

The state of mentoring research: A qualitative review of current research methods and future research implications

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Abstract

Research regarding mentoring relationships has flourished during the past 20 years. This article reviews the methodology and content of 200 published mentoring articles. Some of the major concerns raised in this review include over reliance on cross-sectional designs and self-report data, a failure to differentiate between different forms of mentoring (e.g., formal versus informal), and a lack of experimental research. Implications and suggestions for future research are offered.

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1. Introduction

In the last two decades there has been a tremendous surge in interest and research on the topic of mentoring. Dozens of studies have documented the numerous advantages of mentoring for the organization, the mentor and the protégé (e.g., Allen, Eby, Poteet,

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Lentz, & Lima, 2004; Allen & O'Brien, 2006; Kram, 1985; Scandura, 1992). Although a substantial body of research has accumulated, as an area of scientific inquiry, workplace mentoring is a relatively new focus of study. As noted by Reichers and Schneider (1990) in their stage model describing the pattern by which new concepts are advanced, critical review and summarization of existing literature plays a key role in the evolution of concepts. Only recently have such qualitative (Noe, Greenberger, & Wang, 2002; Ragins, 1999a; Wanberg, Welsh, & Hezlett, 2003) and quantitative (Allen et al., 2004) reviews of the mentoring literature appeared.

In addition to summarizing content knowledge concerning what we know about mentoring such as protégé career outcomes (Allen et al., 2004) or the role of gender in mentoring relationships (Ragins, 1999a), existing reviews have been critical of various methodological issues associated with mentoring research. For instance, a methodological review of diversity and mentoring relationships underscored several research and design considerations (Ragins, 1999b). Some of the major concerns raised included over-reliance on cross-sectional designs and self-report data, a failure to differentiate between different forms of mentoring (e.g., formal versus informal), lack of dyadic data, and the use of psychometrically questionable measures. Given the frequency with which methodological concerns are highlighted by mentoring scholars, a systematic methodological review of the mentoring literature seems warranted.

A body of research is often judged in terms of the methodology utilized. Thus, it is important to review the methods that have been employed in order for an area of research to progress rather than stagnate (Casper, Eby, Bordeaux, Lockwood, & Burnett, 2007; Scandura & Williams, 2000). A focus on methodology within the mentoring literature is critical at this point because methodological choices influence both the breadth and depth of what we know about these important organizational relationships. For example, mentoring relationships progress through distinct stages over time marked by unique issues and challenges (Kram, 1985). As such, longitudinal research strategies are essential to fully appreciate the dynamic nature of mentoring. Mentoring relationships are also inherently dyadic and the failure to consider both partners' perspective greatly limits our understanding of mentoring (Eby, Rhodes, & Allen, 2007). Unambiguously defining and operationalizing mentoring is also vital given the differences that have been found between formal and informal mentorships (cf. Wanberg et al., 2003). Finally, as with any area of research, the failure to use content and construct valid measures leads to serious threats validity and interpretive problems (Cook & Campbell, 1979).

To help facilitate the progressive theoretical development of the construct of mentoring, a comprehensive review of the organizational mentoring literature was conducted. Although methodology is the primary focus of our review we also examine some substantive issues, such as how frequently various content domains have been examined and the types of mentoring relationships studied by researchers. The present review proceeded with two specific objectives in mind. First, we wanted to summarize the current state of mentoring research and pinpoint the most pressing methodological concerns given the nature of the mentoring construct. This will allow us to make methodological recommendations that will extend our understanding of organizational mentoring. Second, the methodological features of existing mentoring research are juxtaposed against the findings from several reviews of organizational and management research in general (Aldag & Stearns, 1988; Scandura & Williams, 2000; Schriesheim, Powers, Scandura, Gardiner, & Lankau, 1993; Stone-Romero, Weaver, & Glenar, 1995) and the work-family literature

in particular (Casper et al., 2007). This provides a frame-of-reference for evaluating the state of mentoring research. Accomplishing these two objectives will help advance mentoring scholarship in important new directions.

