me.	6	4	12	0.50	0.17	2.17	1.92	1.83
6	My mentor is like a parent to me.	5	7	12	0.42	-0.17	3.75	2.08	1.92
7	I socialize with my mentor outside of work.	12	0	12	1.00	1.00	3.67	1.92	1.75
8	My mentor shares personal information with me.	9	1	12	0.75	0.67	3.50	2.00	1.83

	Item	n_c	n_o	N	p_{sa}	c_{sv}	Relevance	Clarity	Conciseness
9	My mentor and I sometimes go out to lunch.*	10	1	12	0.83	0.75	2.83	1.67	1.75
10	My mentor and I have a distant personal relationship. (Reverse of #3)†								
Encouragement & Motivation									
1	My mentor makes me feel like I have what it takes to be successful.	11	1	12	0.92	0.83	1.50	1.75	1.67
2	My mentor makes me feel competent.	11	1	12	0.92	0.83	1.58	1.75	1.58
3	My mentor encourages me to make my own decisions.*	5	3	12	0.42	0.17	2.17	1.92	2.17
4	My mentor encourages me to try new things.	6	4	12	0.50	0.17	2.00	2.50	1.92
5	My mentor shows his/her approval when I act on my own.	8	3	12	0.67	0.42	1.75	1.67	1.75
6	My mentor makes me feel like I can do or say whatever I want without being controlled.*	8	2	13	0.62	0.46	3.17	2.83	2.75
7	My mentor motivates me.	9	2	12	0.75	0.58	1.83	1.75	1.67
8	My mentor makes me feel self-confident.	12	0	12	1.00	1.00	1.67	1.42	1.50
9	My mentor gives me incentives to persevere.	11	1	12	0.92	0.83	2.25	2.33	2.25
10	My mentor makes me feel like I am not good enough.*‡	5	1	12	0.42	0.33	3.50	2.08	2.08
11	My mentor makes me feel incompetent. (Reverse of #2)†								
Role Modeling									
1	My mentor is my role model.	12	0	12	1.00	1.00	1.42	1.42	1.67
2	My mentor inspires me.	11	1	12	0.92	0.83	1.83	1.58	1.58
3	My mentor deserves a lot of respect.*	8	4	12	0.67	0.33	2.25	1.92	1.92
4	My mentor acts ethically.	11	1	12	0.92	0.83	1.42	1.33	1.33
5	My mentor sets a good example.	12	0	12	1.00	1.00	1.42	1.58	1.50
6	My mentor is trustworthy.	8	3	12	0.67	0.42	1.42	1.50	1.42
7	My mentor demonstrates qualities that I would like to have for myself.	12	0	12	1.00	1.00	1.50	1.67	1.58
8	My mentor represents the kind of person that I would like to be.	12	0	12	1.00	1.00	1.58	1.75	1.58
9	My mentor acts in ways that I would like to act.	12	0	12	1.00	1.00	1.42	1.67	1.75
10	I admire my mentor's significant relationships with others.	11	1	12	0.92	0.83	2.75	2.00	2.08
11	I admire my mentor's knowledge.	13	0	13	1.00	1.00	2.00	1.77	1.85
12	I identify with my mentor.	9	2	12	0.75	0.58	2.25	2.25	2.00
13	My mentor acts unethically. (Reverse of #4)†								

