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An Interdisciplinary Meta-Analysis of the Potential Antecedents, Correlates, and Consequences of Prote´ge´ Perceptions of Mentoring

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This meta-analysis summarized youth, academic, and workplace research on the potential antecedents (demographics, human capital, and relationship attributes), correlates (interaction frequency, relationship length, performance, motivation, and social capital), and consequences (attitudinal, behavioral, career- related, and health-related outcomes) of prote´ge´ perceptions of instrumental support, psychosocial support, and relationship quality to the mentor or to the relationship. A total of 173 meta-analytic correlations were computed based on data from 173 samples and a combined *N* of 40,737. Among antecedents, positive prote´ge´ perceptions were most strongly associated with greater similarity in attitudes, values, beliefs, and personality with their mentors ( ranged from .38 to .59). Among correlates, prote´ge´ perceptions of greater instrumental support ( .35) and relationship quality ( .54) were most strongly associated with social capital while prote´ge´ perceptions of greater psychosocial support were most strongly associated with interaction frequency ( .25). Among consequences, prote´ge´ perceptions of greater instrumental support ( .36) and relationship quality ( .38) were most strongly associated with situational satisfaction while prote´ge´ perceptions of psychosocial support were most highly associated with sense of affiliation ( .41). Comparisons between academic and workplace mentoring generally revealed differences in magnitude, rather than direction, of the obtained effects. The results should be interpreted in light of the methodological limitations (primarily cross-sectional designs and single-source data) and, in some instances, a small number of primary studies.

*Keywords:* mentoring, meta-analysis, relationships, life-span development

Mentoring is a developmentally oriented relationship between a younger or less experienced individual (the prote´ge´) and an older or more experienced individual (the mentor; Jacobi, 1991; Kram,

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1985; Rhodes, 2005). It is a unique, idiosyncratic relationship marked by an emotional bond between mentor and prote´ge´, where the mentor offers guidance and new learning opportunities to the prote´ge´ (DuBois & Karcher, 2005; Eby, Rhodes, & Allen, 2007). The specific type of learning that occurs in a mentoring relation- ship varies. For youth it may involve learning strategies to avoid peer pressure or how to develop a better relationship with one’s parents, in academic settings it may include hands-on learning in a scientific laboratory, and in the workplace it may involve learn- ing how to network to advance one’s career.

Scholarly interest in mentoring has several historical lineages. Keller (2007) noted that formal youth mentoring programs in the United States were rooted within major social movements of the late 19th and early 20th centuries that drew on the charitable impulses of volunteers who wanted to assist disadvantaged youth. Sociological research further underscored the important role that mentoring plays as a protective factor for disadvantaged youth (Lefkowitz, 1987; T. Williams & Kornblum, 1985) and that men-

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toring in college settings positively impacts personal, vocational, and educational outcomes (Astin, 1977; Chickering, 1969). Ado- lescent and adult mentoring is often traced to Levinson’s (Levin- son, Darrow, Klein, Levinson, & McKee, 1978) seminal study of human development. In chronicling the lives of 40 adult men, Levinson and colleagues identified mentoring as an important developmental milestone that “facilitates the realization of the Dream” (Levinson et al., 1978, p. 98), which refers to the vision that one has about the sort of life he or she wants as an adult. Kram’s (1985) research on the influence of mentoring on employ- ees’ personal and professional development extended scholarly study of mentoring to organizational settings.

Given the broad reach of mentoring scholarship, researchers from a wide range of disciplines, such as education, social work, community psychology, developmental psychology, public health, sociology, and industrial/organizational psychology, have exam- ined the potential antecedents, correlates, and consequences of mentoring. The present research summarizes this vast literature on mentoring across the life span by conducting an interdisciplinary meta-analysis on the potential antecedents, correlates, and conse- quences of prote´ge´s’ perceptions of the mentoring relationship.

**Mentoring Across the Life Span**

Three distinct areas of mentoring scholarship exist, each of which corresponds to a different developmental stage: youth, ac- ademic, and workplace. These areas of scholarship have developed relatively independently, yet share the common belief that through sustained interactions marked by trust, empathy, and authentic concern, mentoring can have positive, significant, and enduring effects on prote´ge´s (T. D. Allen & Eby, 2007; Ellis, 1992; Rhodes

& DuBois, 2008).

**Youth Mentoring**

Research on youth mentoring assumes that a supportive rela- tionship between a nonparental adult and a young person promotes positive youth development and can be a protective factor against a wide range of negative youth outcomes (e.g., school failure, drug use, psychological distress; DuBois, Portillo, Rhodes, Silverthorn,

& Valentine, 2011). The primary pathways by which mentoring is presumed to operate is through improvements in prote´ge´ social and emotional development, enhanced cognitive development, and positive identity development (Rhodes, 2005). Youth mentors can affect these changes by engaging in behaviors that demonstrate trust, empathy, and tangible support to youth (Nakkula & Harris,

2005; Rhodes, 2005). Youth mentoring relationships may occur naturally; for example, a neighbor or a teacher may provide sup- port and guidance to a young person without being matched through a formal mentoring program (Zimmerman, Bingenheimer,

& Behrendt, 2005). Mentoring relationships may also be formally arranged, as is the case in a mentor–prote´ge´ relationship through Big Brothers Big Sisters of America. Youth mentoring, particu- larly formal programs, often target youth who are considered at risk for poor academic, health, and other outcomes (DuBois & Karcher, 2005). Perhaps due to this emphasis, much of the research on youth mentoring involves comparing outcomes across youth with and without experience in a mentoring relationship (see DuBois, Holloway, Valentine, & Cooper, 2002; DuBois et al.,

2011). Notwithstanding the pervasive argument that mentoring relationships can be transformative for youth, the empirical record suggests much more modest effects (DuBois et al., 2002, 2011; Herrera, Grossman, Kauh, Feldman, & McMaken, 2007).

**Academic Mentoring**

Mentoring that occurs in academic programs and university settings is based on the apprenticeship model of education, where a faculty member provides guidance and support on both academic and nonacademic issues outside the classroom (Jacobi, 1991). Like youth mentoring, it is assumed that students benefit from academic mentoring relationships with teachers and faculty members (Te- nenbaum, Crosby, & Gliner, 2001). Academic mentoring can lead to improvements in academic achievement, scholarly productivity, professional development, identity development, academic persis- tence, and psychological health (W. B. Johnson, 2007), among other things. A mentoring relationship may confer these benefits through the provision of both career-related support (e.g., oppor- tunities to engage in research, direct training) and emotional sup- port (e.g., unconditional acceptance, encouragement) to under- graduates (Baker, Hocevar, & Johnson, 2003) and graduate students (R. A. Clark, Harden, & Johnson, 2000). Research on academic mentoring often presumes that the relationship is infor- mal (W. B. Johnson, 2007), although many mentorships develop out of formal advising relationships (Schlosser & Gelson, 2001).

**Workplace Mentoring**

Mentoring relationships also exist in organizational settings (Ragins & Kram, 2007a). This type of mentoring relationship is oriented toward helping the prote´ge´ develop personally and pro- fessionally in his or her career (Kram, 1985). Workplace mentors can provide assistance that helps the prote´ge´ become oriented to the organization and socialized in the profession, as well as prepare him or her for career advancement. Mentors can also provide support behaviors that build trust, intimacy, and interpersonal closeness, such as offering acceptance and confirmation, counsel- ing, and serving as a role model (Kram, 1985; Ragins & McFarlin,

1990). The provision of these support behaviors is associated with more positive work and career attitudes, greater career success, and lower intentions to leave the organization (T. D. Allen, Eby, Poteet, Lentz, & Lima, 2004), among other things. In organiza- tional settings, mentoring has been studied primarily among pro- fessional employees and can develop naturally (informal mentor- ing) or occur as part of an organizationally sanctioned formal mentoring program (Ragins & Cotton, 1999). The latter type of mentoring often targets employees who are identified as having high potential for career advancement (Eddy, Tannenbaum, Al- liger, D’Abate, & Givens, 2001).

**Theoretical Overview**

Building on the foundational work of Erickson (1950) and others, Levinson (1986) outlined the normative trajectory of indi- vidual development across the life course. Central to this theory is the tenet that relationships outside one’s family, including men- tors, play a central role in human development. Close relationships with others give substance to one’s life and are the means by which

we live out, or hide from, various aspects of our life. Of course, this idea is not new; the universal and fundamental need to form and maintain positive relationships with others occupies a promi- nent role in Maslow’s (1943) influential theory of human needs. This need to belong is fulfilled through acceptance from and affiliation with other people (Baumeister & Leary, 1995; Gardner, Pickett, & Brewer, 2000).

The recognized importance of relationships begs the question of how mentoring may uniquely fulfill the need to belong. Several characteristics of mentoring set it apart from other types of close relationships, such as friendships, student–teacher relationships, therapeutic relationships, and supervisory relationships. This in- cludes the mentor serving as a role model to the prote´ge´, differ- ential experience between mentor and prote´ge´, the provision of guidance by the mentor, an emotional bond between mentor and prote´ge´, and tailoring the support provided to the unique develop- mental needs of the prote´ge´ (DuBois & Karcher, 2005; Eby et al.,

2007; W. B. Johnson, Rose, & Schlosser, 2007). Importantly, a mentoring relationship provides a safe environment for self- exploration, reflection, and self-expression (W. B. Johnson et al.,

2007). These validating experiences allow the prote´ge´ to explore alternative ways of thinking and acting, while eventually learning to operate more effectively without the support and guidance of the mentor (Kram, 1985). This may also build resiliency, which helps individuals persevere in the face of setbacks (Masten & Coat- sworth, 1998). While other relationships may involve some of these components, mentoring is unique by encompassing them all. By virtue of these unique aspects, mentoring may help fulfill a prote´ge´’s need to belong, from youth to adulthood. In terms of childhood and early adolescence, the youth mentoring literature sug- gests that one reason for risk taking and behavior problems is that youth feel increasingly disconnected and isolated (Karcher, Davis, & Powell, 2002). Karcher and colleagues (2002) attributed this to fewer community resources for youth and the replacement of caregiving roles from the family to an already overloaded public school system. Mentoring may be able to help fill this void (T. D. Allen & Eby,

2007). For individuals who attend college, another developmental milestone awaits them. As they leave the comfort and security of their family, students are expected to take on greater responsibility for scheduling their time, handling finances, and caring for themselves. This represents the early adult transition period (Levinson, 1986). Mentoring is discussed as a strategy to increase student integration into the university community and profession, combat feelings of loneliness that often accompany the transition to college and graduate school, and facilitate engagement in learning (Austin, 2002; Jacobi,

1991; Ostrove & Long, 2007). Another transitional period is the first few years as a working professional. During this time individuals try to establish a niche for themselves (Levinson, 1986). However, they often harbor concerns about the ability to perform effectively in their chosen profession and are still in the process of forming a sense of professional identity (Kram, 1985). Mentoring is uniquely positioned to help with this transition because it is believed to foster the devel- opment of personal and professional competence (Ragins & Kram,

2007b).

**The Content of Mentoring Relationships**

In an effort to understand how and why mentoring has a positive influence on prote´ge´s, researchers have studied various aspects of

mentoring relationships. Across subfields of mentoring scholar- ship, this includes prote´ge´ perceptions of instrumental support behaviors, prote´ge´ perceptions of psychosocial support behaviors, and prote´ge´ perceptions of relationship quality. Perceived *instru- mental support* refers to mentor behaviors that are geared toward facilitating prote´ge´ goal attainment (Flaxman, Ascher, & Har- rington, 1988; W. B. Johnson et al., 2007; Kram, 1985; Nakkula & Harris, 2005; Spencer, 2007; Tenenbaum et al., 2001). This in- cludes the specific mentor behaviors of providing task-related assistance, sponsorship, exposure and visibility, and coaching. Perceived *psychosocial support* refers to mentor behaviors that enhance a prote´ge´’s perception of competence and facilitate both personal and emotional development (Flaxman et al., 1988; W. B. Johnson et al., 2007; Kram, 1985; Nakkula & Harris, 2005; Spen- cer, 2007; Tenenbaum et al., 2001). Specific mentor psychosocial behaviors include offering counseling, unconditional acceptance, encouragement, and role modeling. The youth mentoring literature has discussed the relative merits of prescriptive or goal-oriented relationships (similar to instrumental support) versus developmen- tal or youth-focused relationships (similar to psychosocial support; Morrow & Styles, 1995; Styles & Morrow, 1992). Although some structure and guidance are important, relationships that are be- lieved to have the greatest positive impact on youth allow flexi- bility in youth goals, are collaborative, and create a comfort zone for youth to discuss relevant issues (Rhodes, 2007).

We also examine perceptions of relationship quality in relation to potential antecedents, correlates, and consequences of mentor- ing. Consistent with the broader literature on state-based affect (Parkinson, Totterdell, Briner, & Reynolds, 1996), perceived *re- lationship quality* refers to the prote´ge´’s evaluative feelings toward the mentor or to the relationship as a whole. It includes prote´ge´ satisfaction with the mentoring relationship, satisfaction with the mentor, overall perceptions of relationship quality, and liking (T. D. Allen & Eby, 2003; Kram, 1985; Nakkula & Harris, 2005; Rhodes, 2005). Our inclusion of perceived relationship quality is noteworthy given the suggestion that relational processes such as trust, empathy, respect, and emotional connectedness can be growth-fostering experiences for both youth (Rhodes, 2002, 2005; Thomson & Zand, 2010; Zand et al., 2009) and adults (Ragins,

2010). In fact, Rhodes’s (2005) influential model of youth men- toring argues that without a strong interpersonal connection, men- toring is unlikely to yield positive prote´ge´ outcomes. The impor- tance of relationship closeness for youth was also discussed by Nakkula and Harris (2005), who argued that relationship quality is essential to examine because this is the mechanism by which mentoring exerts its effect on prote´ge´s. Spencer (2006) further noted that a strong emotional connection is the distinguishing feature of mentoring relationships that have better outcomes for youth.

The concept of relational mentoring at work (J. K. Fletcher & Ragins, 2007; Ragins, 2010) also stresses the importance of care- fully considering relationship quality in mentoring research. Ra- gins (2010) argued that the existing literature has generally failed to examine the high-quality end of mentoring relationships, and this is where the mentoring is most generative, fulfilling, and developmental for both mentor and prote´ge´. Consistent with the youth mentoring literature, Ragins argued that high-quality rela- tionships are further characterized by authenticity and empower- ment (also see Spencer, 2006), which lead to increased self-worth,

motivation, new skills, and the desire for greater connection. This makes high-quality mentoring relationships both reinforcing and sustainable (Ragins, 2010).

Existing research substantiates both the conceptual and empir- ical distinctions between perceived instrumental and psychosocial support (Kram, 1985; Ragins & McFarlin, 1990; Spencer, 2007). Perceived relationship quality is also conceptually distinct from perceptions of mentoring support because the former refers to general evaluative feelings about the relationship or about the mentor, not perceptions of the type and amount of support pro- vided. Moreover, Ragins (2010) argued that the emotional con- nection and relational depth that characterize high-quality relation- ships clearly differentiate relationship quality from instrumental support.

Although distinct, these three aspects of mentoring are not always discussed and/or operationalized precisely or uniformly in the literature. For example, research that purports to examine relationship quality is sometimes based on measures of perceived mentoring support (Cavell, Meehan, Heffer, & Holladay, 2002; Gattis, 2008; Liang, Tracy, Taylor, & Williams, 2002; Villarreal,

2007). Likewise, researchers have operationalized satisfaction with the mentoring relationship or mentor through the use of measures of mentor support (Blakely, Menon, & Jones, 1995; Cavell et al., 2002; Duster, 2010; Kemp, 2007; Liang et al., 2002; Villarreal, 2007). This creates conceptual confusion and may ob- fuscate potentially important differences between perceived instru- mental support, perceived psychosocial support, and relationship quality. In an effort to provide some clarity to the existing litera- ture, we distinguish between prote´ge´ perceptions of instrumental mentor support behaviors, psychosocial mentor support behaviors (i.e., what the mentor *does* in the relationship), and prote´ge´ per- ceptions of relationship quality (i.e., how the prote´ge´ *feels about or evaluates* the mentor or the relationship).

**The Present Study**

Interest in mentoring has yielded an explosion of scholarship over the past decade. There have been four broad edited handbooks (T. D. Allen & Eby, 2007; DuBois & Karcher, 2005; S. Fletcher & Mullen, 2012; Ragins & Kram, 2007a), numerous meta-analytic reviews (T. D. Allen et al., 2004; Blinn-Pike, 2007; DuBois et al.,

2002, 2011; Eby, Allen, Evans, Ng, & DuBois, 2008; Jolliffe & Farrington, 2007; Kammeyer-Mueller & Judge, 2008; Tolan, Henry, Schoeny, & Bass, 2008; Underhill, 2006; Wheeler, Keller,

& DuBois, 2010), and narrative reviews (e.g., Sambunjak, Straus,

& Marusic, 2006; Wanberg, Welsh, & Hezlett, 2003) that trans- verse the youth, academic, and workplace mentoring literature.