2. Methods

2.1. Literature search and inclusion criteria

We used several methods to identify articles. First, we conducted a computerized search of PsychINFO and ABI using the terms mentor, mentoring, protégé, and mentorship. Recent reviews of the mentoring literature were also used as a source (Allen et al., 2004; Noe et al., 2002; Wanberg et al., 2003). Manual searches of journals that commonly publish articles on workplace mentoring (e.g., Journal of Vocational Behavior) were also conducted. Articles published through 2006 were included in the present review.

Our review was intended to focus on the literature concerning workplace mentoring relationships. Studies conducted on youth or student–faculty mentoring relationships published in non I/O-HR-OB journals were not included (e.g., Journal of College Student Development). However, we did include studies published in I/O-HR-OB related journals that used student–faculty samples, but were clearly intended to make links to workplace mentoring (e.g., Green & Bauer, 1995; Turban, Dougherty, & Lee, 2002). A total of 200 published articles were identified for inclusion. Due to space limitations, these articles are not included in the reference list, but can be obtained from the first author. Of those, 5 contained multiple studies. Thus there were a total of 207 individual research studies included in the analyses. A total of 60 different journals had published at least one article on mentoring. Table 1 shows journals in which five or more articles were published. By far the leading journal in publishing workplace mentoring research is *Journal of Vocational Behavior*.

2.2. Overview of the content analysis and coding process

Two researchers independently coded every article. Initial agreement across the two coders was 93%. Discrepancies were discussed and consultation was made with a third

Table 1
Journals publishing five or more mentoring articles

Journal title	Number of articles ^a	Percentage (%) ^b
Journal of Vocational Behavior	50	25.0
Career Development International	12	6.0
Journal of Organizational Behavior	12	6.0
Academy of Management Journal	11	5.5
Group and Organization Management	10	5.0
Journal of Applied Psychology	6	3.0
Journal of Career Development	6	3.0
Personnel Psychology	6	3.0
Psychological Reports	5	2.5

^a $n = 118$. Remaining 82 articles published in other journals.

^b Percentage reflects overall publication base rate by journal based on $N = 200$.

researcher as needed throughout the coding process. Our coding scheme was based on several previous methodological literature reviews (e.g., Bubholtz, Miller, & Williams, 1999; Casper et al., 2007; Lowe & Gardner, 2001; Scandura & Williams, 2000). In developing the coding scheme we focused on study characteristics that are indicative of methodological rigor as well as study characteristics that help us understand the state of mentoring scholarship from a general content perspective. The specific study features coded are discussed below.

2.2.1. Research designs

Several aspects of the research design were coded. *Research setting* was coded as laboratory or field. *Research approach* was coded as quantitative-correlational, quantitative-experimental or quasi-experimental, qualitative, or combined (qualitative and quantitative). Although research conducted in lab settings is often associated with an experimental approach while research conducted in the field is associated with a correlational approach, these pairings do not always hold. *Time horizon* was coded as cross-sectional or longitudinal. The use of a laboratory setting, experimental design, and longitudinal time horizon for data collection indicate strong internal validity (Cook & Campbell, 1979). Research approach is also important to consider because qualitative and quantitative approaches have unique strengths and weaknesses (Aluko, 2006) and to fully appreciate a complex phenomenon like organizational mentoring the use of varied research approaches is recommended. These categorizations were mutually exclusive.

2.2.2. Sources of data and focus of inquiry

Data collection method was coded as survey/questionnaire, focus group, interview, observation, case study, diary, archival, or other. The use of *multiple data collection methods* and *multiple sources of data* (data not all self-reported) were both coded (yes/no). As discussed with the research approach, the use of a variety of data collection methods *across* studies, as well as the use of multiple data collection methods *within* a study, should increase our understanding of mentoring because different methods are appropriate for different types of research questions. For example, surveys/questionnaires are excellent for identifying the prevalence of phenomena and precisely measuring specific variables (Lee, Mitchell, & Sablinski, 1999) whereas focus groups, interviews, case studies, and observation are well-suited for gaining an in-depth understanding of phenomena from the participant's perspective (Lee et al., 1999; Van Maanen, 1979). In addition, the use of multiple sources of data helps combat concerns over mono-method bias and improves construct validity through triangulation (Jick, 1979). *Focus of inquiry* was coded as protégé, mentor, dyad, or organization. The focus of inquiry is particularly germane to mentoring research because both mentor and protégé are affected by the relationship (Kram, 1985) and the mentoring dyad exists within a larger social aggregate (e.g., work group, business unit, organization) (Allen & Eby, 2007). These categorizations were not mutually exclusive.