Appendix C

Full Pattern Matrix

Item	Factor 1	Factor 2	Factor 3
Acceptance8 My mentor respects me.*	.613		
Coaching7 My mentor provides me with valuable knowledge.	.581		
Acceptance6R My mentor is angry with me when we disagree.	.576		
RoleModel5 My mentor is trustworthy.*	.551		.260
Encourage1 My mentor makes me feel like I have what it takes to be successful.*	.548		
Encourage2 My mentor makes me feel competent.	.538		
Coaching8 When problem solving, my mentor gives me good advice towards a solution.	.534		
Acceptance5R I think that if I made a big mistake, my mentor would reject me.	.525		
RoleModel4 My mentor sets a good example.	.519		.222
Acceptance10 My mentor trusts me.*	.516		.234
Acceptance2 My mentor accepts me for who I am.	.506		.269
RoleModel6 My mentor demonstrates qualities that I would like to have for myself.	.496		.247
Acceptance4 My mentor supports me in good times and in bad.	.458		.354
RoleModel3 My mentor acts ethically.	.436		.207
RoleModel11 I admire my mentor's knowledge.	.436		
Encourage3 My mentor encourages me to try new things.	.436	.286	
Encourage5 My mentor motivates me.	.434		.250
Acceptance7 My mentor tolerates differences between us.	.410	-.230	
Coaching5 My mentor helps me find ways to solve problems at work.	.366	.324	
Encourage7 My mentor makes me feel self-confident.	.360		.285
Counseling3 My mentor helps me put my problems into perspective.	.354		.347
Counseling2 When times get tough, my mentor reassures me.	.344		.334
Encourage4 My mentor shows his/her approval when I act on my own.	.333	.235	
Counseling7 My mentor gives me advice so that I can avoid some of the mistakes he/she has made.	.279		.249
Acceptance1 My mentor makes me feel comfortable taking risks.	.277	.246	
Sponsorship3 My mentor actively helps me get promotions.	-.337	.727	
Sponsorship6 My mentor lets me know about opportunities for promotion.*		.683	
Sponsorship4 I have more opportunities for movement and advancement in my organization because of my mentor.		.674	
Exposure3 My mentor introduces me to important people in my organization.*		.670	

Item	Factor 1	Factor 2	Factor 3
Challenging1 My mentor provides me with opportunities for challenging work.*		.669	
Sponsorship1 My mentor nominates me when there is an opportunity for advancement.		.648	
Challenging2 My mentor creates conditions that allow me to practice my work-related skills.		.642	
Exposure7 My mentor gives me tasks that include corresponding with influential people.		.639	
Exposure5 My mentor ensures that I am noticed by people who can influence my career.		.638	
Sponsorship8 My mentor helps me get good opportunities.		.626	
Coaching6 My mentor familiarizes me with the work environment.*		.621	
Challenging5 My mentor gives me assignments that force me to learn new skills.		.613	
Exposure1 My mentor gives me responsibilities that allow me to develop relationships with important people.		.557	
Exposure4 My mentor encourages me to interact with senior managers in my organization.		.532	
Challenging7 My mentor supports me when he/she gives me challenging assignments.	.254	.519	
Challenging4 My mentor provides me with opportunities that allow me to gain new skills.	.299	.512	
Coaching1 My mentor teaches me how to navigate effectively in the corporate world.		.495	
Challenging3 My mentor provides me with learning opportunities.	.290	.475	
Challenging6 My mentor gives me assignments that are difficult but manageable.		.470	
Exposure6 My mentor makes sure that other people know my strengths.	.301	.443	
Sponsorship2 My mentor acts as my proponent.		.440	
Exposure8 My mentor helps me network.	.218	.412	
Counseling6 My mentor helps me figure out how to advance in my career without compromising my values.		.375	
Sponsorship5 My mentor acts as my advocate.		.363	
Coaching2 My mentor suggests specific strategies for accomplishing work objectives.	.300	.337	
Coaching3 My mentor suggests specific strategies for achieving my career aspirations.	.274	.329	
Friendship3 My mentor and I have a close personal relationship.*			.861
Friendship7 I socialize with my mentor outside of work.			.781
Friendship2 My mentor is my friend.*			.705
Friendship6 My mentor is like a parent to me.	-.266		.636
Friendship8 My mentor shares personal information with me.			.620