Table 1 provides a summary of previous meta-analyses, many of which focused exclusively on comparing those who have been mentored to those who have not. Such studies are important because they document that those who have been a prote´ge´ in a mentoring relationship have somewhat more positive outcomes than individuals without such experience. However, they do not allow for an examination of differences in the amount of perceived support and relationship quality within mentoring relationships. In other words, there is substantial variability in the nature and quality of interactions among mentors and prote´ge´s (Darling,

2005; Eby et al., 2007), which is likely to be influenced by what individuals bring to the relationship (e.g., demographic character-

istics, motivation) and relate to the degree that mentoring has an effect on prote´ge´s. Moreover, there is increasing recognition in the youth (Rhodes, 2005; Thomson & Zand, 2010) and workplace (Ragins, 2010) mentoring literature that it is essential to examine the relational processes that drive the formation of a high-quality emotional bond between mentor and prote´ge´ because high-quality relationships are both fundamentally different from average rela- tionships and potentially more impactful.

The current meta-analysis makes several key contributions. We extend the mentoring literature by examining prote´ge´ perceptions of two specific types of mentoring support (instrumental and psychosocial) and prote´ge´ perceptions of relationship quality in relation to each other, as well as to potential antecedents, corre- lates, and consequences. In so doing, we highlight the potentially important yet generally understudied construct of perceived rela- tionship quality, using emerging theory and research on relational mentoring (Ragins, 2010) as a guide.

We also provide the first meta-analytic estimate of associations between prote´ge´ perceptions of mentoring and mentor race, mentor human capital, mentor–prote´ge´ similarity (deep-level, surface- level, and experiential), interaction frequency, relationship length, motivation, social capital, sense of affiliation, learning/ socialization, and prote´ge´ strain in relation to prote´ge´ perceptions of mentoring. This builds on the three existing workplace meta- analyses that focused on prote´ge´ perceptions of the mentoring relationship but failed to examine these theoretically relevant potential antecedents, correlates, and consequences (see Table 1; T. D. Allen et al., 2004; Kammeyer-Mueller & Judge, 2008; O’Brien, Biga, Kessler, & Allen, 2010). We also provide the most up-to-date review of the literature by including additional studies published between 2008 and 2010.

Another contribution is that none of the existing meta-analyses examined prote´ge´ perceptions across all three life-span areas of mentoring scholarship or considered such a broad range of poten- tial antecedents, correlates, and consequences. Interdisciplinary research such as ours provides a high-level summary and integra- tion of typically isolated bodies of scholarship, which can lead to unique insights and approaches that can be leveraged to understand important phenomena (National Academy of Sciences, 2005; Rho- ten & Parker, 2004). We also contribute to the literature through the examination of type of mentoring (youth, academic, and work- place) as a moderator of the association between mentoring and potential antecedents, correlates, and consequences. Given the unique developmental issues that confront prote´ge´s at various life stages, substantive differences across various types of mentoring may be uncovered. Such findings may enable scholars to hone in on areas in which cross-disciplinary learning may be most fertile. Gaps in the existing literature may also be uncovered, which can catalyze new streams of research in specific areas of scholarship. In terms of theory development, if we find a consistent relation- ship between mentoring and a particular set of antecedents, cor- relates, and consequences, this will both fine-tune theory develop- ment and lead to promising new theoretical extensions. In contrast, those relationships that are found to be low or inconsistent across studies may encourage mentoring theory to branch into other directions. By obtaining a more precise estimate of the associations among perceived instrumental support, perceived psychosocial support, and relationship quality, we can also advance theory by determining if these three aspects of mentoring are actually distinct

Table 1

*Summary of Previous Meta-Analyses*

Article Population

Time frame of

review Aspect of mentoring studied Variables studied in relation to mentoring Key findings/conclusions

Mentor/no mentor comparisons only

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Blinn-Pike (2007)  445  MENTORING META-ANALYSIS | Youth | 1970–2005 | Program evaluation; restricted | Outcomes: school (e.g., grades), self | Mentoring has a low to moderate impact |
|  |  |  | to evaluations that included | (e.g., self-esteem), interpersonal |  |
|  |  |  | a matched comparison | relationships (e.g., family bonding, |  |
|  |  |  | group; random assignment, | peer support), alcohol and drugs (e.g., |  |
|  |  |  | and at least 50 prote´ge´s in | substance use), delinquency (e.g., |  |
|  |  |  | mentored group | violence) |  |
| DuBois, Holloway, | Youth | 1970–1998 | Program evaluation; | Six categories: (a) report information | Program effects enhanced when best |
| Valentine, & Cooper |  |  | preprogram versus | (e.g., published/unpublished), (b) | practices (e.g., ongoing training for |
| (2002) |  |  | postprogam or mentored | evaluation methodology (e.g., type of | mentors, expectations for frequency of |
|  |  |  | versus not mentored | research design), (c) program features | contact) are used and strong |
|  |  |  |  | (e.g., mentoring alone vs. mentoring as | relationships are formed; overall |
|  |  |  |  | part of multicomponent intervention, | effects modest in magnitude |
|  |  |  |  | compensation of mentors), (d) |  |
|  |  |  |  | characteristics of participating youth |  |
|  |  |  |  | (e.g., gender, race/ethnicity), (e) |  |
|  |  |  |  | mentor–mentee relationships (actual |  |
|  |  |  |  | frequency of contact, average length), |  |
|  |  |  |  | and (f) assessment of outcomes (type |  |
|  |  |  |  | of outcome, data source, timing of |  |
|  |  |  |  | assessment) |  |
| Dubois, Portillo, Rhodes, | Youth | 1999–2010 | Program evaluation; mentored | Outcomes: attitudinal/motivational, | Findings support positive effects |
| Silverthorn, & Valentine |  |  | versus not mentored; | social/interpersonal, psychological/ | associated with mentoring across |
| (2011) |  |  | preprogram versus | emotional, conduct problems, | behavioral, social, emotional, and |
|  |  |  | postprogram | academic/school, physical health | academic domains; moderate effect |
|  |  |  |  |  | sizes observed |
| Eby, Allen, Evans, Ng, & | Youth, | 1985–2006 | Mentored versus not | Outcomes: behavioral (e.g., performance), | Small to moderate effects overall with |
| DuBois (2008) | academic, |  | mentored | attitudinal (e.g., school attitudes), | the largest between mentoring and |
|  | employed |  |  | health-related (e.g., substance use), | attitudes and smallest between |
|  | adults |  |  | relational (interpersonal relations), | mentoring and psychological stress & |
|  |  |  |  | motivational (e.g., involvement), career | strain; subgroup analyses (i.e., youth, |
|  |  |  |  | (e.g., career recognition) | academic, workplace) revealed |
|  |  |  |  |  | differences in the strength of various |
|  |  |  |  |  | relationships (e.g., positive effect on |
|  |  |  |  |  | school attitudes stronger for academic |
|  |  |  |  |  | than youth mentoring) |
| Jolliffe & Farrington (2007) | Youth | Not explicitly | Mentored versus not | Outcome: reoffending | Mentoring programs in which mentoring |
|  |  | reported but | mentored |  | was combined with other |
|  |  | studies |  |  | interventions and in which mentors |
|  |  | referenced |  |  | and prote´ge´s met at least weekly and |
|  |  | ranged from |  |  | spent a longer time together per |
|  |  | 1979 to |  |  | meeting had a greater impact on |
|  |  | 2005 |  |  | reoffending as long as the mentoring |
|  |  |  |  |  | continued |

(*table continues*)

Table 1 (*continued*)

Article Population

Time frame of

review Aspect of mentoring studied Variables studied in relation to mentoring Key findings/conclusions

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|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Tolan, Henry, Schoeny, & Bass (2008)  Underhill (2006)  Wheeler, Keller, & DuBois  (2010) | Youth, but with several student– faculty studies included  Employed adults  Youth school- based programs | 1970–2005  1988–2004  2007–2009 | Program evaluation; mentored versus not mentored; preprogram versus postprogram  Mentored versus not mentored  Mentored versus not mentored | Outcomes: delinquency, aggression, drug use, academic functioning  Outcomes: income, tenure, number of promotions, job satisfaction, self- esteem, intent to stay, promotion/ career advancement, organizational commitment, alternative employment  opportunities, work stress, work–family conflict  Outcomes: truancy, presence of a supportive nonfamilial adult relationship, scholastic efficacy, school-related misconduct, peer  support, absenteeism, self-esteem/self- concept, future orientation, connectedness to school, general misconduct, parent relationships, academic performance, teacher–student relationship quality, substance use | Modest effects overall, but the largest effects were for delinquency and aggression; findings suggest mentoring may be most valuable for those at risk  Positive effect on career outcomes and satisfaction; informal mentoring had larger effects than did formal mentoring  School-based mentoring modestly related to increased support from nonfamilial adults, peer support, perceptions of scholastic efficacy, school-related misconduct, absenteeism, and truancy; no effects for academic achievement or other outcomes |
| Mixed studies: mentor/no mentor comparisons and perceptions of mentoring | | | | | |
| T. D. Allen, Eby, Poteet, | Employed | Not explicitly | Mentored versus not | Outcomes: objective and subjective | Small but positive relationships between |
| Lentz, & Lima (2004)  Kammeyer-Mueller & Judge | adults  Employed | reported but  studies referenced ranged from  1985 to  2004  1987–2007 | mentored; prote´ge´  perceived instrumental and psychosocial mentoring  Mentored versus not | career success, satisfaction, relationship  quality  Predictors and outcomes: demographic, | mentoring and outcomes  Mentoring has significant effect on job |
| (2008)  O’Brien, Biga, Kessler, & | adults, but it  appears student– faculty also included  Employed | 1984–2007 | mentored; prote´ge´  perceived instrumental and psychosocial mentoring, overall mentoring quality  or satisfaction with mentor  Mentored versus not | core self-evaluations, performance,  promotions, salary, job satisfaction, career satisfaction  Predictors: mentor and prote´ge´ gender | and career satisfaction after  controlling for demographics, human capital, and core self-evaluations  Very small in magnitude gender |
| Allen (2010) | adults |  | mentored; prote´ge´  perceptions of instrumental and psychosocial mentoring |  | differences (e.g., women perceive  more psychosocial mentoring than do men; men report serving as a mentor more often than women) |

from one another and if they relate to antecedents, correlates, and consequences in different ways. Finally, a large-scale meta- analysis of the mentoring literature will permit comparisons to other types of relationships such as friendships, patient–therapist relationships, and supervisor–subordinate relationships. This will facilitate theoretical integration with other areas of scholarship on relationships. Table 2 lists all study variables, along with their respective operationalization.

**Boundary Conditions**

This research focuses on prote´ge´ perceptions of instrumental support, psychosocial support, and relationship quality. We did not include studies that focused only on the mentor’s perception of support provided or perceived relationship quality. This is because research has found that mentor and prote´ge´ reports are not highly correlated; they appear to tap distinct phenomena (Ensher & Mur- phy, 1997; Fagenson-Eland, Baugh, & Lankau, 2005; Waters,

2004). Moreover, most research has examined the prote´ge´’s per- spective on mentoring, so this provides the largest literature base from which to draw. We also did not include indicators of rela- tionship quality such as relationship length or meeting frequency (Nakkula & Harris, 2005). We restricted our focus to subjective perceptions of the relationship because this is what influences subsequent behavior and ultimately affects the trajectory of a relationship (Hinde, 1981). A final boundary condition is that we were unable to disentangle specific aspects of perceived relation- ship quality, such as trust, respect, liking, and satisfaction, due to limited research on the topic.

**Potential Antecedents of Mentoring**

A wide range of variables are expected to predict prote´ge´ perceptions of mentoring support and relationship quality. Broadly speaking, these potential antecedents include demographics, hu- man capital, and relationship attributes.

**Demographics**

Previous research has examined various demographic charac- teristics of both the mentor and the prote´ge´ as predictors of perceived instrumental support, psychosocial support, and prote´ge´ perceptions of relationship quality. Our meta-analysis examines prote´ge´ gender, mentor gender, prote´ge´ race, and mentor race.

Prote´ge´ and mentor gender is the most extensively studied demographic variable in the mentoring literature. The general argument is that female prote´ge´s may report receiving less instru- mental support, yet greater psychosocial support, than male pro- te´ge´s (Bogat & Liang, 2005; McKeen & Bujaki, 2007). Likewise, female mentors may provide less instrumental support and more psychosocial support than male mentors (Burke, 1984). This is presumed to reflect fundamental differences in help-seeking be- havior among male and female prote´ge´s and differences in relating among men and women (Bogat & Liang, 2005; Liang & Gross- man, 2007). It may also reflect differences in gender-prescribed helping behaviors among mentors (Bogat & Liang, 2005) or dif- ferences in the power and resources that male and female mentors have to offer prote´ge´s (Ragins, 1997b). Existing research is mixed regarding whether the gender of the prote´ge´ and the gender of

mentor relate to these three aspects of mentoring (e.g., H. M. Johnson, Xu, & Allen, 2007; Liang & Grossman, 2007; O’Brien et al., 2010; Ragins, 1999, 2007).

Prote´ge´ and mentor race has also been examined in relation to perceptions of instrumental support, psychosocial support, and relationship quality. Prote´ge´ race may be important to consider because mentors in community (Rhodes, 2002), educational (Pope-Davis, Stone, & Neilson, 1997), and organizational (Ragins,

1997a) settings tend to be racial majority group members. This can create complex interracial dynamics for minority prote´ge´s (Ogbu,

1990; B. Sanchez & Colon, 2005) and make it difficult for them to build close and trusting relationships with majority group mentors (Thomas, 1989). Although the empirical evidence is mixed, mi- nority prote´ge´s may receive less instrumental support because mentors are less willing to invest in their personal and professional developmental (Blake-Beard, Murrell, & Thomas, 2007).

Mentor race may also influence perceptions of mentoring. Due to their lesser social status, power, and access to resources, men- tors who are racial minorities might be perceived as less able to provide instrumental support to prote´ge´s than those who are ma- jority group members (Ragins, 1997b). In terms of psychosocial support, it may be that minority mentors are perceived as providing greater psychosocial support due to cultural values that place a strong emphasis on relationships and social connectedness (Canary

& Dindia, 1998; L. A. Gilbert, 1985; B. Sanchez & Colon, 2005). On the other hand, to maintain a sense of legitimacy and reduce their own emotional vulnerability, perhaps minority mentors are viewed as less emotionally open with prote´ge´s. If so, prote´ge´s may perceive less psychosocial support and lower relationship quality.

**Human Capital**

Human capital theory (Becker, 1975) proposes that individuals vary with respect to the investments they make in developing personal skills and abilities. These investments in time, energy, and money typically manifest in years of education, amount or breadth of training and experience, grade or level achieved, or hierarchical position (e.g., Ng, Eby, Sorensen, & Feldman, 2005; Ng & Feldman, 2010; Wayne, Liden, Kraimer, & Graf, 1999). The development of human capital is important because it is believed to confer advantages to individuals in terms of greater opportuni- ties in the marketplace and economic stability (Becker, 1975). Mentor human capital may positively influence perceptions of mentoring support because mentors with greater human capital have more expertise, skills, and wisdom to offer to their prote´ge´s. When mentors have more to offer their prote´ge´s, the mentor and/or the mentoring relationship may also be viewed more favorably by the prote´ge´. Prote´ge´ human capital variables may also predict the amount of mentoring support received, with the general expecta- tion that prote´ge´s with greater experience, education, and potential for development will receive more mentoring support and report higher relationship quality than those with less human capital (e.g., Green & Bauer, 1995; Olian, Carroll, & Giannantonio, 1993; Rhodes, 2005).