2.2.3. Measurement of mentoring

While some studies compare those with and without mentoring experience, it is widely recognized that protégés can receive two distinct types of support from their mentors: career-related and psychosocial (Kram, 1985; Noe, 1988; Ragins & McFarlin, 1990).

As such, we coded whether or not measures of *psychosocial mentoring* and *career mentoring* were included in each study. For studies that measured career and/or psychosocial support, we recorded the number of times an established measure was used. We also coded for study-developed (single-use) measures as well as measures that were modified by combining different scales. Taking note of this is important because scale modifications can influence both the reliability and validity of a measure (Schriesheim et al., 1992). These categorizations were mutually exclusive.

2.2.4. Research content domain

To ascertain the state of mentoring research in terms of how much we know about various aspects of mentoring, we coded for the general *research content domain*. The following six nonexclusive categories were used:

1. *Outcome research*: Articles were coded into this grouping when the direct effects of mentoring were reported (e.g., research focusing on the benefits of mentoring).
2. *Predictor research*: Articles were coded into this category when factors thought to precede or predict mentoring were reported (e.g., research focusing on personality variables that predict willingness to mentor others).
3. *Both predictor and outcomes examined*: Articles in which when both antecedents and consequences of mentoring behavior were studied (e.g., research that examined protégé gender, mentoring provided, and mentoring career benefits).
4. *Measurement/construct development*: Research in which the primary purpose was to develop and test measures or typologies of key mentoring constructs such as mentoring functions.
5. *Research review*: Articles for which the primary purpose was to summarize research related to a specific content area of mentoring (e.g., a qualitative review of gender and mentoring).
6. *Theory development*: Articles in which the author(s)' primary purpose was to present a specific theory or conceptual model of mentoring were included in this group [e.g., the development of Ragins's (1997) diversified mentoring theory].

2.2.5. Type of mentorship studied

It is also important to examine the extent that existing research focuses on various types of mentoring relationships since relationship duration, structure, and processes may vary considerably across different types of mentorships (Eby et al., 2007; Ragins & Cotton, 1999). Therefore, the type of mentoring relationship studied was coded as all traditional (informal), all formal-company sponsored, all supervisor-subordinate, all faculty–student, mixed (e.g., both formal and informal included), and non-specified.

2.2.6. Country of origin

Culture is important to consider when examining close relationships because relationship expectations and acceptable patterns of interaction vary considerably across cultures (e.g., Gaines, Gurung, Lin, & Pouli, 2006). This may be particularly evident in hierarchical relationships such as mentoring. Accordingly we coded for the country from which data were obtained to determine the extent that state of knowledge about mentoring relationships is primarily U.S. based.

3. Results and discussion

Choices with regard to research settings, research designs, and analyses have critical implications for the accumulation of knowledge regarding an area of research (Scandura & Williams, 2000), as do the substantive questions that are the focus of study. Our review supports many of the criticisms leveled against mentoring research. It also identifies substantive areas of mentoring scholarship that are well-studied and topical areas that deserve greater attention. In the sections that follow we discuss the specific findings of our review and offer suggestions to move mentoring scholarship forward.

3.1. Research designs

Research design results are summarized in Table 2. Of the 207 studies coded, 178 were empirical, with the vast majority being exclusively quantitative (89.9%). As such, an important question is whether mentoring scholarship could benefit from more qualitative research. Given the changing nature of organizational careers and the current state of mentoring research, we believe that the answer is a resounding “yes.” The linear, stable and hierarchical careers that were commonplace in the 1980s when Kram’s initial qualitative research on mentoring was conducted have been replaced with careers that take more varied forms and are marked by greater instability and inter-organizational mobility (Arthur & Rousseau, 1996). The boundaryless and protean careers of today emphasize new career skills and psychological ways of viewing one’s career (Arthur & Rousseau, 1996; Briscoe & Hall, 2006). This suggests that the types of assistance that mentors provide to protégés, and the venues within which this assistance is provided, may differ today from 20 years ago (Eby, 1997). With an emphasis on in-depth description and careful appreciation of the context (Locke & Golden-Biddle, 2002; Van Maanen, 1979), qualitative research on mentoring has substantial utility in helping us understand the role of mentoring and contemporary careers.