Item	Factor 1	Factor 2	Factor 3
Friendship4 My mentor worries about me.			.547
Friendship5 My mentor genuinely cares about me.	.364		.522
Counseling4 My mentor helps me figure out how to balance work and my personal life.		.200	.521
Counseling1 My mentor encourages me to talk openly about my fears.*			.521
Acceptance3 My mentor and I share personally relevant information.	.292		.512
RoleModel12 I identify with my mentor.	.240		.496
RoleModel10 I admire my mentor's significant relationships with others.*			.488
RoleModel1 My mentor is my role model.			.479
RoleModel2 My mentor inspires me.	.315		.466
Friendship1 My mentor and I talk about things unrelated to work.			.439
Counseling8 My mentor encourages me to share my doubts and concerns.	.237		.433
RoleModel7 My mentor represents the kind of person that I would like to be.	.380		.394
RoleModel9 My mentor acts in ways that I would like to act.	.342		.365
Encourage8 My mentor gives me incentives to persevere.			.247

* Item was retained in the final scale.

Note. Numbers with an absolute value less than .2 are suppressed.

Appendix D

Full Structure Matrix

Item	Factor 1	Factor 2	Factor 3
RoleModel5 My mentor is trustworthy.*	.707	.421	.531
Acceptance8 My mentor respects me.*	.694	.327	.431
Encourage1 My mentor makes me feel like I have what it takes to be successful.*	.666	.404	.427
Encourage2 My mentor makes me feel competent.	.658	.371	.453
Acceptance10 My mentor trusts me.*	.657	.390	.487
RoleModel6 My mentor demonstrates qualities that I would like to have for myself.	.652	.407	.499
RoleModel4 My mentor sets a good example.	.649	.371	.471
Acceptance2 My mentor accepts me for who I am.	.647	.359	.505
Coaching7 My mentor provides me with valuable knowledge.	.630	.403	.243
Encourage3 My mentor encourages me to try new things.	.628	.520	.464
Acceptance4 My mentor supports me in good times and in bad.	.614	.314	.553
Encourage5 My mentor motivates me.	.613	.439	.494
Coaching8 When problem solving, my mentor gives me good advice towards a solution.	.604	.396	.277
RoleModel3 My mentor acts ethically.	.593	.418	.449
RoleModel11 I admire my mentor's knowledge.	.583	.412	.421
Counseling3 My mentor helps me put my problems into perspective.	.566	.421	.551
Encourage7 My mentor makes me feel self-confident.	.544	.395	.489
Acceptance6R My mentor is angry with me when we disagree.	.541	.209	
Counseling2 When times get tough, my mentor reassures me.	.528	.356	.515
Acceptance5R I think that if I made a big mistake, my mentor would reject me.	.523		.240
Encourage4 My mentor shows his/her approval when I act on my own.	.492	.418	.375
Coaching5 My mentor helps me find ways to solve problems at work.	.476	.455	.216
Counseling7 My mentor gives me advice so that I can avoid some of the mistakes he/she has made.	.462	.388	.431
Acceptance1 My mentor makes me feel comfortable taking risks.	.440	.407	.352
Acceptance7 My mentor tolerates differences between us.	.302		
Exposure7 My mentor gives me tasks that include corresponding with influential people.	.289	.668	.303
Sponsorship8 My mentor helps me get good opportunities.	.285	.667	.355
Exposure3 My mentor introduces me to important people in my organization.*	.256	.663	.202