**Relationship Attributes**

A final category of antecedents represents attributes of the mentoring relationship as a whole. The relationship attributes we

Table 2

*Operationalization of Variables Included in the Meta-Analysis*

Variable Operationalization Average reliability

Mentoring

Perceived instrumental support Mentor support behaviors that consist of providing challenging assignments, task assistance, exposure and visibility, sponsorship, protection, or coaching

.87

Perceived psychosocial support

Mentor support behaviors that consist of providing encouragement, acceptance, confirmation, counseling, role modeling, or engaging in social activities with prote´ge´

.87

Perceived relationship quality Satisfaction with the mentoring relationship, satisfaction with the mentor, liking, or overall perceptions of relationship quality

.87

Potential antecedents

Demographics

Prote´ge´ gender Biological sex of prote´ge´ (coded male 0, female 1) — Mentor gender Biological sex of mentor (coded male 0, female 1) —

Prote´ge´ race Racial minority or not racial minority (coded 0 racial minority, 1 not —

racial minority)

Mentor race Racial minority or not racial minority (coded 0 racial minority, 1 not —

racial minority)

Human capital

Mentor human capital Years of education, highest degree obtained, previous work experience, —

amount or breadth of training and experience, grade or level achieved, hierarchical position, or prote´ge´ perceptions of the mentor’s influence

Prote´ge´ human capital Years of education, highest degree, previous work experience, educational —

prestige, amount of training, or number of leadership positions held

Relationship attributes

Deep-level similarity Overall similarity, similarity in attitudes, values, beliefs, or personality .84

Surface-level similarity Gender similarity or race similarity (coded 0 dissimilar, 1 similar) —

Experiential similarity Similarity in education, academic discipline, functional area, job tenure, —

rank/status, departmental affiliation, geographic location, employment setting, or organizational setting (coded 0 dissimilar, 1 similar)

Relationship formality Assigned mentoring relationship or informal mentoring relationship (coded —

0 formal, 1 informal)

Potential correlates

Interaction frequency Frequency of communication, number of contacts per month, amount of —

time spent with mentor, or hours spent with mentor

Relationship length Time invested in the relationship, tenure with mentor, or relationship tenure —

Performance Performance rating, performance effectiveness, graduated, grade point average, high school rank, mentor report of prote´ge´ competence, prestige of first job, goal attainment, or number of students advised/supervised in career

Motivation Hours worked per week, hour studied per week, job involvement, persistence, self-set goals, or citizenship behavior

Social capital Family support, peer support, supervisor support, team social support,

family valuing of education, relationship with peers, instrumental network resources, number of contacts at higher levels, access to female role models, or family planning support

.89

.89

.79

Potential consequences

Attitudinal outcomes

Situational satisfaction Satisfaction with one’s university, department, program, academic courses, professor, job in general, specific job attributes (e.g., supervisor, coworkers, pay, benefits), or career; positive attitude toward work or university environment; academic satisfaction

Sense of affiliation Affective organizational commitment, sense of community, team spirit, work integration, or person–culture fit

.84

.83

Behavioral outcomes

Learning/socialization Academic socialization, access to information, organizational socialization, work role socialization, engagement in orientation activities, team learning, overall learning, personal growth, professional growth, work knowledge, or receipt of information about job; knowledge of conferences, research, graduate school, or organizational systems

.84

Turnover intent Intent to leave one’s job, organization, major, university, or career .76

Career-related outcomes

Compensation Pay, salary, compensation, or salary growth —

Perceived career success Positive feelings about one’s career, self-reported career attainment, or perceived career success

.80

|  |  |  |
| --- | --- | --- |
| Table 2 (*continued*) |  | |
| Variable | Operationalization | Average reliability |
| Career prospects  Health-related outcomes | Perceived chance of promotion, not career plateaued, career expectations, assessment of promotability, or expected future income | .84 |
| Strain | Depressed mood, burnout, work–family conflict, loneliness, distress, | .87 |

powerlessness, psychological withdrawal, lack of well-being,

psychosomatic/health complaints, general workplace stress, school stress, overall stress, or current level of drinking

Self-efficacy Task-related (career, school, etc.) or generalized self-efficacy .83

*Note.* Dashes indicate reliability is not applicable (i.e., constructs are presumed to be measured without error).

examine are deep-level similarity, surface-level similarity, experi- ential similarity, and relationship formality.

Mentor–prote´ge´ similarity has been extensively examined as a predictor of prote´ge´ perceptions of instrumental and psychosocial support and has been operationalized in various ways. Deep-level similarity refers to similarity in attitudes, beliefs, values, and other personal characteristics (e.g., personality), which are revealed over time through interpersonal interactions (Harrison, Price, & Bell,

1998). Mentors and prote´ge´s may also be similar in terms of surface-level characteristics such as race or gender (Harrison et al.,

1998). Finally, experiential similarity includes similarity in terms of experience-based factors such as educational level, educational background, functional area, departmental affiliation, job tenure, and geographic location. Narrative reviews of the mentoring liter- ature find that deep-level similarity is consistently related to pro- te´ge´ reports of more instrumental and psychosocial support (Eby,

2012). In contrast, both surface-level similarity and experiential similarity tend to demonstrate weaker and more inconsistent ef- fects with perceived mentoring support (Eby, 2012; B. Sanchez & Colon, 2005).

Relationship formality is another attribute of a mentoring rela- tionship. Informal mentoring relationships (also referred to as natural mentoring relationships in the youth literature; Zimmerman et al., 2005) develop spontaneously based on mutual attraction, liking, and perceived interpersonal comfort (Kram, 1985; Ragins

& Cotton, 1999). In contrast, formal mentoring relationships usu- ally involve a third-party matching process and individuals may not even meet one another until after the match is made (Eddy et al., 2001; Ragins & Cotton, 1999). In terms of structural features, formal relationships tend to be of shorter duration (e.g., Ragins & Cotton, 1999) and often involve written contracts with specific goals and timelines (Miller, 2007; Murray, 1991). Research exam- ining the effect of relationship formality on perceptions of men- toring has been primarily from the workplace literature and has found that informal mentoring tends to be associated with more instrumental and psychosocial support than formal mentoring (e.g., Chao, Walz, & Gardner, 1992; Ragins & Cotton, 1999).

**Potential Correlates of Mentoring**

Potential correlates of mentoring refer to variables that are thought to relate to perceived instrumental support, perceived psychosocial support, and relationship quality but cannot be firmly situated as antecedents or as outcomes. Here we examine interac- tion frequency, relationship length, prote´ge´ performance, prote´ge´ motivation, and prote´ge´ social capital.

Interaction frequency and relationship length are considered potential correlates because they unfold over the course of the relationship and may be influenced by the mentoring process. For a prote´ge´ to reap the benefits of mentoring and develop a strong connection with his or her mentor, frequent interpersonal interac- tion is needed (Csiksizentmihalyi & Rathunde, 1998; Lankau & Scandura, 2002; Liang, Spencer, Brogan, & Corral, 2008). In the absence of frequent interaction, it is difficult, if not impossible, for the mentor to provide guidance, support, and encouragement to the prote´ge´. The length of the relationship is also likely to relate to both types of mentoring support and relationship quality. Mentor- ing relationships are time-bound in the sense that the greatest opportunity for learning and development occurs during the early and middle stages of the relationship (Kram, 1985). Over time, the prote´ge´’s reliance on the mentor is reduced and the relationship runs its natural course, with the result being prote´ge´ independence from the mentor (Kram, 1985; Van Dyne, 1996).

In terms of prote´ge´ performance, it can be an antecedent to the relationship (e.g., mentors offer more support to higher performing prote´ge´s; Green & Bauer, 1995) or an outcome of the relationship (e.g., prote´ge´s who are in more supportive relationships become higher performers; R. J. Sanchez, Bauer, & Paronto, 2006). Al- though not examined empirically, there may also be reciprocal effects between prote´ge´ performance and prote´ge´ perceptions of mentoring. Specifically, higher performing prote´ge´s report greater support and higher quality relationships with their mentor, and by virtue of being in a more supportive and higher quality mentoring relationship, prote´ge´ performance is further enhanced. Another commonly studied correlate of instrumental and psychosocial sup- port is prote´ge´ motivation. Prote´ge´s who demonstrate greater mo- tivation may receive more mentoring support from mentors (Noe,

1988). It is also possible that prote´ge´ motivation is enhanced by receiving more instrumental or psychosocial support or by being in a relationship that the prote´ge´ views more favorably (Blinn-Pike,

2007). Mentoring may also positively relate to prote´ge´ social capital, defined as the extent to which a prote´ge´’s social network contacts create value for him or her (Coleman, 1988). Prote´ge´s should develop greater social capital if they perceive their mentors are providing them with sponsorship, visibility, and exposure (Kram, 1985). Alternatively, prote´ge´s with greater social capital will have more social contacts, which may increase the likelihood of receiving instrumental or psychosocial support and be associ- ated with stronger prote´ge´ perceptions of relationship quality (Seibert, Kraimer, & Liden, 2001).

**Potential Consequences of Mentoring**

A wide range of potential prote´ge´ consequences have been examined in relation to perceptions of instrumental support, psy- chosocial support, and relationship quality. These fall into several distinct categories, including attitudinal, behavioral, career-related, and health-related outcomes.

**Attitudinal Outcomes**

We examine the attitudinal outcomes of situational satisfaction and sense of affiliation. Prote´ge´s who perceive themselves as receiving more instrumental or psychosocial support may report higher situational satisfaction, defined as favorable evaluations of a particular context, experience, or situation. For example, due to both role modeling and the positive experience of engaging in a shared activity, prote´ge´s may develop more favorable attitudes toward academics (Blinn-Pike, 2007; Tenenbaum et al., 2001), graduate school (W. B. Johnson, Koch, Fallow, & Huwe, 2000), or their work role (Chao et al., 1992). Prote´ge´s who perceive greater instrumental or psychosocial support, or feel that the relationship is of higher quality may also develop a stronger sense of affiliation and belonging, manifested in greater psychological attachment to the context in which the relationship is embedded (e.g., their university, organization, community; T. D. Allen & Eby, 2007).

**Behavioral Outcomes**

Mentoring is often discussed as a means to enhance positive prote´ge´ behaviors. We examine the behavioral outcomes of pro- te´ge´ learning/socialization and turnover intentions. Prote´ge´s who perceive more instrumental or psychosocial support or who report higher relationship quality may garner more positive motivational, social-emotional, and cognitive resources, which in turn can facil- itate learning and socialization (J. K. Fletcher & Ragins, 2007; Rhodes, 2005). Through the provision of tangible support, encour- agement, and a sense of connection with a more experienced and caring individual, mentoring may also reduce behavioral intentions to quit a course of action or to exit a job, organization, or educa- tional pursuit (Blinn-Pike, 2007; Payne & Huffman, 2005; R. J. Sanchez et al., 2006).

**Career-Related Outcomes**

Career-related outcomes refer to quantifiable indicators of role success as well as to career-related perceptions. We investigate the career-related outcomes of compensation, perceived career suc- cess, and career prospects. Mentoring relationships bestow both credibility and career-enhancing exposure on prote´ge´s (Kram,

1985). For example, being affiliated with a powerful and influen- tial mentor may allow a prote´ge´ to experience gains in terms of pay and salary growth due to career-enhancing opportunities that are provided vis-a` -vis instrumental support. Likewise, perceiving higher relationship quality or greater instrumental or psychosocial support may strengthen prote´ge´s’ perceptions of career success or career prospects. This may occur because mentors offer develop- mental opportunities to prote´ge´s (i.e., what the mentor does) or because of the sense of identification that prote´ge´s may develop with a successful mentor (i.e., how the prote´ge´ feels about the mentor/relationship).

**Health-Related Outcomes**

Like other forms of social support, the receipt of both types of perceived mentoring support and relationship quality may have a positive effect on prote´ge´ health-related outcomes. In the current study, we included the health-related outcomes of prote´ge´ strain and prote´ge´ self-efficacy.

A wide range of strain outcomes have been examined in relation to the receipt of mentoring, including psychological (e.g., de- pressed mood, burnout, overall stress) and physical (e.g., psycho- somatic health complaints) strain. Perceived instrumental support in the form of task-related assistance, coaching, and guidance can lessen strain by reducing role stressors and helping prote´ge´s suc- cessfully accomplish difficult, potentially stress-inducing tasks (e.g., Lankau, Carlson, & Nielson, 2006). Likewise, the compas- sionate listening, counseling, and empathetic response associated with psychosocial support behavior may reduce prote´ge´ strain (Kram, 1985). There is also considerable evidence that high- quality relationships are associated with better health (see Heaphy

& Dutton, 2008, for a review).

Self-efficacy is also considered a health-related outcome be- cause it taps into one’s sense of personal agency, which is a component of psychological well-being (Bandura, 2004). Self- efficacy is likely to be enhanced when prote´ge´s perceive greater instrumental and psychosocial support and when they perceive the relationship as higher in quality. This is because efficacy percep- tions develop from task accomplishment (e.g., mentor provides guidance and support on academic, work, or personal issues), vicarious experience (e.g., mentor role-models effective perfor- mance), positive verbal messages (e.g., mentor provides accep- tance and confirmation), and emotional experiences (e.g., mentor encourages prote´ge´ to try new things, which may create anxiety but also enthusiasm; Bandura, 1986; Bearman, Blake-Beard, Hunt,

& Crosby, 2007). Mentors can also directly enhance self-efficacy by challenging prote´ge´ s’ negative self-views (Rhodes, 2002,

2005), which in turn can enhance prote´ge´ self-confidence (W. B. Johnson, 2007).

**Type of Mentoring as a Potential Moderator**

The relationship between mentoring and potential antecedents, correlates, and consequences may be accentuated or attenuated by whether the type of mentoring is youth, academic, or workplace. Although different areas of mentoring scholarship share the com- mon belief that mentoring is an important relational experience, as previously discussed, there are different developmental tasks fac- ing individuals across the life span. As such, there may be differ- ences in the antecedents, correlates, and consequences of mentor- ing based on the type of mentoring.1 As an illustration, Eby et al.’s (2008) meta-analysis that compared individuals who had been mentored with those who had not been mentored found generally

1 Although it was our intention to compare youth, academic, and work- place mentoring, an insufficient number of primary studies were identified that examined the potential antecedents, correlates, and consequences of perceived instrumental support, perceived psychosocial support, and rela- tionship quality among youth mentoring. This precluded us from including youth mentoring in the moderator analysis for type of mentoring relation- ship.

larger effect sizes for prote´ge´ outcomes in academic mentoring compared to youth or to workplace mentoring. The current study extends this earlier research by examining how variability in prote´ge´ perceptions of mentoring received and relationship quality relates to potential antecedents, correlates, and consequences across youth, academic, and workplace mentoring.

**Method**

**Literature Search**

A comprehensive search of articles published from January

1985 to November 2010 was conducted to identify articles exam- ining mentoring support and relationship quality in relation to antecedents, correlates, or outcomes. The start date of 1985 coin- cides with the publication of Kram’s (1985) work on mentoring, which laid the groundwork for the systematic study of mentoring relationships in academic and workplace settings. Although youth mentoring research cannot be easily traced to a particular study or timeline, Morrow and Styles’s (1995) efforts to develop a com- prehensive, descriptive profile of mentoring relationships are fre- quently cited as laying the groundwork for the study of variability in mentoring styles in formal youth mentoring relationships (e.g., Sipe, 2005).

Both computer-based and manual search methods were used to locate studies for the current analysis. These included the follow- ing computerized databases: PsycINFO, Business Source Premier, ERIC, Educational Abstracts, Medline, PubMed, Sociological Ab- stracts, and Social Sciences Abstracts, which included peer- reviewed articles, technical reports, books, edited book chapters, popular press articles, and unpublished dissertations. Search terms included *mentor* and all derivations of this word (e.g., *mentoring, mentored*), *Big Brother, Big Sister, nonparental adult,* and *buddy* in a relevant search field (i.e., title, abstract, keyword, descriptor, major topic). We manually searched quantitative reviews (e.g., T. D. Allen et al., 2004; Dorsey & Baker, 2004; DuBois et al.,

2002; Underhill, 2006), narrative reviews (e.g., Jacobi, 1991; Sambunjak et al., 2006; Wanberg et al., 2003), and other major compendiums (e.g., T. D. Allen & Eby, 2007; DuBois & Karcher,

2005) to identify additional articles. We also visited the websites of several nationwide formal mentoring programs (e.g., Ronald McNair Post-Baccalaureate Program, Big Brothers/Big Sisters) as well as organizations that routinely evaluate or fund research in the area of mentoring (Public/Private Ventures) to search for articles and reports with limited circulation. Finally, we conducted a search of the electronic dissertation abstract database, ProQuest, using the same keywords as noted above, to identify other relevant research studies. The initial search process yielded 43,380 poten- tial articles, dissertations, and reports.

**Inclusion Criteria**

To be considered for inclusion, a study had to examine the relationship between at least one of the three forms of mentoring (prote´ge´ perception of instrumental support, prote´ge´ perception of psychosocial support, prote´ge´ perception of relationship quality) and at least one of the potential antecedents, correlates, or conse- quences shown in Table 2. The study also had to be written in English and provide data using a statistic that could be converted

to a product-moment correlation coefficient (e.g., *d* statistic, *t* statistic, 2 2 contingency table, chi-square with one degree of freedom). For studies that met the inclusion criteria but did not report usable statistics (e.g., multivariate findings only), we at- tempted to obtain relevant data by contacting the study authors.

Studies had to involve youth, academic, or workplace mentoring (or some combination thereof) and include perceptions of mentor- ing from the prote´ge´’s perspective. We did not include studies that measured perceptions of mentoring only from the mentor’s per- spective because research finds only a moderate correlation be- tween prote´ge´ and mentor perceptions of the same relationship (e.g., Ensher & Murphy, 1997; Fagenson-Eland et al., 2005; Wa- ters, 2004). This is consistent with the broader social- psychological literature on close relationships, which discusses how individuals in the same relationship often have divergent perceptions of the relationship (e.g., Levinger, 1983). However, we did include studies in which other variables were collected from the mentor’s perspective (e.g., mentor human capital, inter- action frequency). Consistent with the view that mentoring is a reciprocal relationship involving mutuality of social exchange rather than a one-way relationship (e.g., Blinn-Pike, 2007; W. B. Johnson, 2007; Kram, 1985), we also limited our focus to tradi- tional one-on-one nonparental mentoring relationships. Thus, we excluded studies that focused exclusively on professional caregiv- ers or on specialists as mentors and general forms of social support provided by teachers (also see DuBois et al., 2002, 2011), as well as studies focusing exclusively on peer, group/team, or reverse mentoring (where the prote´ge´ is a more senior individual and the mentor is a more junior, less experienced individual; see Biss & DuFrene, 2006).