Table 2
Research design features

Category	Frequency	Percentage
<i>Research approach (n = 178)</i>		
Quantitative		
Correlational	149	83.7
Experiment/Quasi-Experiment	9	5.1
Meta-analysis	2	1.1
Qualitative or combined		
Qualitative	8	4.5
Quantitative & qualitative	10	5.6
<i>Setting (n = 176)^a</i>		
Field	169	96.0
Lab	7	4.0
<i>Time horizon (n = 176)^a</i>		
Cross-sectional	160	90.9
Longitudinal	16	9.1

^a Excludes meta-analyses.

In terms of research setting, 96.0% of the studies examined mentoring in a field setting and in terms of design, 5.1% used an experimental design. The high base rate of field research is not surprising because mentoring is an interpersonal relationship that is arguably best understood from the perspective of adults working in organizational settings. Further, conducting experimental research in organizational settings is difficult and time consuming. However, by not using controlled settings and experimental designs it is impossible to establish cause-and-effect relationships among key constructs (Cook & Campbell, 1979), which is an essential step in theory testing (Bacharach, 1989). It is also important to underscore that mentoring represents a basic social process that could seemingly benefit from careful study in a highly controlled environment. In fact, research on other types of close relationships such as friendship and romance routinely use laboratory settings to uncover basic relational processes such as interpersonal attraction (e.g., Montoya & Horton, 2004) and relational commitment (e.g., Gonzaga, Keltner, Londahl, & Smith, 2001). Laboratory research on mentoring would allow us to develop and test theories related to topics such as the attraction process between mentors and protégés, the exchange of tangible and intangible resources within the mentoring dyad, and the development of relational processes such as trust and disclosure in mentorships. For example, several mentoring studies have successfully used laboratory experiments to examine mentor-protégé attraction (Allen, 2004; Olian, Carroll, Giannantonio, & Feren, 1988). One example for future research would be to manipulate factors such as the race and gender of mentors and provide controlled stimuli regarding mentoring behaviors exchanged during the course of the mentorship. This would permit an objective evaluation of whether or not the same mentoring behaviors provided by a female/minority are viewed similarly to those provided by a male/nonminority.

The near absence of laboratory research on mentoring may be a reflection of the values of journal reviewers and editors, as well as researchers. Studies conducted under highly controlled laboratory conditions often generate concerns regarding whether or not “real mentoring” is being studied. In response to this criticism we are reminded of Mook’s (1983) discussion of the merits of “external invalidity” (p. 379), in which he eloquently discusses the flawed logic underlying the frequent dismissal of laboratory research on the grounds that it is artificial and lacks generalizability. Experimental research is not *intended* to be generalizable across people, time, and settings. Rather, it is used to test the validity of specific theoretical propositions that may (or may not) have utility in understanding some comparable phenomena in the field. Because testing core theoretical propositions is the building block of theory (Bacharach, 1989), we strongly recommend greater consideration of laboratory-based experimental research in journals that routinely publish organizational research on mentoring.

In terms of time horizon, of the 176 studies in which data were collected (i.e., excluding the two meta-analyses) 90.9% used a cross-sectional design. The limited examination of mentoring relationships using longitudinal designs places a theoretical constraint on our understanding of mentoring. Mentoring research has grown and become a major topic of interest primarily based on the belief that it *leads to* beneficial outcomes such as career growth and favorable job attitudes. Yet for the most part, researchers have not made a convincing case that this reflects a causal relationship. In fact, some have argued that protégés are singled out for mentoring because they demonstrate positive work attitudes or high performance potential (Ragins & Cotton, 1993). In one notable longitudinal study conducted with student–faculty mentors in a doctoral program, Green and Bauer (1995)

found that greater use of mentoring in the student's first year did *not* contribute to student performance and commitment at the end of year two after controlling for student attitudes, experience, and ability as measured at program entry. These findings underscore the possibility that other factors such as protégé characteristics may underlie the link between mentoring and positive outcomes. However, it is uncertain how these results generalize to workplace mentorships or the extent that a one-year time lag is long enough for mentoring to have a positive effect.