Item	Factor 1	Factor 2	Factor 3
Exposure5 My mentor ensures that I am noticed by people who can influence my career.	.299	.662	.256
Challenging1 My mentor provides me with opportunities for challenging work.*	.259	.654	
Sponsorship6 My mentor lets me know about opportunities for promotion.*		.644	
Sponsorship3 My mentor actively helps me get promotions.		.641	.244
Coaching6 My mentor familiarizes me with the work environment.*	.318	.635	
Challenging2 My mentor creates conditions that allow me to practice my work-related skills.	.240	.630	
Exposure1 My mentor gives me responsibilities that allow me to develop relationships with important people.	.388	.623	.254
Sponsorship1 My mentor nominates me when there is an opportunity for advancement.		.608	
Sponsorship4 I have more opportunities for movement and advancement in my organization because of my mentor.		.608	
Exposure4 My mentor encourages me to interact with senior managers in my organization.	.361	.596	.261
Challenging7 My mentor supports me when he/she gives me challenging assignments.	.429	.595	.204
Challenging4 My mentor provides me with opportunities that allow me to gain new skills.	.453	.593	
Challenging5 My mentor gives me assignments that force me to learn new skills.		.586	
Challenging3 My mentor provides me with learning opportunities.	.451	.569	.214
Exposure6 My mentor makes sure that other people know my strengths.	.483	.567	.286
Coaching1 My mentor teaches me how to navigate effectively in the corporate world.	.285	.549	.293
Exposure8 My mentor helps me network.	.436	.541	.357
Counseling6 My mentor helps me figure out how to advance in my career without compromising my values.	.403	.505	.377
Sponsorship2 My mentor acts as my proponent.	.297	.501	.258
Coaching3 My mentor suggests specific strategies for achieving my career aspirations.	.446	.470	.323
Challenging6 My mentor gives me assignments that are difficult but manageable.		.448	
Coaching2 My mentor suggests specific strategies for accomplishing work objectives.	.403	.432	
Sponsorship5 My mentor acts as my advocate.		.392	
Friendship3 My mentor and I have a close personal relationship.*	.281		.817
Friendship2 My mentor is my friend.*	.388	.270	.743
Friendship7 I socialize with my mentor outside of work.			.700

Item	Factor 1	Factor 2	Factor 3
Friendship5 My mentor genuinely cares about me.	.593	.338	.683
RoleModel2 My mentor inspires me.	.584	.459	.658
RoleModel12 I identify with my mentor.	.522	.440	.657
Friendship8 My mentor shares personal information with me.	.294	.212	.632
Acceptance3 My mentor and I share personally relevant information.	.502	.268	.630
RoleModel1 My mentor is my role model.	.438	.401	.607
RoleModel10 I admire my mentor's significant relationships with others.*	.410	.362	.597
Counseling1 My mentor encourages me to talk openly about my fears.*	.352	.310	.593
RoleModel7 My mentor represents the kind of person that I would like to be.	.591	.393	.592
Counseling8 My mentor encourages me to share my doubts and concerns.	.484	.399	.586
Counseling4 My mentor helps me figure out how to balance work and my personal life.	.256	.354	.569
RoleModel9 My mentor acts in ways that I would like to act.	.549	.391	.554
Friendship6 My mentor is like a parent to me.			.542
Friendship4 My mentor worries about me.			.480
Friendship1 My mentor and I talk about things unrelated to work.	.319		.472
Encourage8 My mentor gives me incentives to persevere.	.206	.226	.310

* Item was retained in the final scale.

Note. Numbers with an absolute value less than .2 are suppressed.

Appendix E

MFQ-9 Items

Career Support

1. My mentor takes a personal interest in my career.
2. My mentor helps me coordinate professional goals.
3. My mentor has devoted special time and consideration to my career.

Psychosocial Support

4. I share personal problems with my mentor.
5. I exchange confidences with my mentor.
6. I consider my mentor to be a friend.

Role Modeling

7. I try to model my behavior after my mentor.
8. I admire my mentor's ability to motivate others.
9. I respect my mentor's ability to teach others.

Appendix F

Paternalistic Leadership Items

My manager (*mentor*):

1. Is interested in every aspect of his/her employees' (*protégés')* lives.
2. Creates a family environment in the workplace.
3. Consults his/her employees (*protégés)* on job matters.
4. Is like an elder family member (father/mother, elder brother/sister) for his employees (*protégés)*.
5. Gives advice to his/her employees (*protégés)* on different matters as if he/she were an elder family member.
6. Makes decisions on behalf of his/her employees (*protégés)* without asking for their approval.
7. Knows each of his/her employees (*protégés)* intimately (e.g., personal problems, family life, etc.).
8. Exhibits emotional reactions in his/her relations with the employees (*protégés)*; doesn't refrain from showing emotions such as joy, grief, and anger.
9. Participants in his/her employees' (*protégés')* special days (e.g., weddings, funerals, etc.).
10. Tries his/her best to find a way for the company to help his/her employees (*protégés)* whenever they need help on issues outside work (e.g., setting up home, paying for children's tuition).
11. Expects his/her employees (*protégés)* to be devoted and loyal, in return for the attention and concern he/she shows them.
12. Gives his/her employees (*protégés)* a chance to develop themselves when they display low performance.
13. Believes he/she is the only one who knows what is best for his/her employees (*protégés)*.