Studies were excluded that focused entirely on prote´ge´s who suffered from a major physical and/or psychological disability. Youth with serious disabilities are much less likely to pursue postsecondary education, and many face unemployment or under- employment (Wagner, Blackorby, Cameto, Hebbeler, & Newman,

1993). Therefore, if we included the few studies of youth mentor- ing for individuals with disabilities (see McDonald, Balcazar, & Keys, 2005), it would potentially skew our results. Research that focused exclusively on adults suffering from serious disabilities was also excluded because mentoring among this population typ- ically occurs as part of a larger program aimed at vocational rehabilitation and life skills counseling (e.g., Shandra & Hogan,

2008; Stelk & Richards, 1992). Such research has a substantively different focus than mentoring in academic and workplace settings. With this said, many studies of at-risk youth and college students likely included some prote´ge´s with disabilities, and these studies were included in our review. Finally, for intervention studies, mentoring had to be the sole or primary intervention so that the effects associated with perceptions of the mentoring relationship could be isolated (e.g., interventions that included academic coun- seling, special coursework, financial aid, and mentoring to im- prove student retention were excluded).

The initial studies were narrowed to 165 that met the inclusion criteria. Eight studies included multiple samples, for a total of 173 independent samples for the meta-analysis. If authors published different studies from the same data set or a smaller subset of the same data set, only the effect size based on the larger sample size was included. Of the 173 independent samples, 14 (8%) were classified as focusing on youth mentoring, 36 (21%) on academic

mentoring, 117 (68%) on workplace mentoring, and six (3%) as other (e.g., combination of academic and workplace samples). The combined sample size was 40,737. A large number of the data points were from unpublished sources (36%), and there is no appreciable difference in the average effect size across published (mean .16) and unpublished (mean .18) sources. None- theless, the fail-safe *N* was computed for all bivariate effects and is shown below. Most studies that failed to meet the inclusion criteria were either nonempirical (e.g., book chapters, practitioner articles) or did not include a measure of mentoring support or relationship quality from the prote´ge´’s perspective.

**Study Variables**

Mentoring was classified using the categories of prote´ge´ per- ceptions of instrumental support, perceptions of psychosocial sup- port, and perceptions of relationship quality. The majority of meta-analytic correlations (79.8%) associated with perceived in- strumental support and perceived psychosocial support was based on previously published and validated measures. Most commonly used measures of instrumental and psychosocial support were from Scandura (1992; 17.8%), Noe (1988; 17.5%), and Ragins and McFarlin (1990; 13.2%). Likewise, most of the measures of rela- tionship quality were also from published sources (86.3%). Item content for each measure of relationship quality was carefully examined by one or more of the senior authors. Only measures that assessed prote´ge´ perceptions of relationship quality were retained. Consistent with other meta-analyses (e.g., Glasman & Albarrac´ın,

2006; Judge, Thoresen, Bono, & Patton, 2001; Steel, 2007) and to have sufficient sample size to facilitate meaningful inferences, poten- tial antecedent, correlate, and consequence variables that were con- ceptually similar were combined. In creating variable categories, great care was taken to ensure that each category was sufficiently homo- geneous in content to yield a conceptually meaningful variable. A description of each variable category appears in Table 2, along with the average coefficient alpha for all measures using Likert-type scal- ing. Average reliability estimates ranged from .76 to .89, indicating acceptable reliability.

To examine type of mentoring as a moderator, each study was classified in terms of whether the study focused on youth mentor- ing, academic mentoring, or workplace mentoring. Youth mentor- ing was defined as a relationship between a nonparental adult and a child, adolescent, or young adult (Blinn-Pike, 2007). Academic mentoring was defined as the relationship between an undergrad- uate or graduate student and a teacher mentor or faculty mentor in community colleges, 4-year colleges, and universities (W. B. John- son, 2007). This included medical school training and nursing programs. Workplace mentoring included either formal or infor- mal mentoring relationships between working adults in an organi- zational setting (T. D. Allen et al., 2004).

**Coding Procedure**

Each study was independently coded by two of the study au- thors. For each study, the relationship between each of the three aspects of mentoring and the potential antecedents, correlates, and consequences was coded. To perform calculations relevant to meta-analysis, we coded scale reliabilities and sample size. Infor- mation was also coded for use in the moderator analyses (aca-

demic, workplace, youth). Initial overall agreement among coders was 91%. Coding discrepancies were resolved through reexami- nation of the data and, when necessary, discussion.

**Data Analysis**

Analyses were conducted using the Raju, Burke, Normand, and Langlois (1991) method. This method of random effects meta- analysis corrects effect sizes individually for artifacts. An adapted version of Arthur, Bennett, and Huffcutt’s (2001) SAS PROC MEANS was used to accommodate the Raju et al. method of meta-analysis. Using the Raju et al. method, each effect size was weighted by sample size and corrected for attenuation due to unreliability in both the predictor and criterion. When reliabilities were unreported, a distributional artifact correction was con- structed by averaging the reliability for all studies that did report reliability information. Each disattenuated, sample-weighted cor- relation was then averaged. In other words, this method differs from the Hunter and Schmidt (2004) approach because corrections are undertaken at the study level, and an artifact distribution is used when artifact information is unavailable. The resulting effect size, rho ( ), gives an indication of the strength of the relationship in the population. Only bivariate relationships that were drawn from three or more studies were retained for the overall analyses of the antecedents, correlates, and consequences of mentoring sup- port and quality.

We report the Q statistic, which tests homogeneity in the true correlations across studies (Hunter & Schmidt, 2004). The Q statistic is distributed as an approximate chi-square distribution and gives an indication that moderators are present when signifi- cant. We also computed the 95% confidence interval (95% CI) and

80% credibility interval (80% CR; see Judge, Heller, & Mount,

2002; Su, Rounds, & Armstrong, 2009). Confidence intervals provide an estimate of the variability of the corrected mean cor- relation due to sampling error (Hunter & Schmidt, 2004) by using the standard error to construct an interval around the mean cor- rected correlation. In the present study, we use the 95% CI to (a) determine whether the corrected effect differs from zero and (b) investigate differences in effect sizes. The credibility interval is formed using the standard deviation of and refers to the distri- bution of parameter values or an estimate of the variability of individual correlations in the population (Hunter & Schmidt,

2004). The credibility interval also gives an indication of the lower bound estimate of the relationship between two variables. Specif- ically, the lower bound value of the 80% CR indicates that 90% of the estimates of the mean corrected correlation are above that value (and 10% are below). If a credibility interval is small and excludes zero, it is unlikely that significant moderators are oper- ating (Whitener, 1990). However, if the credibility interval is large and/or includes zero, evidence is provided that the effect size is actually composed of multiple subpopulations (e.g., there are sub- stantive moderators).

**Moderator analyses.** To examine whether the effects varied by type of mentoring relationship, we conducted separate meta- analyses for perceived instrumental support, psychosocial support, and relationship quality for each subgroup (i.e., academic, work- place; Hunter & Schmidt, 2000). Because the type of mentoring relationship was examined separately for the three aspects of mentoring, we used a less stringent criterion of *k*  2 to maximize

the amount of information provided in the meta-analysis. In so doing, we recommend caution in interpreting effects based on a small number of primary studies.

**Results**

For each meta-analytic relationship, we report the total sample size across all studies (*N*), the total number of independent studies associated with the reported relationship (*k*), the sample-weighted correlation (*Rxy*), the fully corrected mean correlation or rho ( ), the Q statistic, the 95% CI, the 80% CR, and the fail-safe *N.* In terms of interpreting effect sizes, an absolute value of .10 is regarded as small, .30 as medium, and .50 as large (Cohen, 1988). Prior to interpreting results that met or exceeded Cohen’s criteria for a small effect, we examined the confidence interval to ensure that it did not include zero. For those relationships for which there were fewer than three primary studies, the data are coded as missing.

**Associations Between Prote´ge´ Perceptions of**

**Mentoring**

Table 3 presents the meta-analytic results for the associations between prote´ge´ perceptions of instrumental support, psychosocial support, and relationship quality. Prote´ge´ perceptions of these three aspects of mentoring were strongly and positively related ( ranged from .53 for instrumental support and relationship quality to .71 for psychosocial support and relationship quality). The shared variance between these constructs ranged from 28% (in- strumental support and relationship quality) to 50% (psychosocial support and relationship quality), indicating that prote´ge´ percep- tions of instrumental support, psychosocial support, and relation- ship quality are overlapping but distinct constructs.

**Potential Antecedents**

Three categories of potential antecedents were examined: de- mographics, human capital, and relationship attributes. The results are presented separately for perceived instrumental support (see Table 4), perceived psychosocial support (see Table 5), and rela- tionship quality (see Table 6). The Q statistics associated with many of the potential antecdents in Table 4 and Table 5 were significant and some of the credibility intervals were wide or included zero, indicating the likely presence of moderators. Two of the potential antecedents shown in Table 6 had significant Q

statistics associated with them (deep-level similarity, relationship formality), suggesting the presence of moderators for these effects. **Demographics.** The results for mentor and prote´ge´ demo- graphics were all below Cohen’s (1988) threshold for a small effect ( .10). For prote´ge´ gender (coded male 0, female 1), the corrected correlations were .03, .05, and .02 for perceived instrumental support, psychosocial support, and rela- tionship quality, respectively. Mentor gender (coded male 0,

female 1) demonstrated corrected correlations of .00,

.02, and .01 with the three aspects of mentoring. The effect sizes were .06, .01, and .00 for prote´ge´ race (coded minority 0, nonminority 1) for perceived instrumental support, psychosocial support, and relationship quality. The cor- rected correlation for mentor race (coded minority 0, nonmi- nority 1) was .09, .09, and .02 for perceived instrumental support, psychosocial support, and relationship qual- ity, respectively. On the basis of these findings, prote´ge´ gender, mentor gender, and prote´ge´ race were generally unrelated to men- toring. In a minor exception, prote´ge´s perceived slightly higher instrumental and psychosocial support from nonminority mentors compared to minority mentors.

**Human capital.** With one exception, the effect sizes associ- ated with mentor and prote´ge´ human capital were also below Cohen’s (1988) criteria for a small effect and in many cases the confidence intervals included zero. Specifically, the corrected cor- relation for prote´ge´ human capital was .03, .01, and

.06 for perceived instrumental support, psychosocial support, and relationship quality, respectively. For mentor human capital, the corrected correlation was .05 and .05 for psychosocial support and relationship quality, respectively, suggesting little appreciable effect. A small effect was found for mentor human capital and perceived instrumental support, although it was oppo- site to prediction; as a mentor’s human capital decreased, his or her prote´ge´ perceived greater instrumental support ( .11). The nonoverlapping confidence intervals indicate that the corrected correlation between instrumental support and mentor human cap- ital was different from the association between mentor human capital and both psychosocial support and relationship quality.

**Relational attributes.** Deep-level similarity, experiential similarity, and relationship formality demonstrated effects that were above the threshold for a small effect and their respective confidence intervals did not include zero. The results for surface- level similarity tended to be smaller.

Table 3

*Associations Between Prote´ge´ Perceptions of Mentoring*

Perceived instrumental support Perceived psychosocial support

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Antecedents | *N* | *k* | *Rxy* |  | 80% CR | 95% CI | Fail-safe *N* |  | *N* | *k* | *Rxy*  80% CR 95% CI Fail-safe *N* |
| Perceived instrumental support  Perceived psychosocial support | 17,150 | 74 | .58 | .68a | [.45, .91] | [.67, .69] | 933 |  |  |  |  |
| Relationship quality | 3,690 | 22 | .45 | .53a | [.25, .81] | [.51, .55] | 212 |  | 3,612 | 22 | .60 .71a [.50, .93] [.70, .73] 292 |

*Note*. *Rxy* is the uncorrected mean sample-weighted correlation, *N* is the total sample size, *k* is the number of independent samples, is the fully corrected mean correlation, 80% CR represents the 80% credibility interval, and 95% CI represents the 95% confidence interval. For both 80% CR and 95% CI, the value on the left is the lower bound, and the value on the right is the upper bound.

a Indicates significant Q statistic.

Table 4

*Potential Antecedents, Correlates, and Consequences of Perceived Instrumental Support*

Construct *N k Rxy*  80% CR 95% CI Fail-safe *N*

Potential antecedents

Demographics

Prote´ge´ gender 16,544 57 .03 .03a [ .05, .12] [.02, .05] 0

Mentor gender 6,115 18 .00 .00 [.00, .00] [ .03, .02] 0

Prote´ge´ race 2,321 17 .05 .06a [ .17, .05] [ .10, .02] 0

Mentor race 566 5 .09 .09 [.02, .15] [.01, .17] 0

Human capital

Mentor human capital 5,789 14 .10 .11a [ .27, .05] [ .14, .09] 0

Prote´ge´ human capital 11,804 39 .03 .03a [ .07, .12] [.01, .05] 0

Relationship attributes

Deep-level similarity 1,438 13 .32 .38a [.11, .65] [.34, .42] 86

Surface-level similarity 2,272 16 .02 .03a [ .09, .13] [ .02, .06] 0

Experiential similarity 1,021 9 .20 .21a [.02, .40] [.15, .27] 29

Relationship formality 2,717 14 .09 .10a [ .07, .26] [.06, .13] 13

Potential correlates

Interaction frequency 1,853 18 .27 .29a [.06, .53] [.25, .33] 87

Relationship length 7,742 31 .07 .08a [ .05, .20] [.05, .10] 16

Performance 2,943 15 .28 .33a [.21, .45] [.30, .36] 85

Motivation 6,088 24 .15 .19a [.05, .32] [.16, .21] 65

Social capital 2,680 11 .27 .35a [ .01, .72] [.32, .39] 67

Potential consequences

Attitudinal outcomes

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Situational satisfaction | 7,627 | 37 | .30 | .36a | [.17, .55] | [.34, .38] | 226 |
| Sense of affiliation | 4,270 | 22 | .25 | .33a | [ .08, .74] | [.31, .36] | 124 |
| Behavioral outcomes  Learning/socialization | 5,158 | 20 | .21 | .26a | [.06, .47] | [.24, .29] | 86 |
| Turnover intent | 2,833 | 12 | .18 | .24a | [ .54, .05] | [ .28, .21] | 0 |
| Career-related outcomes |  |  |  |  |  |  |  |
| Compensation | 6,760 | 14 | .09 | .10a | [.02, .18] | [.07, .12] | 13 |
| Perceived career success | 2,369 | 10 | .26 | .32a | [.19, .46] | [.29, .36] | 55 |
| Career prospects | 5,095 | 9 | .20 | .23a | [ .18, .64] | [.21, .26] | 33 |
| Health-related outcomes |  |  |  |  |  |  |  |
| Strain | 1,551 | 9 | .10 | .12a | [ .33, .09] | [ .17, .07] | 0 |
| Self-efficacy | 807 | 9 | .05 | .06a | [ .21, .32] | [ .01, .13] | 1 |

*Note*. *Rxy* is the uncorrected mean sample-weighted correlation, *N* is the total sample size, *k* is the number of independent samples, is the fully corrected mean correlation, CR represents the 80% credibility interval, and CI represents the 95% confidence interval. For both 80% CR and 95% CI, the value on the left is the lower bound, and the value on the right is the upper bound. Gender coded 0 male, 1 female. Race coded 0 minority, 1 nonminority. Surface-level similarity coded 0 dissimilar, 1 similar. Experiential similarity coded 0 dissimilar, 1 similar. Relationship formality coded 0 formal, 1 informal.

a Indicates significant Q statistic.

As deep-level similarity increased, so did prote´ge´ perceptions of instrumental support ( .38), psychosocial support ( .56), and relationship quality ( .59). The magnitude of these cor- rected correlations indicates a medium to large effect. Comparing the confidence intervals, we found that the effect for deep-level similarity was stronger for psychosocial support and relationship quality compared to instrumental support. Experiential similarity was positively related to instrumental support ( .21) and relationship quality ( .12), but unrelated to psychosocial sup- port ( .03). In terms of relationship formality, consistent yet small effects were found. Prote´ge´s in informal relationships per- ceived slightly higher instrumental ( .10) and psychosocial support ( .10) and reported somewhat higher relationship quality ( .14) than did those in formal mentorships. The confidence interval overlapped for all three aspects of mentoring, suggesting no appreciable difference in effect size.

The associations between surface-level similarity and all three aspects of mentoring were weak ( .03, .09, and .01 for instrumental support, psychosocial support, and relationship

quality, respectively). The corrected correlation for psychosocial support was just below Cohen’s criteria for a small effect, but the confidence interval did not include zero. Therefore, although the practical significance is somewhat limited, the positive association between surface-level similarity and perceptions of psychosocial support is noted.