Another example is that cross-sectional studies have examined willingness or intent to mentor others and related it to factors such as previous mentoring experience and altruism (e.g., Allen, 2003; Allen, Poteet, Russell, & Dobbins, 1997; Arthur & Rousseau, 1996; Aryee, Chay, & Chew, 1996; Ragins & Cotton, 1993), but no longitudinal studies have been conducted to reveal the temporal precedence of any variables and actual mentoring behavior by mentors. As a final example, we have a limited understanding of relationship phases in mentoring. Kram's (1985) seminal work on mentoring discusses the time-bound nature of mentoring and the unique relational dynamics associated with the phases of initiation, cultivation, separation, and redefinition. To date there has been no independent examination of mentoring phases using longitudinal designs. Moreover, no longitudinal research exists on the phases associated with formal mentorships even though the overall length of time associated with Kram's mentoring phases is considerably longer than the duration of most formal mentorships. In summary, longitudinal research is sorely needed to examine these and other taken-for-granted assumptions about organizational mentoring. This should include long-term studies that track mentor and protégé characteristics, as well as both formal and informal relationships, at multiple time points from initiation through termination/redefinition.

3.2. Sources of data and focus of inquiry

Results concerning sources of data and focus of inquiry are reported in Table 3. Almost all of the studies used survey-based methods for data collection (94.4%). A small percentage of studies (6.3%) used multiple data collection methods. The heavy reliance on surveys raises validity concerns. Triangulation in the form of multiple methods of data collection increases construct validity because it provides a more holistic assessment of the construct under study and reduces mono-method bias (Campbell & Fiske, 1959; Jick, 1979). Triangulation is also important because all research methods have inherent weaknesses and obtaining convergent results across different methods increases the confidence that one can place in research findings (Jick, 1979; McGrath, 1982). Paper-and-pencil surveys in particular have limitations such as increased susceptibility to response sets, greater potential for misunderstanding questions, and the inability to follow-up on respondent answers. Thus, mentoring research may benefit from more varied means of data collection. As mentioned previously, this may include experimentally designed research. Studies that include a combination of field-based survey research and a parallel experimental lab study would be especially useful for addressing both internal and external validity (see for example, Allen, 2004).

We also found limited triangulation in terms of data sources. Only 18.2% of the studies included in the present review collected data from multiple sources. Moreover, the protégé was the focus of inquiry in 80.2% of the studies. The mentor was the focus in 30.9% and 27.5% of the studies focused on dyadic processes (e.g., cross-gender dynamics, mentor-protégé similarity). Only 7.2% of the studies reviewed focused on the organization.

Table 3
Data sources and focus of inquiry

Category	Frequency	Percentage ^a
<i>Data collection method (n = 178)</i>		
Survey	168	94.4
Focus group	2	1.1
Interview	14	7.9
Observation	1	<1
Case study	0	0
Diary	0	0
Archival	5	2.8
Multiple data collection methods ^b	11	6.3
Multiple sources of data ^b	32	18.2
<i>Primary focus of inquiry (n = 207)</i>		
Protégé	166	80.2
Mentor	64	30.9
Dyad (mentor and protégé interaction)	57	27.5
Organization	15	7.2

^a Percentages can add to greater than 100% because some studies used more than one data collection method or had multiple foci of analysis.

^b Based on *n* of 176 (excludes meta-analyses).

The limited use of multi-source data and heavy focus on the protégé raise several concerns. A mentoring relationship is an inherently dyadic and complex process, with the mentor and the protégé each enacting different roles and responsibilities in the relationship (Allen, 2007). Mentors and protégés also report different benefits (Eby, Durley, Evans, & Ragins, 2006; Ragins & McFarlin, 1990) as well as costs (Eby, 2007) in a mentoring relationship. This suggests that data from both perspectives is necessary to fully understand a mentoring relationship. For example, it would be informative to conduct research in which mentor personality data was self-reported and then correlated with protégé reported outcomes. This would yield some insight into mentor characteristics associated with beneficial protégé outcomes.