Appendix G

Global Transformational Leadership Items

1. Vision
   communicates a clear and positive vision of the future
2. Staff Development
   treats staff (*protégés*) as individuals, supports and encourages their development
3. Supportive Leadership
   gives encouragement and recognition to staff (*protégés*)
4. Empowerment
   fosters trust, involvement, and cooperation among team members (*protégés*)
5. Innovative Thinking
   encourages thinking about problems in new ways and questions assumptions
6. Lead by Example
   is clear about his/her values and practices what he/she preaches
7. Charisma
   instills pride and respect in others and inspires me by being highly competent

Appendix H

Job Satisfaction Items

1. Knowing what you know now, if you had to decide all over again whether to take the job you now have, what would you decide?
    - Rate on a scale from 1-5, 1 = Definitely not take the job, 5 = Definitely take the job

2. If a (good) friend asked if he/she should apply for a job like yours with your employer, what would you recommend?
    - Rate on a scale from 1-5, 1 = Not recommend at all, 5 = Recommend strongly

3. How does this job compare with your ideal job (job you would most like to have)?
    - Rate on a scale from 1-5, 1 = Very far from ideal, 5 = Very close to ideal

4. (In general) how does your job measure up to the sort of job you wanted when you took it?
    - Rate on a scale from 1-5, 1 = Not at all like I wanted, 5 = Just like what I wanted

5. All things considered, how satisfied are you with your current job?
    - Rate on a scale from 1-5, 1 = Not at all satisfied, 5 = Completely satisfied

6. How do you feel about your job overall?
    - Rate on a scale from 1-7, 1 = Terrible, 2 = Unhappy, 3 = Mostly dissatisfied, 4 = Mixed (about equally dissatisfied and satisfied), 5 = Mostly satisfied, 6 = Pleased, 7 = Delighted

Appendix I

Satisfaction with Life Scale Items

1. In most ways my life is close to ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

Appendix J

The Burnout Measure

1. Being tired.
2. Feeling depressed.
3. Having a good day.
4. Being physically exhausted.
5. Being emotionally exhausted.
6. Being happy. (R)
7. Being “wiped out.”
8. “Can’t take it anymore.”
9. Being unhappy.
10. Feeling run-down.
11. Feeling trapped.
12. Feeling worthless.
13. Being weary.
14. Being troubled.
15. Feeling disillusioned and resentful.
16. Being weak and susceptible to illness.
17. Feeling hopeless.
18. Feeling rejected.
19. Feeling optimistic. (R)
20. Feeling energetic. (R)
21. Feeling anxious.

Appendix K

Personal Learning Measure Items

Relational Job Learning

1. I have gained insight into how another department functions.
2. I have increased my knowledge about the organization as a whole.
3. I have learned about others' perceptions about me or my job.
4. I have increased my understanding of issues and problems outside my job.
5. I better understand how my job or department affects others.
6. I have a better sense of organizational politics.

Personal Skill Development

7. I have learned how to communicate effectively with others.
8. I have improved my listening skills.
9. I have developed new ideas about how to perform my job.
10. I have become more sensitive to others' feelings and attitudes.
11. I have gained new skills.
12. I have expanded the way I think about things.

Appendix L

Satisfaction with Mentor Items

My Mentor:

1. is someone I am satisfied with.
2. fails to meet my needs (reverse-scored).
3. disappoints me (reverse-scored).
4. has been effective in his/her role.