**Potential Correlates**

Five potential correlates of mentoring were examined: interac- tion frequency, relationship length, performance, motivation, and social capital. The results appear in Table 4 (perceived instrumen- tal support), Table 5 (perceived psychosocial support), and Table

6 (relationship quality). Each of these potential correlates was related to one or more aspects of mentoring at or above Cohen’s (1988) criteria for a small effect. In addition, the confidence intervals for the corrected correlations meeting this threshold did not include zero. For many effect sizes, the Q statistics associated with rho ( ) were significant and the credibility intervals were

Table 5

*Potential Antecedents, Correlates, and Consequences of Perceived Psychosocial Support*

Construct *N k Rxy*  80% CR 95% CI Fail-safe *N*

Potential antecedents

Demographics

Prote´ge´ gender 12,340 47 .05 .05a [ .05, .15] [.03, .07] 0

Mentor gender 5,884 17 .02 .02a [ .12, .07] [ .05, .00] 0

Prote´ge´ race 1,987 16 .01 .01 [ .06, .07] [ .04, .05] 0

Mentor race 713 6 .09 .09 [.03, .15] [.02, .17] 5

Human capital

Mentor human capital 5,901 14 .05 .05a [ .19, .08] [ .08, .03] 0

Prote´ge´ human capital 9,632 29 .01 .01a [ .05, .08] [ .01, .03] 0

Relationship attributes

Deep-level similarity 1,924 15 .49 .56a [.24, .87] [.52, .59] 152

Surface-level similarity 2,230 17 .08 .09a [ .02, .19] [.04, .13] 12

Experiential similarity 883 8 .02 .03a [ .19, .25] [ .04, .10] 0

Relationship formality 2,645 14 .09 .10a [ .01, .21] [.06, .13] 13

Potential correlates

Interaction frequency 2,270 20 .23 .25a [.02, .48] [.21, .29] 80

Relationship length 7,792 33 .13 .14a [ .02, .30] [.12, .16] 58

Performance 3,267 16 .19 .24a [.10, .38] [.21, .27] 60

Motivation 4,260 17 .16 .18a [.05, .32] [.16, .21] 46

Social capital 1,191 5 .09 .10a [ .07, .28] [.05, .16] 5

Potential consequences

Attitudinal outcomes

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Situational satisfaction | 5,632 | 30 | .23 | .26a | [.05, .48] | [.24, .29] | 128 |
| Sense of affiliation | 5,520 | 14 | .31 | .41a | [.15, .66] | [.38, .43] | 100 |
| Behavioral outcomes  Learning/socialization | 3,872 | 15 | .20 | .24a | [ .02, .50] | [.21, .27] | 58 |
| Turnover intent | 3,827 | 14 | .08 | .10a | [ .27, .07] | [ .13, .07] | 0 |
| Career-related outcomes |  |  |  |  |  |  |  |
| Compensation | 5,256 | 9 | .03 | .03 | [.03, .03] | [.00, .06] | 0 |
| Perceived career success | 1,848 | 8 | .07 | .08a | [ .13, .30] | [.04, .13] | 6 |
| Career prospects | 3,482 | 3 | .15 | .19a | [ .01, .38] | [.15, .22] | 8 |
| Health-related outcomes |  |  |  |  |  |  |  |
| Strain | 3,952 | 7 | .11 | .12a | [ .23, .01] | [ .15, .09] | 0 |
| Self-efficacy | 1,821 | 11 | .16 | .18a | [ .08, .44] | [.14, .23] | 30 |

*Note*. *Rxy* is the uncorrected mean sample-weighted correlation, *N* is the total sample size, *k* is the number of independent samples, is the fully corrected mean correlation, 80% CR represents the 80% credibility interval, and 95% CI represents the 95% confidence interval. For both 80% CR and 95% CI, the value on the left is the lower bound, and the value on the right is the upper bound. Gender coded 0 male, 1 female. Race coded 0 minority, 1 nonminority. Surface-level similarity coded 0 dissimilar, 1 similar. Experiential similarity coded 0 dissimilar, 1 similar. Relationship formality coded 0 formal, 1 informal.

a Indicates significant Q statistic.

wide and/or included zero. This suggests that moderators are likely operating for many of the correlates of mentoring.

Interaction frequency was moderately correlated with all three aspects of mentoring. As interaction frequency increased, so did prote´ge´ perceptions of instrumental support ( .29), psychoso- cial support ( .25), and relationship quality ( .26). All three confidence intervals overlapped, suggesting no differences across these three aspects of mentoring. Those in relationships of longer duration perceived greater psychosocial support ( .14) and higher relationship quality ( .18). Relationship length was less strongly related to instrumental support ( .08) and was weaker than that found for psychosocial support and relationship quality. The corrected correlations associated with prote´ge´ performance varied. As prote´ge´ performance increased, so did perceived instru- mental support ( .33) and perceived psychosocial support (

.24). By contrast, the corrected correlation for relationship quality was near zero ( .06). None of the confidence intervals associ- ated with prote´ge´ performance overlapped, indicating that the effects were different for instrumental support, psychosocial sup-

port, and relationship quality. Prote´ge´ motivation demonstrated a consistently positive association with all three aspects of mentor- ing ( .19, .18, and .23 for instrumental, psychosocial, and relationship quality, respectively), and the effects were small to medium in magnitude. All of these confidence intervals over- lapped, suggesting no appreciable difference across the three as- pects of mentoring. Finally, as prote´ge´ reports of social capital increased, so did perceived instrumental support ( .35) and relationship quality ( .54). A positive but small effect was also found for psychosocial support ( .10; the confidence interval did not include zero). None of the confidence intervals associated with social capital overlapped, indicating that the effects were strongest for relationship quality, followed by perceived instru- mental support, and then perceived psychosocial support.

**Potential Consequences**

Four categories of potential consequences were examined: atti- tudinal, behavioral, career-related, and health-related. The results

*Potential Antecedents, Correlates, and Consequences of Perceived Relationship Quality*

Construct *N k Rxy*  80% CR 95% CI Fail-safe *N*

Potential antecedents

Demographics

Prote´ge´ gender 2,237 14 .01 .02 [ .02, .02] [ .06, .03] 0

Mentor gender 1,262 6 .01 .01 [ .01, .01] [ .07, .04] 0

Prote´ge´ race 974 8 .00 .00 [ .05, .05] [ .07, .06] 0

Mentor race 269 3 .02 .02 [ .02, .02] [ .14, .10] 0

Human capital

Mentor human capital 339 3 .05 .05 [ .01, .12] [ .05, .16] 0

Prote´ge´ human capital 931 4 .05 .06 [.01, .10] [ .01, .12] 1

Relationship attributes

Deep-level similarity 959 7 .52 .59a [.16, 1.0] [.55, .64] 76

Surface-level similarity 610 4 .01 .01 [ .01, .01] [ .09, .07] 0

Experiential similarity 485 4 .11 .12 [.01, .22] [.03, .20] 5

Relationship formality 1,236 6 .13 .14a [.03, .25] [.09, .20] 11

Potential correlates

Interaction frequency 2,238 15 .24 .26a [ .02, .55] [.22, .30] 63

Relationship length 1,671 9 .17 .18a [ .02, .38] [.13, .23] 23

Performance 1,927 8 .05 .06a [ .01, .13] [.02, .11] 2

Motivation 1,755 8 .20 .23a [.09, .36] [.18, .27] 29

Social capital 706 5 .49 .54a [.23, .85] [.49, .60] 49

Potential consequences

Attitudinal outcomes

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Situational satisfaction | 2,296 | 11 | .30 | .38a | [.12, .64] | [.35, .42] | 73 |
| Sense of affiliation | 1,053 | 5 | .20 | .23 | [.23, .23] | [.17, .29] | 18 |
| Behavioral outcomes |  |  |  |  |  |  |  |
| Learning/socialization | — | — | — | — | — | — | — |
| Turnover intent | 888 | 3 | .19 | .24 | [ .24, .24] | [ .31, .18] | 0 |
| Career-related outcomes |  |  |  |  |  |  |  |
| Compensation | 1,018 | 3 | .01 | .01 | [ .01, .01] | [ .07, .06] | 0 |
| Perceived career success | 554 | 3 | .18 | .22 | [.22, .22] | [.14, .30] | 10 |
| Career prospects | — | — | — | — | — | — | — |
| Health-related outcomes |  |  |  |  |  |  |  |
| Strain | 1,495 | 6 | .07 | .08a | [ .19, .02] | [ .13, .03] | 0 |
| Self-efficacy | 2,243 | 10 | .12 | .14a | [.08, .21] | [.10, .19] | 19 |

*Note*. *Rxy* is the uncorrected mean sample-weighted correlation, *N* is the total sample size, *k* is the number of independent samples, is the fully corrected mean correlation, 80% CR represents the 80% credibility interval, and 95% CI represents the 95% confidence interval. For both 80% CR and 95% CI, the value on the left is the lower bound, and the value on the right is the upper bound. Dash indicates *k*  2. Gender coded 0 male, 1 female. Race coded

0 minority, 1 nonminority. Surface-level similarity coded 0 dissimilar, 1 similar. Experiential similarity coded 0 dissimilar, 1 similar. Relationship formality coded 0 formal, 1 informal.

a Indicates significant Q statistic.

are shown in Table 4 (perceived instrumental support), Table 5 (perceived psychosocial support), and Table 6 (relationship qual- ity). Looking across the three aspects of mentoring, the most consistent effects were found for attitudinal and behavioral con- sequences. However, the Q statistics associated with many of these effects were significant or the credibility intervals were wide or included zero. This indicates the likely presence of moderators.

**Attitudinal outcomes.** As shown in Tables 4 – 6, prote´ge´s who perceived greater instrumental support, psychosocial support, and higher relationship quality also reported higher situational satisfaction ( .36, .26, and .38, respectively). The confidence intervals for instrumental support and relationship quality over- lapped with each other, but not with perceived psychosocial sup- port. This suggests that the association with psychosocial support was weaker than instrumental support or relationship quality. Positive associations were also found for prote´ge´ sense of affilia- tion ( .33, .41, and .23 for perceived instrumental support, perceived psychosocial support, and relationship quality, respec- tively). Moreover, none of the confidence intervals overlapped,

indicating that all of these effects were different from one another, with the strongest effects for perceived psychosocial support. With a few exceptions (e.g., relationship between sense of affiliation and relationship quality), these effect sizes were medium according to Cohen’s (1988) standards.

**Behavioral outcomes.** Prote´ge´s who reported more instru- mental support and psychosocial support reported greater social- ization/learning ( .26, .24, respectively). This represents a small to medium effect for the two types of mentoring support. An insufficient number of primary studies precluded the examination of learning/socialization in relation to relationship quality. All three aspects of mentoring were associated with lower intentions to turn over ( .24, .10, and .24, for instrumental support, psychosocial support, and relationship quality, respec- tively). The confidence intervals overlapped for instrumental sup- port and relationship quality but were different for psychosocial support, indicating weaker effects.

**Career-related outcomes.** Prote´ge´s who perceived greater instrumental support tended to report higher compensation, al-

though the effect was small ( .10). For the other two aspects of mentoring, the corrected correlation was near zero ( .03 and

.01; see Tables 5 and 6). Moreover, the corrected correlation with compensation was stronger for instrumental support than for perceived psychosocial support or relationship quality. Perceptions of greater instrumental support and higher relationship quality were both related to stronger perceptions of career success (

.32 and .22, respectively, with overlapping confidence inter- vals). The corrected correlation between psychosocial support and perceived career success was below Cohen’s (1988) criteria for a small effect ( .08). In terms of perceived career prospects, a small to medium effect was found for perceived instrumental support and perceived psychosocial support ( .23 and .19, with overlapping confidence intervals). An insufficient number of primary studies were identified to examine the association between perceived career prospects and relationship quality.

**Health-related outcomes.** A small, negative relationship was found between strain and both perceived instrumental support and psychosocial support ( .12 for both). For relationship quality, although the effect was different from zero, it was weak (

.08). The corrected correlation for self-efficacy and instrumental support was near zero ( .06). In contrast, self-efficacy was positively related to perceived psychosocial support ( .18) and relationship quality ( .14).

**Moderator Analyses**

Comparisons were made between the three aspects of mentoring and potential antecedents, potential correlates, and potential con- sequences across academic and workplace mentoring. As is often the case with meta-analyses (e.g., Judge, Colbert, & Ilies, 2004; Ng et al., 2005), some of these comparisons involved a small number of primary studies. As such, caution should be exercised when interpreting these findings.

**Potential antecedents.** Consistent with the bivariate relation- ships, the effects associated with the demographic variables of prote´ge´ gender and prote´ge´ race were below Cohen’s (1988) criteria for a small effect for both academic and workplace men- toring, across all three aspects of mentoring. Furthermore, several of these corrected correlations were near zero (see Table 7). In contrast, several relationship attributes demonstrated notable dif- ferences across academic and workplace mentoring. Deep-level similarity displayed stronger effects in academic compared to workplace settings in terms of perceived instrumental ( .64 vs.

.38) and psychosocial support ( .75 vs. .48). No difference was found for relationship quality ( .74 vs. .72 for academic and workplace, respectively). A different pattern was found for surface-level similarity; the relationship was near zero with psychosocial support ( .04) for academic mentoring, yet small and positive for workplace mentoring ( .12). Relation- ship formality also demonstrated differential effects across type of mentoring relationship. A small effect was found among work- place mentoring, such that greater perceived instrumental support ( .10) and psychosocial support ( .10) were reported in informal relationships. No appreciable effect was found for aca- demic mentoring ( .05 and .10 for instrumental and psychosocial support, respectively). Unfortunately, there were an insufficient number of studies to compare the effect associated

with mentor race, mentor gender, mentor human capital, and experiential similarity across academic and workplace mentoring. **Potential correlates.** Interaction frequency demonstrated a large positive association with relationship quality in the work- place ( .44) and a small positive relationship in academic settings ( .16). Conversely, relationship length was more strongly related to relationship quality with academic mentoring ( .35) compared to workplace mentoring ( .09). The other difference involves the corrected correlation between prote´ge´ per- formance and psychosocial mentoring. The effect was stronger for workplace mentoring ( .32) than for academic mentoring (

.16). There were not enough primary studies to make comparisons in terms of social capital.

**Potential consequences.** Situational satisfaction was more strongly associated with perceived psychosocial support and rela- tionship quality in academic mentoring contexts ( .46 and

.52, respectively) than in the workplace ( .23 and .30, respectively). The opposite pattern was found for sense of affili- ation. Specifically, stronger positive effects were found for both perceived instrumental support and psychosocial support in work- place mentoring ( .37 and .27, respectively), compared to academic mentoring ( .02 and .06, respectively). Finally, the corrected correlation associated with self-efficacy and psycho- social mentoring was stronger for workplace ( .30) than for academic mentoring ( .08). An insufficient number of primary studies precluded comparisons between academic and workplace mentoring in terms of turnover intent, any of the career-related outcomes, or strain.

**Discussion**

The objective of this research was to provide an interdisciplin- ary meta-analytic summary of the potential antecedents, correlates, and consequences of prote´ge´ perceptions of instrumental support, psychosocial support, and relationship quality. In the sections that follow, we discuss the results related to the association among these prote´ge´ perceptions, and their relationships with various antecedents, correlates, and consequences. To guide the discus- sion, we offer a framework to organize our findings. Because many of the differences between academic and workplace men- toring reflect magnitude rather than direction, the proposed frame- work is likely to apply across mentoring relationships. Following the proposed framework, we highlight differences across academic and workplace mentoring that are substantial enough to have theoretical and practical significance. We then discuss broad the- oretical implications and propose suggestions for future research. Finally, practical suggestions are highlighted and the major limi- tations associated with this research effort are noted.