3.3. Research content domains

Table 4 contains the results regarding the general content areas that have been the focus of mentoring research. The most common theme is research that investigates predictors of

Table 4
General research content

	Frequency	Percentage ^a
Predictor of mentoring	66	31.9
Outcome of mentoring	60	30.0
Both predictor and outcome	45	21.7
Measurement development	8	3.9
Research review	16	7.7
Theory development	17	8.2

N = 207.

^a Percentages can add to greater than 100% because some studies had more than one content theme.

mentoring (31.9%), closely followed by outcomes associated with mentoring (30.0%) and both predictors and outcomes (21.7%). Therefore, we seem to have a balanced understanding of both the antecedents and consequences of mentoring, at least from the protégé's perspective (see Table 3). Less attention has been given to research reviews (7.7%), theory development (8.2%), and measurement development (3.9%). The field of mentoring could benefit from more concerted attempts to advance theory. This seems especially important in light of the recognition that career patterns and organizational experiences have changed dramatically in the last few decades (Briscoe & Hall, 2006). Moreover, it is important for any area of study to review past findings in an effort to appropriately guide future directions.

3.4. *Type of mentoring*

Results regarding the type of mentorships studied are provided in Table 5. We found that 39.8% of the articles reviewed did not specify the type of mentorship studied. Another 28.4% of studies included samples comprised of multiple types of mentorships. Failure to specify the type of mentoring examined poses potential interpretive problems because differences have been repeatedly found in the outcomes associated with formal and informal mentoring relationships (e.g., Chao, Walz, & Gardner, 1992; Ragins & Cotton, 1999). Likewise, studies that include both formal and informal mentoring may be “mixing apples and oranges” to some extent if fundamental aspects of the relationship differ across these two types of relationships. In future research it may be useful to clearly specify the type of mentoring under study.

3.5. *Measurement of mentoring*

Table 6 includes the results regarding the measurement of mentoring. Of the empirical studies reviewed 44.9% measured psychosocial mentoring. Of those that measured psychosocial mentoring, the most commonly used measure was that developed by Noe (1988) (29.1%), followed by Scandura (Scandura, 1992; Scandura & Ragins, 1993) (25.3%). A considerable number of researchers used study-developed measures or cited measures only recorded once (30.4%). A total of 50.6% of empirical studies reviewed included a measure of career mentoring. Again most of these studies used the Noe (24.7%) or the Scandura (24.7%) measure.

Table 5
Type of mentoring relationship studied

	Frequency	Percentage
All informal (traditional)	18	10.2
All formal—company sponsored	20	11.4
All supervisor—subordinate	10	5.7
All faculty—student	4	2.3
All formal—peer	4	2.3
Mixed	50	28.4
Not specified	70	39.8

N = 176.

Table 6
Mentoring measures used

	Frequency	Percentage
<i>Career mentoring measured</i>	89	50.6
Noe, 1988	22	24.7
Scandura (1992)/Scandura and Ragins (1993)	22	24.7
Dreher and Ash (1990)	7	7.9
Ragins & McFarlin (1990)	3	3.4
Lindholm (1985)	3	3.4
Study developed or single use	28	31.5
Combined multiple measures	4	44.9
<i>Psychosocial mentoring measured</i>	79	44.9
Noe, 1988	23	29.1
Scandura (1992)/Scandura & Kattenberg (1988)	20	25.3
Dreher and Ash (1990)	4	5.1
Lindholm (1985)	3	3.8
Ragins & McFarlin (1990)	2	2.5
Study developed or single use	24	30.4
Combined multiple measures	3	3.8

N = 176.

The practice of using study-developed measures of mentoring raises concerns. Construct validity is questionable when measures are used with limited psychometric support. Our review also reveals a paucity of research focusing on measurement within the mentoring literature. Indeed, as shown in Table 4 only eight of the 207 studies reviewed focused on measurement development. Perhaps more importantly, the mainstay measures of mentoring support are based on Kram's (1985) taxonomy of mentoring functions. As mentioned previously, it seems important to re-examine the mentoring functions identified by Kram over 20 years ago to verify that they are as applicable today as they were in the early 1980s. It should also be noted that the most commonly used measures of mentoring (i.e., Noe, 1988; Scandura, 1992) have not been tested for equivalence with mentor samples, despite commonly being used for *mentor reports* of mentoring provided (e.g., Allen & Eby, 2004). This is important in that mentor and protégé reports of career and psychosocial support tend to be only modestly correlated (e.g., Allen, Eby, & Lentz, 2006). We are also aware of no research on cross-cultural measurement equivalence, even though Kram's conceptualization of mentoring has been applied to other cultural contexts (e.g., Bozionelos, 2006). For mentoring research to advance, it seems critical that more effort be directed toward examining measurement issues in mentoring research. For example, in a recent study, Pellegrini and Scandura (2005) found that the Mentoring Functions Questionnaire (MFQ-9) demonstrated excellent psychometric properties among unsatisfied protégés, but not among satisfied protégés.

3.6. Country of origin

The results regarding sample country of origin are presented in Table 7. As shown, the vast majority of research has been based on samples from the United States. Globalization is affecting all aspects of work within organizations. Mentoring relationships are likely no exception. However, little is known regarding the generalizability of research findings

Table 7
Country of sample origin

	Frequency	Percentage
United States	130	73.9
Canada	6	3.4
England	4	2.3
Australia	4	2.3
Hong Kong	2	1.1
Ireland	2	1.1
Belgium	1	<1
Singapore	1	<1
Nigeria	1	<1
Greece	1	<1
China	1	<1
Multiple countries	2	1.1
Uncertain	21	11.9

$N = 176$.

regarding workplace mentoring across nonwestern cultures. Our review shows that only a handful of studies have been conducted with non-North American samples. Are there different perceptions of mentoring relationships in other cultures? Do mentoring relationships take on the same developmental importance in nonwestern cultures as has been found in U.S. research? How well do the widely accepted functions of mentoring identified by Kram (1985) apply to other cultures? Even within the U.S., little is generally known regarding cross-ethnic mentoring relationships. Cultural values such as collectivism/individualism have significant effects on social relationships (Chen, Brockner, & Chen, 2002). For example, research suggests that Asians may be less likely to seek help from relationships outside of the family compared to Americans (Zhang, Snowden, & Sue, 1998). It seems likely that such differences may dramatically influence norms and expectations regarding mentorships in the workplace.

3.7. Mentoring research in comparison to other research areas

Another way to view the results of the present review is to compare our findings to other methodological reviews of the literature. Several reviews of organizational and management research exist. Some are selective in terms of the content domain covered (e.g., Casper et al., 2007 focused exclusively on the work-family literature) and others in terms of the journals reviewed (e.g., Scandura & Williams, 2000 reviewed management research in general in 3 specific journals) and others in terms of type of research (Eby, McCleese, & Butts, *in press*; focus on qualitative research). It should also be noted that existing methodological reviews examined some, but not necessarily all, of the methodological features discussed in the present review. Nonetheless, in the following paragraphs we examine the methodological features of mentoring research against other areas of scholarship.

Mentoring research was similar to other areas of research on several counts. Juxtaposed against research in applied psychology, management, and social psychology (Eby et al., *in press*) as well as work-family (Casper et al., 2007), mentoring research is characterized by slightly greater use of qualitative (1% and 1% versus 4.5%, respectively) and combined (qualitative and quantitative) (2% and 1% versus 5.6%, respectively) research approaches.

Qualitative research has many merits, including greater ecological validity and rich, descriptive accounts of real world phenomena (Lee et al., 1999; Van Maanen, 1979). In other respects, mentoring research is based on a more limited methodological repertoire. We found that mentoring research (9.1%) was less likely to utilize longitudinal designs than was organizational and management research (29% in Aldag & Stearns, 1988; 14.4–22.6% in Scandura & Williams, 2000). However, this may be changing as nine studies that used a longitudinal design were published in 2005–2006. Mentoring research was also less likely to use experimental/quasi-experimental designs (5.1%) compared to all articles published in the *Journal of Applied Psychology* between 1975 and 1993 (32–49% in Stone-Romero et al., 1995) as well as organizational and management research (32% in Aldag & Stearns, 1988; 7–15% in Scandura & Williams, 2000). The mentoring studies that we reviewed were also less likely to use multiple methods (6.3%) or multiple sources (18.2%) compared to either work-family (23% and 24%, respectively, Casper et al., 2007) or organizational and management (19% for multiple methods, Aldag & Stearns, 1988 and between 11.1–26.3% for multiple people, Scandura & Williams, 2000) research. Again, this appears to be changing though as 11 studies incorporating multiple data sources were published in 2005–2006.