**Overview of the Proposed Framework**

Drawing from McGrath’s (1964) input–process– output model, we propose the framework depicted in Figure 1 to integrate our findings with regard to the antecedents, correlates, and consequences of pro- te´ge´ perceptions of instrumental support, psychosocial support, and relationship quality. The shaded arrows in Figure 1 depict theoreti- cally based but speculative associations based on the results of the current review. Due to the small number of primary studies (*n*  12) using longitudinal methods and the absence of studies using experi-

Table 7

*Subgroup Analysis of Academic and Workplace Mentoring*

Perceived instrumental support Perceived psychosocial support Relationship quality

Academic Workplace Academic Workplace Academic Workplace

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | Fail-safe |  |  |  | Fail-safe |  |  |  | Fail-safe |  |  |  | Fail-safe |  |  |  | Fail-safe |  |  |  | Fail-safe |
| Construct | *k* |  | *N* |  | *k* |  | *N* |  | *k* |  | *N* |  | *k* |  | *N* |  | *k* |  | *N* |  | *k* |  | *N* |

Potential antecedents

Demographics

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Prote´ge´ gender 6 .07b 0 49 .05a,c 0 6 .03a 0 40 .05a 3 5 .04b  Mentor gender 3 .01 0 15 .00b,c 0 2 .09a 0 15 .02a,c 0 — — | | | | | | | | | | | | | | | 0 | 7 | .00 0  .00 0 | |
| — | 5 |
| Prote´ge´ race | 3 | .05b | 0 | 12 | .06a | 0 | 3 | .06a | 0 | 12 | .02b | 0 | 3 | .03b | 0 | 4 | .06 | 0 |
| Mentor race | — | — | — | 4 | .07c | 1 | — | — | — | 5 | .07c | 2 | — | — | — | 3 | .02 | 0 |
| Human capital  Mentor human capital | — | — | — | 14 | .11a | 0 | — | — | — | 14 | .05a | 0 | — | — | — | 2 | .02 | 0 |
| Prote´ge´ human capital | 4 | .07a | 2 | 34 | .03a | 0 | 4 | .08a | 3 | 23 | .01a | 0 | — | — | — | 3 | .04b | 0 |
| Relationship attributes |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Deep-level similarity 2 .64a,b 24 9 .38a,b,c 59 4 .75a,b 56 9 .48a,b,c

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Surface-level similarity | 2 | .04b | 0 | 13 |
| Experiential similarity | — | — | — | 8 |
| Relationship formality | 2 | .05a | 0 | 11 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 2 | .04b | 0 | 14 |
| 27 | — | — | — | 7 |
| 11 | 2 | .01a | 0 | 11 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 78 | 3 | .74b | 42 | 2 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 20 | — | — | — | 2 | .07b | 1 |
| 0 | — | — | — | 3 | .11a | 4 |
| 11 | — | — | — | 4 | .11b | 5 |

.72a,b 27

Potential correlates

.04a

.22a,b

.10a,c

.12a,b,c

.02a

.10a,b

Interaction frequency 2 .35a,b 12 15 .26a 64 2 .25a,b 8 15 .31a,b

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 78 | 4 | .16a | 9 | 7 |

.44a,b,c 54

Relationship length 5 .13a 8 24 .07a 9 5 .08a 3 25 .15a,b 52 3 .35a,b 18 3 .09b,c 2

Performance 5 .31a,b 26 9 .35a,b 55 5 .16a,b 11 8 .32a,b,c 42 6 .07a 3 — — —

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 25 | 10 | .16a | 21 | 3 |
| — | 4 | .03a | 0 | 3 |

Motivation 6 .20b 18 17 .18a,b 45 7 .23a,b

Social capital — — — 10 .35a 61 — — Potential consequences

Attitudinal outcomes

.26a,b 13 4 .21a,b 12

.59a,b

|  |  |  |  |
| --- | --- | --- | --- |
| 32 | — | — | — |

Situational satisfaction 5 .37a,b 32 30 .36a,b 186 4 .46a,b 33 24 .23a,b,c 84 4 .52a,b,c 38 4 .30a,b 20

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Sense of affiliation 2 .02a 0 18 .37a,c 115 2 .06a 0 10 .27a,c 44 — — — 3 .23b 11

Behavioral outcomes

Learning/socialization 5 .23a,b 18 15 .27a,b 67 4 .29a,b 19 10 .27a,b 45 — — — 2 .84a,b 31

Turnover intent — — — 11 .26a 0 — — — 13 .11a 0 — — — 3 .24b 0

Career-related outcomes

Compensation — — — 12 .10a,b 12 — — — 7 .04b 0 — — — — — — Perceived career success

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| — — — 8 .35a,b 48 — — | | | | | | | | — | 5 | .28a,b 23 — — — — — — | | | | | | | |
| — | — | — | 9 | .23a | 33 | — | — | — | 3 | .19a | 8 | — | — | — | — | — | — |
| — | — | — | 8 | .12a | 0 | — | — | — | 6 | .05a | 0 | 2 | .07a | 0 | — | — | — |
| — | — | — | 7 | .21b | 22 | 4 | .08a | 2 | 7 | .30a,b,c | 35 | — | — | — | 4 | .18b | 10 |

Career prospects

Health-related outcomes

Strain

Self-efficacy

*Note*. Prote´ge´ gender and mentor gender coded 0 male, 1 female. Prote´ge´ race and mentor race coded 0 racial minority, 1 not racial minority. Surface-level similarity coded 0 dissimilar,

1 similar. Experiential similarity coded 0 dissimilar, 1 similar. Relationship formality coded 0 formal, 1 informal. Gender coded 0 male, 1 female. Race coded 0 minority, 1

nonminority. Relationship formality coded 0 formal, 1 informal. *k* is the number of independent samples, is the fully corrected mean correlation. Dash indicates *k*  2.

a Indicates significant Q statistic. b Indicates that the 80% credibility interval excludes zero. c Indicates that the relationship is significantly different across academic and workplace mentoring.

INPUTS PROCESSES OUTPUTS

Performance

(IS & PS only)

Motivation

Experiential Similarity (IS & RQ only)





Relationship Formality

Instrumental Relationship





Support Quality





Psychosocial









Support





Performance (IS & PS only) Motivation

Attitudinal Outcomes Behavioral Outcomes Career-related Outcomes





Health-related Outcomes (IS & PS only)









Deep-level Similarity







Interaction Frequency

Relationship Length (PS & RQ only)

Social Capital

*Figure 1.* Proposed process-oriented model of mentoring. Shaded arrows are supported by meta-analytic findings. Unshaded arrows are proposed associations. IS instrumental support; PS psychosocial support; RQ relationship quality.

mental designs to examine relationships included in the present re- search, the direction of causation depicted in Figure 1 is based on theory more than on empirical evidence.

**Processes.** At the core of Figure 1 are the three aspects of mentoring that are the focus of the current research: instrumental support, psychosocial support, and relationship quality. We found strong associations between these three aspects of mentoring; when prote´ge´s report greater instrumental support, they are also likely to perceive higher psychosocial support and perceive the relationship to be of higher quality. These associations are similar to what has been reported in previous research (T. D. Allen et al.,

2004; Kammeyer-Mueller & Judge, 2008). One exception is our finding of a corrected correlation of .53 between instrumental support and relationship quality, which is considerably higher than the .37 reported by T. D. Allen et al. (2004). This difference may be due to the larger number of primary studies included in the current research and the inclusion of studies from the academic and youth mentoring literatures.

Consistent with research on close relationships (Hinde, 1981; Huston & Burgess, 1979), we presume that some interaction between the mentor and the prote´ge´ is necessary for perceptions of relationship quality to develop. As such, we speculate that receiv- ing instrumental and psychosocial support helps create an inter- personal bond between mentor and prote´ge´. As this emotional connection strengthens, self-disclosure increases and trust is built (Keller, 2007), which leads the prote´ge´ to report higher relation- ship quality. As shown in Figure 1, we further expect that as perceptions of relationship quality grow stronger, instrumental and psychosocial support will increase because being in a relationship marked by positive evaluative regard reinforces norms and expec- tations for the provision of mentoring support (Ragins & Verbos,

2007). This is consistent with emerging theory on relational men- toring (J. K. Fletcher & Ragins, 2007; Ragins, 2010).

On the basis of the results of our review, several correlates are also positioned as process variables. This includes interaction

frequency, relationship length, and social capital (see Figure 1). The more frequently mentors and prote´ge´s interact, the greater the opportunity for the mentor to provide support to the prote´ge´. Building a close, satisfying relationship also requires getting to know one another and investing time in the relationship (Huston & Burgess, 1979). Furthermore, basic principles of positive rein- forcement predict that when relationships are viewed as more supportive and satisfying, mentors and prote´ge´s will interact more frequently. Our finding of a consistently positive relationship between interaction frequency and all three aspects of mentoring supports the possibility of a reciprocal relationship.

Similar to interaction frequency, relationship length is depicted as having a bidirectional association with perceived psychosocial support and relationship quality, but not with instrumental support. This is supported by mentoring theory, which argues that psycho- social support represents a deeper level of relating and, as such, may require sustained mentor–prote´ge´ interactions to develop (Kram, 1985). Likewise, high-quality relationships take time to develop, requiring repeated interactions over time (Hinde, 1981; Huston & Burgess, 1979). In contrast, instrumental support can occur any time in the mentoring relationship (Kram, 1985), which may be why it was unrelated to relationship length.

The amount of support prote´ge´s received from family, friends, coworkers, and others (social capital) related positively to all three aspects of mentoring. Due to greater breadth and depth of rela- tional experiences, prote´ge´s with more social capital are perhaps better able to leverage mentors for tangible assistance. Conversely, providing instrumental support may build social capital through information, sponsorship, and skills offered by the mentor to the prote´ge´ (Chow & Chan, 2008). Social capital may also contribute to perceptions of relationship quality if a mentor helps the prote´ge´ feel connected to and well regarded by others (parents, teachers, colleagues). It also seems likely that in more satisfying mentoring relationships, mentors will be more invested in helping prote´ge´s develop social capital. Interestingly, social capital is less strongly

related to psychosocial support. This is consistent with the per- spective that social capital serves more of an instrumental purpose; it is a resource that individuals can use to pursue personally relevant interests and outcomes (Bourdieu, 1986).

**Inputs.** On the basis of the findings of the present review, two aspects of similarity (deep-level, experiential), relationship formal- ity, prote´ge´ performance, and prote´ge´ motivation are positioned as inputs to perceptions of mentoring (see Figure 1).

Of all the variables investigated, deep-level similarity (e.g., similarity in attitudes, values, beliefs, personality) exhibits the strongest and most consistent positive association with all three aspects of mentoring, particularly psychosocial support and rela- tionship quality. The attraction-similarity paradigm (Byrne, 1971) and decades of social-psychological research (see Bukowski, Mot- zio, & Meyer, 2009; Graziano & Bruce, 2008) support the prop- osition that deep-level similarity likely facilitates the development of a strong relational bond and the provision of mentoring support. Although not examined in the present study, we also propose that deep-level similarity is associated with relationship length and interaction frequency (see unshaded arrow in Figure 1). The ratio- nale here is that similarity in values, beliefs, and personality is not readily observable; it takes time to become salient among rela- tional partners and emerge as a consequence of interpersonal interaction (Harrison et al., 1998).

Experiential similarity is depicted as an input variable related to perceived instrumental support and relationship quality. Mentors who are similar to their prote´ge´s in terms of educational back- ground, departmental affiliation, or functional area may be better able to provide appropriate technical guidance, help the prote´ge´ engage in networking activities, and recommend the prote´ge´ for learning opportunities, all of which typify instrumental support. In addition, consistent with Festinger, Schachter, and Back’s (1950) classic research on how proximity influences friendship patterns, some aspects of experiential similarity such as being in the same academic department, geographic location, or organization may increase the likelihood that a high-quality relationship will develop between mentor and prote´ge´.

Another mentoring input that is consistently, albeit weakly, related to perceptions of mentoring is relationship formality. Com- pared to prote´ge´s in formal relationships, those in informal rela- tionships perceive more instrumental and psychosocial support and report higher relationship quality. In informal mentorships, the mentor may be more committed to the relationship and as a result is more willing to invest the time and energy needed to help the prote´ge´ accomplish his or her goals (Ragins & Cotton, 1999). Informal mentoring relationships also develop spontaneously based on mutual attraction (Kram, 1985), and social psychology research on close relationship formation notes that such attraction processes are important in the development of trusting, satisfying, high-quality relationships (Levinger, 1979).

Performance and motivation are also positively related to both types of perceived support. In addition, greater prote´ge´ motivation (but not performance) related to more favorable perceptions of relationship quality. The findings for prote´ge´ performance are generally consistent with previous meta-analytic research on work- place mentoring, which has found positive associations between performance and both types of mentoring support (Kammeyer- Mueller & Judge, 2008). However, unlike Kammeyer-Mueller and Judge (2008), we found stronger effects for instrumental support

compared to psychosocial support. As depicted in Figure 1, higher performing or more motivated prote´ge´s may receive more men- toring support because they proactively seek out support from mentors, or because they are viewed as more desirable relational partners (Green & Bauer, 1995; Singh, Ragins, & Tharenou,

2009). Our finding of no appreciable relationship between prote´ge´ performance and relationship quality suggests that higher quality relationships are not necessarily dependent on the performance of the prote´ge´. Rather, perceptions of relationship quality are likely based upon the manner that partners aggregate, process, and reflect on interactions with each other over time (M. S. Clark & Reis,

1988).

**Outputs.** A variety of prote´ge´ outcomes are depicted in Figure 1. The provision of greater instrumental and psychosocial support may lead to higher prote´ge´ performance as well as en- hanced motivation. This may be because the receipt of mentoring support helps prote´ge´ s develop specific skills (Kram, 1985; Lankau & Scandura, 2002; Linnehan, 2001). Mentoring may also build self-confidence and motivation (Kram, 1985; Linnehan,

2003). As prote´ge´s learn new skills and demonstrate success, this is likely to strengthen the belief that they can tackle other chal- lenges and achieve success in other domains.

Consistently positive associations also exist between all three aspects of mentoring and attitudinal outcomes. It may be that mentors are a lens by which prote´ge´s develop beliefs about the institution in which the relationship is situated (e.g., community, university), as well as the social aggregates that comprise that institution (Baranik, Roling, & Eby, 2010; Orpen, 1997). This might explain why when prote´ge´s perceive greater mentoring support and report stronger perceptions of relationship quality, they also report higher satisfaction with the institutions in which the mentoring relationship is embedded as well as the people associated with these institutions (e.g., fellow students, teachers, coworkers). Our findings regarding situational satisfaction are similar to meta-analytic findings from the workplace literature (T. D. Allen et al., 2004; Kammeyer-Mueller & Judge, 2008), although the magnitude of corrected correlations is slightly higher in the present review for all three aspects of mentoring.

In terms of sense of affiliation, social exchange theory (Blau,

1964) suggests that feelings of support and positive affect gener- ated in the mentoring relationship may create a sense of obligation to reciprocate. This may manifest in prote´ge´ perceptions of loyalty and psychological attachment toward the social context in which the mentoring relationship exists. Interestingly, the strongest ef- fects here were found for perceived psychosocial support. This may be because this aspect of mentoring is most closely tied to a prote´ge´’s sense of identity and self-worth (Kram, 1985). Sense of affiliation shares this emphasis on identification and belonging- ness.

The behavioral outcomes of learning/socialization and turnover intentions are also associated with perceptions of mentoring. Al- though the content varies considerably across types of mentoring (e.g., youth mentors may teach how to resist negative peer influ- ences, academic mentors may teach technical skills), learning and accomplishing goals are discussed as important components of mentoring across the life span (Jacobi, 1991; Kram, 1985; Nakkula

& Harris, 2005). The process of scaffolding (D. Wood, Bruner, & Ross, 1976) has been applied to mentoring to describe how men- tors can create discrete learning experiences that build on one

another and eventually enhance prote´ge´s’ developmental capacity (Bearman et al., 2007). Likewise, socialization into the academy is a major goal of academic mentoring, particularly in postsecondary education (Austin, 2002). Similarly, learning the ropes and becom- ing more integrated into an organization are central goals of workplace mentoring (Kram, 1985).

In terms of turnover intentions, most of the primary studies were conducted within the workplace. Prote´ge´s who perceive more instrumental support from their mentors may report lower inten- tions to leave because their career-related development needs are being met. Instrumental support is also associated with tangible gains in one’s current organization, including exposure to high- level managers and being selected for high-profile job assignments (Kram, 1985), which may increase perceived costs of leaving. Perceptions of psychosocial support and relationship quality were also associated with lower turnover intentions, perhaps because these increase an individual’s sense of embeddedness in the orga- nization, which is related to less likelihood of voluntary turnover (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001). Prior meta- analytic research has only examined turnover intent in relation to psychosocial mentoring in the workplace (T. D. Allen et al., 2004), finding a similar effect.

The associations with career-related outcomes should be inter- preted cautiously due to the small effect sizes, inconsistent effects across the three aspects of mentoring, and because almost all of the primary studies are from the workplace. Perhaps not surprisingly due to the emphasis on preparing prote´ge´s for advancement and supporting their career development (Kram, 1985), greater per- ceived instrumental support is related to all three career-related outcomes: compensation, perceptions of career success, and career prospects. This is generally consistent with previous meta-analytic research (T. D. Allen et al., 2004; Kammeyer-Mueller & Judge,

2008). By contrast, we found that greater psychosocial support is only associated with more favorable perceptions of career pros- pects. One explanation is that psychosocial support strengthens the prote´ge´’s beliefs about his or her competence, identity, and effec- tiveness in a professional role (Kram, 1985). This may instill expectations that career opportunities are available and heighten a prote´ge´’s career expectations, rather than influence objective or subjective career success. Finally, we found that higher relation- ship quality is only associated with stronger perceptions of career success.

The final output in Figure 1 is health-related outcomes, which include strain and self-efficacy. In line with the finding that greater instrumental and psychosocial support is associated with lower strain, a longstanding body of research has found that instrumen- tally oriented social support (providing tangible help when needed) and emotionally oriented social support (displaying empathy, lis- tening) are associated with less strain (Viswesvaran, Sanchez, & Fisher, 1999). Self-efficacy is also associated with psychosocial support and relationship quality, but not instrumental support. Bandura’s theory (1986) delineates four ways that self-efficacy beliefs develop: mastery experiences, role modeling, persuasion, and emotional experiences. Only the first pathway captures the instrumental aspect of mentoring. By contrast, the other three center on socioemotional experiences (Bearman et al., 2007). While speculative, this may help explain the finding that self- efficacy is only associated with the two aspects of mentoring that

have an expressive or emotional component: perceived psychoso- cial support and relationship quality.

**Additional observations.** A few points deserve mention re- garding the proposed framework. This includes the notable omis- sion of demographic attributes and human capital constructs, as well as the small number of longitudinal primary studies upon which the framework is based.

***Demographic attributes of prote´ge´ and mentor.*** Although there has been considerable speculation about gender and race differences in prote´ge´ perceptions of mentoring (e.g., Girves, Zepeda, & Gwathmey, 2005; Noe, 1988; Thomas, 1990), empirical support is mixed (for a review, see Ragins, 2007). Our review revealed that none of the mentor or prote´ge´ demographic charac- teristics are meaningfully related to perceptions of instrumental support, psychosocial support, or relationship quality. This is gen- erally consistent with previous meta-analytic research (Kammeyer-Mueller & Judge, 2008; O’Brien et al., 2010), al- though it should be noted that Kammeyer-Mueller and Judge (2008) found that in the workplace, White prote´ge´s reported slightly higher instrumental support ( .11) than did non- Whites. There are a sufficient number of primary studies to be reasonably confident in our findings for prote´ge´ gender, prote´ge´ race, and mentor gender. In contrast, the limited number of pri- mary studies, a corrected correlation of .09 for both perceived instrumental and psychosocial support, and a confidence interval that does not include zero suggest that it may be too early to rule out a main effect for mentor race.

Some scholars suggest that it is not the race or gender of either mentoring partner per se that matters but rather the similarity between the two individuals (Ragins, 1997a). Our results indicate that overall surface-level similarity (operationalized as either gen- der similarity or as race similarity) is not associated with prote´ge´ perceptions of mentoring support or relationship quality. However, before dismissing compositional effects of race and gender, it is important to note that there were not enough primary studies to examine cross-race and cross-gender relationships separately.

***Human capital constructs.*** We also found limited support for mentor or prote´ge´ human capital. Kammeyer-Mueller and Judge (2008) also found no support for prote´ge´ human capital (job tenure, education) as predictors of instrumental support, psychos- ocial support, or mentoring quality/satisfaction in workplace stud- ies. One exception in the present study is a weak association between mentor human capital and instrumental support, with greater support reported by prote´ge´s when their mentor has less human capital. While speculative, one explanation may be that mentors with less education, experience, and influence may be younger and/or earlier in their own professional career. As a consequence they may have fewer competing demands and thus more time to provide tangible assistance to help their prote´ge´s develop. However, because of the weak and isolated association between mentor human capital and prote´ge´ perceptions of men- toring, we did not include this variable in our proposed framework. ***Limited longitudinal studies.*** A final observation is that only

12 studies contributed longitudinal data to the effect sizes reported in the current research. Six of these studies focused on youth (Black, Grenard, Sussman, & Rohrbach, 2010; Blakely et al.,

1995; Holt, 2007; Linnehan, 2003; Parra, DuBois, Neville, Pugh- Lilly, & Pavinelli, 2002; Ringenberg, 2004), five involved work- place mentoring (Duster, 2010; Higgins & Thomas, 2001; Orpen,

1995; Tharenou, 2005; Wanberg, Welsh, & Kammeyer-Mueller,

2007), and one was on academic mentoring (Green & Bauer,

1995). Because longitudinal studies provide stronger (but not definitive) evidence for causality, we briefly summarize the find- ings of these studies to inform our limited understanding of cau- sality.

Several longitudinal studies from the workplace mentoring lit- erature examined prote´ge´ perceptions of mentoring as predictors of subsequent prote´ge´ career outcomes, yet often reached different conclusions. Orpen (1995) found that more instrumental support predicted subsequent promotions, whereas other longitudinal re- search failed to find significant effects (Higgins & Thomas, 2001; Tharenou, 1995). In terms of other indicators of career success, Tharenou (2005) reported that although greater instrumental sup- port at Time 1 predicted the length of time to the next promotion and perceived chance of promotion at Time 2, it did not predict whether someone was promoted in the last year or the promotion rate. In terms of the relationship between prote´ge´ perceptions of greater psychosocial support and subsequent promotion, research generally has found nonsignificant relationships (Higgins & Thomas, 2001; Orpen, 1995; Tharenou, 1995). An exception is the finding that greater psychosocial support at Time 1 predicted more positive beliefs about the chance of future promotions and the time since one’s last promotion, both measured at Time 2 (Tharenou,

1995). The other career outcome that has been examined in two longitudinal studies is compensation. These studies reached dif- ferent conclusions. Orpen found that greater instrumental support predicted later salary growth, whereas greater psychosocial sup- port did not. By contrast, Tharenou found that higher psychosocial support predicted change in salary over time, whereas greater instrumental support was unrelated to change in salary.

Five longitudinal studies examined perceptions of mentoring in relation to well-being, motivation, attitudinal, and performance outcomes (Black et al., 2010; Duster, 2010; Green & Bauer, 1995; Holt, 2007; Linnehan, 2003). Black and colleagues’ (2010) study of the protective role of mentoring on high school students’ self- destructive behavior found that more psychosocial support pre- dicted greater subsequent well-being. No other longitudinal studies provide insight into the effect of mentoring on prote´ge´ well-being. Several studies have examined mentoring in relation to motiva- tional variables. Using a similar population as Black and col- leagues, Holt (2007) found that neither perceptions of greater instrumental support nor higher relationship quality predicted changes in prote´ge´ academic motivation. By contrast, more instru- mental mentoring predicted increased prote´ge´ goal setting at a later point in time (although relationship quality did not). Interestingly, Holt also found that prote´ge´s who reported greater instrumental support (but not relationship quality) reported a significant positive change in a sense of belonging at school.

Tackling a different question, Green and Bauer (1995) used a three-wave design to examine whether prote´ge´ potential (e.g., GRE scores, commitment to the graduate program, commitment to research, first semester grade point average, prior research expe- rience) predicted perceptions of the amount of mentoring provided. They also examined whether prote´ge´s who receive more mentor- ing perform better in the future. They found consistent support for the idea that mentor advisors look for potential in prote´ge´s and provide more mentoring to those who are more capable. Interest- ingly, they found no support for the rival prediction that greater

mentoring support leads to subsequent performance and commit- ment. Two other studies examined whether prote´ge´ potential re- lates to subsequent perceptions of mentoring. Duster (2010) ex- amined the association between performance prior to entering a formal mentoring program and subsequent relationship quality as reported by the prote´ge´. No significant relationship was found. Likewise, Linnehan (2003) examined whether changes in prote´- ge´s’ positive attitude toward work predicted relationship quality in a youth–adult mentoring program aimed at preparing students for work. Again, no significant relationship was found. The results from both Duster and Linnehan are somewhat at odds with Green and Bauer.

Four final longitudinal studies provide insight on the association between mentoring perceptions and other variables (Blakely et al.,

1995; Parra et al., 2002; Ringenberg, 2004; Wanberg et al., 2007). All four studies focused on relationship quality. The findings indicate that greater prote´ge´ self-disclosure (Wanberg et al., 2007), positive changes in prote´ge´ human capital (Ringenberg, 2004), and monthly reports of interaction with the mentor (Blakely et al.,

1995) predict later reports of relationship quality. Relationship quality, collected monthly and averaged over the course of the relationship, was positively related to relationship length (Parra et al., 2002).

Overall, the longitudinal research examining prote´ge´ percep- tions of mentoring in relation to career outcomes and prote´ge´ motivation is generally inconclusive. It is also noteworthy that no longitudinal research has examined how relationship quality re- lates to career outcomes. Given the small number of studies and the ways in which longitudinal research can vary, it is not surpris- ing that we are unable to draw definitive conclusions at this juncture. One way that longitudinal studies vary is the time lag(s) used. For example, with regard to workplace studies examining career outcomes, the time lag between Time 1 and Time 2 data collection used by Tharenou (2005) was 1 year while the lag used by Higgins and Thomas (2001) was 7 to 8 years. Another way in which the studies vary is operationalization of the outcome. For example, in their investigations of the career outcome, salary, Orpen (1995) used the percentage difference in salary between the initial (Time 1) and current (Time 2) salary while Tharenou investigated current salary level at Time 2. These differences also exist in the studies reviewed that examined other relationships. For example, there were only several months between Time 1 and Time 2 in Duster (2010) while the research conducted by Green and Bauer (1995) spanned 2 academic years. Moreover, although the time lag used in some studies is based on logic and/or theory (e.g., the beginning and the end of the academic school year; Linnehan, 2003), the time lags used in other studies appear to be based more on convenience or to be without a basis in theory (e.g., Orpen, 1995). As longitudinal research continues to accumulate, greater insight into the way in which mentoring relationships unfold and yield positive benefits should emerge.

**Differences Across Academic and Workplace**

**Mentoring**

Although the framework presented in Figure 1 is proposed to be broadly applicable to mentoring, several differences across types of mentoring deserve mention. To guide the subsequent discus- sion, we take a conservative approach and discuss differences that

approach or exceed Cohen’s (1988) criterion for a medium effect ( .30). However, we recommend caution in interpreting differ- ences across academic and workplace mentoring, given the small number of primary studies used to make some of these compari- sons.

Referring to Table 7, deep-level similarity demonstrates a stron- ger positive association with prote´ge´ perceptions of instrumental and psychosocial support in academic, compared to workplace, mentoring relationships. Likewise, the positive association be- tween relationship length and relationship quality is considerably stronger for academic mentoring than for workplace mentoring. This may reflect differences in the nature and purpose of mentor- ing across the two settings. While coursework provides a founda- tion for learning, a faculty mentor can facilitate broader and deeper involvement in the learning process by encouraging students and providing opportunities for development outside the classroom (Jacobi, 1991). Academic mentoring also utilizes an apprentice- ship model where identification and role modeling are essential elements (W. B. Johnson, 2007). Perhaps the more similar the prote´ge´ views his or her mentor to be in terms of attitudes, values, beliefs, and personality, the stronger the identification process and the more likely that instrumental and psychosocial support will occur (Turban, Dougherty, & Lee, 2002). Deep-level similarity may also be particularly important in academic settings because full-time faculty members are still disproportionately White and male (University Leadership Council, 2008). Female and racial minority prote´ge´s will have difficulty finding demographically similar mentors, so connecting with a majority group member mentor who is similar in other ways may facilitate the develop- ment of a supportive mentoring relationship.

In terms of relationship length, academic mentors are needed to support prote´ge´s throughout individual programs of study, which are typically multiple years in length and require ongoing mentor- ing support. In fact, mentoring relationships often last longer in academic settings than in other types of organizations (Erdem & Aytemur, 2008). In addition, academic mentors often help students navigate through a series of difficult and interrelated decisions related to schooling, careers, and occupations, all of which have long-term and far-reaching implications (W. B. Johnson, 2007). This may be why academic mentoring relationships that are sus- tained over a longer period of time are associated with higher relationship quality. By contrast, in workplace settings, mentors may provide more discrete advice and support to prote´ge´s. As such, relationship quality may be less dependent on a long-term mentoring relationship in the workplace.

Interestingly, greater interaction frequency is more strongly related to prote´ge´ perceptions of relationship quality in workplace mentoring than in academic mentoring relationships. We also find that a greater sense of affiliation is more strongly related to instrumental support in workplace mentoring compared to aca- demic mentoring. This may be because in the workplace, mentor- ing occurs beyond the scope of the mentor’s and the prote´ge´’s normal job duties. Even in formal programs, mentoring is a dis- cretionary activity, requiring both individuals to carve out time from their normal work schedules to interact on a regular basis. As such, interacting frequently with a workplace mentor may not only be highly salient to prote´ge´s, it may also be perceived as a visible indicator of their mentors’ commitment to the relationship. In contrast, mentoring in academic settings is more embedded in the

pedagogical approach to teaching (Jacobi, 1991), so academic mentors may have more opportunities to interact with student prote´ge´s. This may lead prote´ge´s to give less weight to interaction frequency when developing perceptions of relationship quality.

**Theoretical Implications**

Theory and research on other types of helping relationships may have utility for understanding and extending the relationships proposed in Figure 1. In the context of psychotherapy, the concept of the working alliance between counselor and therapist (Green- son, 1965) has been offered to explain the consistent finding that, generally speaking, different therapies produce similar therapeutic gains (Luborsky, Singer, & Luborsky, 1975). In other words, it is the client’s perception of the therapist, rather than the specific therapeutic approach, that “is one of the keys, if not *the* key, to the change process” (Bordin, 1979, p. 252). The working alliance has been positioned as a pantheoretical concept that underlies a wide range of helping behaviors (Horvath & Luborsky, 1993) and, by extension, may apply to other types of relationships, such as student–teacher (Bordin, 1979), counselor–supervisor (Bordin,

1983), and perhaps mentor–prote´ge´.

As an illustration, there are several parallels between the con- cept of the working alliance and the mentoring relationship. The working alliance is characterized by mutual agreement on goals, a focus on tasks that form the substance of the relationship, and an emotional bond between individuals. The components are highly similar to the instrumental support (that focuses on tasks and goals), psychosocial support (that focuses on affirmation, accep- tance, and trust), and relationship quality (positive personal attach- ments) that are at the core of the mentoring process. Given these similarities, we propose that research on the working alliance in therapy and clinical supervision may be a useful theoretical bridge to enhance our understanding of the mentoring process.

Our findings also have links to the broader relationship science literature. Most notably, the consistent finding that deep-level similarity relates to all three aspects of mentoring is mirrored in research on children’s friendships (Newcomb & Bagwell, 1995) and romantic relationships (Gaunt, 2006; Gonzaga, Carter, & Buckwalter, 2010). Likewise, our finding that perceptions of men- toring relate to a wide range of positive prote´ge´ outcomes is consistent with the broader psychological literature on positive effects of relationships on psychological well-being (Baumeister & Leary, 1995). It is also noteworthy that generally speaking, social support is viewed as consisting of material aid, behavioral assis- tance, intimate interaction, feedback, and positive social interac- tions (Barrera & Ainlay, 1983), all of which can be found in mentoring relationships characterized by instrumental support, psychosocial support, and high relationship quality.

**Limitations**

**Methodological and substantive features of primary studies.** The results of this research must be viewed within the context of the limitations associated with the literature that comprised this review. The vast majority of effects reported were based on cross- sectional data (93%) and none were based on data from experi- mental designs, precluding our ability to make causal inferences. For instance, the finding that deep-level similarity relates to all

three aspects of mentoring may mean that individuals who are more similar develop a stronger mentoring relationship. However, it may also mean that prote´ge´s who report higher quality relation- ships tend to recall their mentors as more similar to themselves (Zalesny & Kirsch, 1989). The youth mentoring literature is more likely to use longitudinal or experimental designs, although much of this research involves comparisons of those with and without experience as a prote´ge´ rather than examining prote´ge´ perceptions of relational experiences (see DuBois et al., 2002). To draw causal inferences about mentoring, more methodologically rigorous re- search is sorely needed.

Another methodological limitation is that most of the primary studies are based on research in which self-report data were used for both the independent and dependent variables. This raises concerns regarding the potential for common source bias to inflate the size of the relationships observed. One way to help offset these concerns in future research is to include multisource data. For example, owing to the strong effects for deep-level similarity, additional research is needed where data are collected from both mentors and prote´ge´s (to allow for direct assessment of similarity). Including data on such issues from both mentors and prote´ge´s is important in that mentoring partners often have divergent perspec- tives on their mentoring relationship (Waters, 2004).

It should also be mentioned that although each area of men- toring scholarship was reasonably well represented, about two thirds of the primary studies were from the workplace mentor- ing literature (*n*  14 for youth, *n*  36 for academic, *n*  117 for workplace, *n*  6 for combined academic and workplace). As a consequence, our findings are arguably most representa- tive of workplace mentoring. With that said, our research makes a contribution to the mentoring literature by revealing that subgroup comparisons of academic and workplace mentoring demonstrate potentially important differences between the two types of mentoring. The identification of these differences helps lay the groundwork for additional research. The relatively small number of primary youth mentoring studies that examined mentoring perceptions is also noteworthy because it is not just participation in mentoring that matters for youth but also the quantity and quality of mentor–prote´ge´ interactions (Darling,

2005). We hope that identifying this gap in the youth mentoring literature encourages additional research on variability in men- toring experiences among youth. This is important in that the results of the present study demonstrate that relational percep- tions are associated with a wide range of antecedents, corre- lates, and consequences.

Finally, in some cases, our meta-analytic results were based on a small number of primary studies. This was particularly true in the analyses by type of mentoring. The fail-safe *N*s further suggest that some of the findings are potentially unstable. However, because we included data from unpublished sources, we were able to compare the results from published and un- published sources and found no differences. Thus, although in many cases one study with different result could possibly change the weaker effects (e.g., prote´ge´ gender and instrumen- tal support, prote´ge´ human capital and instrumental support), given that the effect sizes for published studies in this area do not differ considerably from effect sizes in unpublished studies, it is unclear whether the results would actually change if more data were available.

**Exclusion of most recent studies of mentoring.** As is often the case with meta-analytic research, by the time the current research was submitted and reviewed, the data were more than a year old. At the suggestion of the Associate Editor, we conducted an additional review of the literature to ensure we had not missed any key studies published between December 2010 and April

2012.

This involved a search of the literature that appeared in 25 journals from December 2010 through April 2012. The journals included were *Academy of Management Journal, Journal of Man- agement Studies, Journal of Management, Journal of Applied Psychology, Personnel Psychology, Journal of Vocational Behav- ior, Journal of Community Psychology, Journal of Career Devel- opment, Journal of Organizational Behavior, Sex Roles, Journal of Applied Social Psychology, Journal of Primary Prevention, Jour- nal of Business Research, BMC Health Services Research, Amer- ican Journal of Community Psychology, Journal of Managerial Issues, American Journal of Community Psychology, Child Devel- opment, Journal of Research on Adolescence, Applied Develop- mental Science, Journal of Research in Higher Education, Profes- sional Psychology: Research and Practice, Teaching of Psychology, Academic Medicine,* and *Mentoring and Tutoring.* The 25 journals were selected on the basis of several criteria. First we identified the top three ranked journals for each substantive area (e.g., applied psychology, education, social work) based on impact. We next identified the journals that appeared most fre- quently in our current list of articles included in the meta-analyses. Finally, we contacted prominent authors in the youth and student– faculty mentoring literatures and asked them to identify the top three journals within their field that publish mentoring research. This search resulted in a total of 73 hits. All 73 articles were screened by one of the senior authors. From that screening, a total of three articles were identified that met the criteria consistent with the studies included in the meta-analysis. These three studies are summarized below.

Kwan, Liu, and Yim (2011) investigated supervisory mentoring within the workplace. Consistent with the results of our meta- analysis, their results supported a positive relationship between both perceived psychosocial and instrumental mentoring support with motivation (i.e., organizational citizenship behavior). Wein- berg and Lankau (2011) examined mentoring within a formal workplace program. Their results were consistent with our analy- ses in that they found no relationship between demographic vari- ables and perceived instrumental/psychosocial mentoring support or mentoring quality. In addition, the effect sizes associated with interaction frequency and perceived mentoring support, as well as interaction frequency and relationship quality, were consistent with ours. Kraimer, Seibert, Wayne, Liden, and Bravo (2011) investigated workplace perceived instrumental mentoring support. They reported no relationship between gender and perceived in- strumental mentoring support or between voluntary turnover and perceived instrumental mentoring support. However, they did find moderate in magnitude positive relationships between perceived instrumental mentoring support and performance, situational sat- isfaction, sense of affiliation, and prote´ge´ human capital. In sum, the results of these studies were consistent with the results reported in our main analyses.

**Future Research**

Although dedicated scholarly effort has been applied to the study of mentoring relationships for over a quarter of a century, our findings help demonstrate that the overall knowledge base remains relatively small and somewhat scattered. Moreover, we know considerably more about the correlates and consequences of mentoring than we do about the predictors of prote´ge´ perceptions of mentoring. Considerable research has examined the benefits of mentoring. It is now time to turn our attention to predictors.

**Better understanding of predictors.** There are several re- lated high-priority topics that can increase our understanding of what predicts prote´ge´ perceptions of mentoring. Research is sorely needed to examine how mentor and prote´ge´ demographics *jointly* influence perceptions of mentoring. For instance, simply compar- ing same-race or cross-race relationships may obfuscate the unique relational dynamics and outcomes associated with majority mentor–majority prote´ge´ relationships, compared to minority mentor–minority prote´ge´ relationships. Substantial differences in power and influence between White and Black mentors may manifest in greater tangible benefits (e.g., career success, social capital) for those in White mentor–White prote´ge´ and Black mentor–Black prote´ge´ relationships. On the other hand, due to the fewer numbers of Blacks in positions of power and authority compared to Whites, Black prote´ge´s are disproportionately likely to be in cross-race mentoring relationships (Thomas, 1990). Al- though the empirical evidence is limited, cross-cultural theory raises concerns about misunderstandings or dysfunctions that can occur in cross-race relationships due to issues around trust, power dynamics, interpersonal styles, and apprehensions about request- ing help (Brinson & Kottler, 1993). Blacks may also be more likely to be in formal relationships due to less access to mentors than Whites (Cox & Nkomo, 1991). This is potentially important because as the present review documents, prote´ge´s hold less fa- vorable perceptions of mentoring in formal mentoring relation- ships. Similar arguments can be made for the importance of examining different configurations of gender similarity and dis- similarity in mentoring relationships (see McKeen & Bujaki,

2007).

We also know little about the association between mentor and prote´ge´ individual-difference characteristics and perceptions of mentoring support or relationship quality. For example, prote´ge´s higher in neuroticism may perceive lower psychosocial support and weaker relationship quality due to a tendency to experience worry, apprehension, fear, sadness, and irritability, and an incli- nation to view events as threatening (Watson, 2000). Indeed, neuroticism is associated with lower quality romantic relationships (Karney & Bradbury, 1995; Slatcher & Vazire, 2009), friendships (Lopes, Salovey, & Straus, 2003), and supervisor–subordinate relationships (Bernerth, Armenakis, Field, Giles, & Walker, 2008). Similarly, given preliminary evidence for the influence of pro-

te´ge´ narcissism on prote´ge´ perceptions of the amount of mentoring support provided and relationship quality, more work is needed linking mentor and prote´ge´ dark-side characteristics to perceptions of mentoring (T. D. Allen et al., 2009). Attachment style (Ain- sworth, 1989) may also be an important dispositional trait given the importance of trust and disclosure in forging a relational bond among mentor and prote´ge´ (Rhodes, 2005). We also encourage researchers to consider how technical and interpersonal skills of

both mentor and prote´ge´ relate to perceptions of instrumental support, psychosocial support, and relationship quality. This is important in light of research linking the mentor’s own career success to prote´ge´ performance (Tonidandel, Avery, & Phillips,

2007) as well as research indicating that mentors often select prote´ge´s on the basis of potential and ability (T. D. Allen, Poteet,

& Russell, 2000).

Another important area for future research involves unpacking the construct of relationship formality. Although consistent across the three aspects of mentoring, effects for relationship formality were small. This may reflect the current practice of making a gross distinction between formal and informal mentoring, rather than examining specific aspects of relationship formality. Formality can exist in how the relationship is initiated (i.e., formally arranged by a third party, spontaneously developed, or some combination thereof) as well as how the relationship is structured (e.g., explicit developmental goals, prearranged relationship length, interaction guidelines; Eby et al., 2007; Sipe, 2005). For instance, a formal mentoring program for undergraduates may use a third-party matching process (high formality) but then provide little guidance or direction in terms of relationship structure (low formality). Alternatively, a formal organizational mentoring program may allow mentors and prote´ge´s to provide input into who they are matched with (low formality), yet provide considerable guidance on how often to meet or require a mentoring contract with specific goals and timelines (high formality; Finklestein & Poteet, 2007). The effects of relationship formality on prote´ge´ perceptions of mentoring may vary depending on which aspects are emphasized. For example, the natural pairing of mentors and prote´ge´s should enhance positive evaluative reactions and psychosocial support due to similarity-attraction effects (Byrne, 1971). In contrast, hav- ing goals and specific relationship expectations may predict greater instrumental support.

**Identify moderating effects.** Our results also indicate that there is a considerable heterogeneity associated with many of the estimated effects, suggesting the importance of examining moder- ators. Although there is a wide array of variables that could be considered, we focus on relationship formality, prote´ge´ gender, and mentor gender because each has been discussed as influencing mentoring processes and outcomes. Although we coded for these variables in our meta-analysis, there were an insufficient number of primary studies to examine any of these as moderators.

As previously discussed, formal and informal mentorships vary in duration, relationship initiation (third-party matching vs. spon- taneous attraction), and other features (e.g., formality of mentor– prote´ge´ interaction, frequency and intensity of interaction; Ragins

& Cotton, 1999; Sipe, 2005). Therefore, in addition to exerting a main effect on mentoring received, relationship formality may influence the extent that various antecedents are associated with perceptions of mentoring. For instance, due to the shorter duration and more instrumental focus, relational attributes such as similarity may be less consistently related to mentoring in formally arranged relationships. Relationship formality may also affect the extent that mentoring is associated with prote´ge´ outcomes. As an example, the association between psychosocial mentoring and prote´ge´ outcomes may be stronger in informal relationships due to their longer duration and greater emphasis on whole-person development.

In addition to being a predictor of mentoring received, gender may moderate the relationship between mentoring and various

antecedents, correlates, and consequences. The moderating role of gender is most frequently discussed in terms of how the relation- ship between mentoring support and prote´ge´ outcomes may be especially strong for women (W. B. Johnson & Huwe, 2003; O’Neill, Horton, & Crosby, 1999; Ragins, 1997b). However, the moderating role of gender may operate in other ways as well. For instance, relationship attributes such as similarity may be more predictive of relationship quality for women than for men due to women’s greater desire for relational connectedness (Canary & Dindia, 1998), or performance may be more highly related to psychosocial support for female prote´ge´s than for males due to the affirming and confidence-building aspects of psychosocial sup- port.

Mentor gender may also be a moderator. For example, due to greater social power, the instrumental support provided by male mentors may translate into greater career-related gains for prote´ge´s (Ragins & Sundstrom, 1989). Conversely, psychosocial support behaviors such as encouragement and acceptance are more in line with traditional gender-role expectations for women (Eagly & Karu, 2002). Therefore, it is frequently presumed that psychosocial support provided by female mentors is associated with greater prote´ge´ benefits since it may be more readily accepted by prote´ge´s. Finally, for both mentor and prote´ge´, gender may also influence the reasons for entering into a mentoring relationship, which may have implications for the extent that mentoring received is related to various correlates and consequences (McKeen & Bujaki, 2007). **An expanded perspective on outcomes.** Given the modest effect sizes for mentoring outcomes as well as the heterogeneity associated with many of these observed relationships, we also recommend research on the potential problems that can arise in mentoring relationships. Like other types of close relationships, mentoring is likely to be marked by both relational ups and downs. In fact, a growing body of scholarship on negative mentoring experiences highlights various problems that prote´ge´s report with mentors and vice versa (for a review, see Eby, 2007). Although there was insufficient primary research to examine relational prob- lems in relation to mentoring received, we echo J. T. Wood and Duck’s (1995) concern that examining only the positive aspects of close relationships provides an incomplete and distorted perspec- tive. A particularly important avenue for future research involves exploring the interplay between positive and negative aspects of

mentoring and the unique predictors and outcomes of each. Another way we recommend expanding outcomes is by honing

in on gaps in the literature that were uncovered in the present review. We were particularly surprised to see so few primary studies examining the career-related outcomes of prote´ge´ percep- tions of mentoring in academic settings. Outcomes such as per- ceptions of career success and indicators of employment quality (e.g., compensation, career prospects) are highly relevant to men- toring experiences in college and university settings. Moreover, mentoring has been studied in relation to academic outcomes such as grade point average, professional skill development, network- ing, and scholarly productivity (for a review, see W. B. Johnson,

2007), all of which are likely to have downstream effects on prote´ge´s’ careers. Likewise, although the effects are arguably more distal, research on youth mentoring could benefit from examining career-related outcomes to identify the long-term positive benefits of mentoring for youth. Another surprising omission is the lack of research examining turnover intentions among academic and youth

mentoring. For both of these types of mentoring, it seems reason- able to propose that greater mentoring support might reduce in- tentions to drop out of school or drop challenging academic classes.

**Additional research on relationship quality.** Relative to perceived instrumental and psychosocial support, fewer studies (*n*  20) have examined prote´ge´ perceptions of relationship qual- ity. This represents an important avenue for future research for several reasons. First, affective reactions and experiences are cen- tral to relationships; they give meaning and purpose to our lives, make us feel validated and valued (Kahn, 2007). Relationships can also generate positive emotions and influence one’s sense of identity (Roberts, 2007). Second, we found that the pattern of associations with other variables differs some depending on whether prote´ge´s are reporting on perceived instrumental support, psychosocial support, or relationship quality. Therefore, examin- ing relationship quality is not simply replicative of research fo- cusing on perceptions of psychosocial or instrumental support; it likely taps into a related yet distinct aspect of the relational experience. Finally, both the youth (Rhodes, 2002, 2005) and workplace literatures have discussed the importance of high- quality connections in understanding what makes a mentoring relationship effective. We urge researchers to begin dismantling the construct of relationship quality and to examine the specific relational processes (e.g., empowerment, authenticity, trust) that define this experience. Furthermore, high-quality relationships are likely to have positive gains for not just the prote´ge´ but also the mentor (Ragins, 2010). Therefore, an important avenue for future research involves examining specific aspects of relationship qual- ity from both the prote´ge´ and mentor perspectives. This will allow us to explore common as well as unique antecedents and outcomes.

**Practical Implications**

A practically important finding is that relatively superficial variables, such as overall surface-level similarity, show little rela- tionship with any of the three aspects of mentoring, while the more psychologically substantive variable of deep-level similarity dem- onstrates some of the strongest effects with all three aspects of mentoring. This is promising in terms of efforts to use mentoring to affect social change in institutions where mentors are likely to be majority group members and prote´ge´s may be minorities. For example, formal university mentoring sometimes targets women and minority undergraduates because they often have greater dif- ficulty adjusting to college than do White males (Campbell, 2007) and both groups may face barriers to obtaining a mentor (Black- well, 1989; Kalbfleisch & Davies, 1991). If mentors and prote´ge´s who are different in terms of race and/or gender can identify commonalities in values, beliefs, personality, and other deep-level characteristics, our findings suggest that these relationships may turn out to be perceived as highly satisfying and supportive by prote´ge´s.

Notwithstanding the findings associated with race and gen- der, several interpretive caveats are in order regarding diversity. With regard to racial diversity in particular, post hoc analysis revealed that youth mentoring studies are more likely to involve diverse samples than are academic or workplace samples, per- haps due to the strong emphasis on targeting high-risk youth for mentoring. For example, while 50% of the youth mentoring

samples contained some racial diversity among both prote´ge´s and mentors, only 28% of academic and 13% of workplace studies had any racial diversity among both prote´ge´ s and men- tors. In terms of the number of diverse prote´ge´ s included in the total data set of 40,737 prote´ge´ s, 21% of the total sample represents prote´ge´ s of color (*n*  8,503). Of these, 4,054 prote´ge´ s are from youth mentoring studies, 2,382 are from academic mentoring studies, 1,821 are from workplace mentor- ing studies, and 246 are from other studies (e.g., combination of academic and workplace). This indicates that although there is some heterogeneity in the racial composition of the samples that comprised the current review, additional research is needed on the experiences of non-White prote´ge´ s, particularly in the area of academic and workplace mentoring.

Our findings regarding the correlates and consequences of men- toring also provide an important reference point for understanding the potential gains and limits of mentoring relationships. The popular press often makes sweeping claims about the benefits of mentoring, at times referring to mentors as making or breaking an individual’s academic, career, or even life success (e.g., Hansen,

2010; McKay, 2010). However, the modest effect sizes associated with mentoring correlates and consequences demonstrate that for the typical prote´ge´, the benefits of mentoring are likely to be more limited in both scope and magnitude. This is an important finding because having unrealistically high expectations about the benefits of mentoring can lead to disappointments and failed relationships, and perhaps even undermine mentor or prote´ge´ confidence if such expectations are not realized (Eby & Lockwood, 2005).

In terms of gaining the most from mentoring relationships, the consistent finding that interaction frequency is associated with all three aspects of mentoring highlights the likely importance of regular contact between mentor and prote´ge´. The consistent asso- ciation between all three aspects of mentoring and both situational satisfaction and sense of affiliation suggests that mentoring may be a strategy to build loyalty and solidarity in community, university, and organizational settings. This may be particularly important for minority group members who may be more likely to feel alienated from these larger social institutions (Jacobi, 1991; Karcher et al.,

2002).

Our results also provide some guidance on the structure of formal mentoring programs. Because deep-level similarity was a strong predictor of all three aspects of mentoring, there may be some utility in matching mentors and prote´ge´ s on character- istics that will foster perceptions of similarity. This might include previous life experiences, values, personality, or inter- ests. Similarity perceptions may also be increased through opportunities to socialize prior to matching or the use of ice- breaker activities in training programs. To increase the likeli- hood that prote´ge´ s perceive greater instrumental support, it may also be useful to consider matching on characteristics such as functional area, education level, and geographic proximity. This type of matching may help ensure that the skills and learning provided by the mentor are relevant and valued by the prote´ge´. In terms of program design, providing opportunities for mentors and prote´ge´ s to interact with one another may increase prote´ge´ perceptions of instrumental and psychosocial support, as well as positively influence relationship quality. However, given the correlational nature of the data, it may also be that when prote´ge´ s perceive more support and have more positive evalu-

ations about the mentor or relationship, it leads to more frequent interactions with the mentor.

**Conclusion**

During the past several decades, interest in the topic of mentor- ing has flourished as research and practice have highlighted the many positive benefits associated with these relationships across a variety of contexts (T. D. Allen & Eby, 2007). The current re- search represents an integrative, interdisciplinary meta-analysis of the mentoring literature. Increasing our understanding of the an- tecedents, correlates, and consequences associated with various aspects of mentoring across the life span has important implica- tions for individuals, institutions, communities, and society. By highlighting what we know and what areas are most in need of further research, we hope the current study will serve as a spring- board for the future research and theory development on mentoring relationships.

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