In conclusion, our findings suggest that we can characterize mentoring research as primarily adopting quantitative, correlational, cross-sectional research designs in field settings where data are collected from a single source (typically the protégé) using a single method of data collection. This seemingly paints a bleak picture of the current methodological state of mentoring research. However, we emphasize that this may simply reflect an area of research that is still at a relatively early stage of development. Initial studies within a research area may justifiably focus on establishing relationships among variables through the use of expedient and low cost research methodologies before proceeding to more costly, time-consuming, and complex studies. However, in order to ensure the advancement of this field of study, the time has clearly come to make such investments. As demonstrated by the recent increase in longitudinal and multisource studies, more complex research appears to be beginning to emerge. We hope the results of the current review help to continue to inspire continuing efforts along these lines.

References

- Aldag, R. J., & Stearns, T. M. (1988). Issues in research methodology. *Journal of Management*, *14*, 253–276.
- Allen, T. D. (2007). Mentoring relationships from the perspective of the mentor. In B. R. Ragins & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research and practice* (pp. 123–147). Thousand Oaks, CA: Sage Publication.
- Allen, T. D. (2003). Mentoring others: A dispositional and motivational approach. *Journal of Vocational Behavior*, *62*, 134–154.
- Allen, T. D. (2004). Protégé selection by mentors: Contributing individual and organizational factors. *Journal of Vocational Behavior*, *65*, 469–483.
- Allen, T. D., & Eby, L. T. (2004). Factors related to mentor reports of mentoring functions provided: Gender and relational characteristics. *Sex Roles*, *50*, 129–139.
- Allen, T. D., & Eby, L. T. (2007). Common bonds: An integrative view of mentoring relationships. In T. D. Allen & L. T. Eby (Eds.), *Blackwell handbook of mentoring: A multiple perspectives approach* (pp. 398–419). Oxford: Blackwell.
- Allen, T. D., Eby, L. T., & Lentz, E. (2006). Mentorship behaviors and mentorship quality associated with formal mentoring programs: Closing the gap between research and practice. *Journal of Applied Psychology*, *91*, 567–578.

- Allen, T. D., Eby, L. T., Poteet, M. L., Lentz, E., & Lima, L. (2004). Career benefits associated with mentoring for protégés: A meta-analytic review. *Journal of Applied Psychology, 89*, 127–136.
- Allen, T. D., & O'Brien, K. (2006). Formal mentoring programs and organizational attraction. *Human Resource Development Quarterly, 17*, 43–58.
- Allen, T. D., Poteet, M. L., Russell, J. E. A., & Dobbins, G. H. (1997). A field study of factors related to supervisors' willingness to mentor others. *Journal of Vocational Behavior, 50*, 1–22.
- Aluko, F. S. (2006). Social science research: A critique of quantitative and qualitative methods and proposal for eclectic approach. *IFE Psychologia, 14*, 198–210.
- Arthur, M. B., & Rousseau, D. M. (1996). *The boundaryless career: A new employment principle for a new organizational era* (pp. 237–255). New York: Oxford University Press.
- Aryee, S., Chay, Y. W., & Chew, J. (1996). The motivation to mentor among managerial employees in the maintenance career stage: An interactionist perspective. *Group and Organization Management, 21*, 261–277.
- Bacharach, S. (1989). Organizational theories: Some criteria for evaluation. *Academy of Management Review, 14*, 496–516.
- Bozionelos, N. (2006). Mentoring and expressive network resources: Their relationship with career success and emotional exhaustion among Hellenes employees involved in emotion work. *International Journal of Human Resource Management, 17*, 362–378.
- Briscoe, J. P., & Hall, D. T. (2006). The interplay of boundaryless and protean careers: Combinations and implications. *Journal of Vocational Behavior, 69*, 4–18.
- Bubholtz, W. C., Jr., Miller, M., & Williams, D. J. (1999). Content analysis of research in the Journal of Counseling Psychology (1973–1998). *Journal of Counseling Psychology, 46*, 496–503.
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56*, 81–105.
- Casper, W. J., Eby, E. T., Bordeaux, C., Lockwood, A., & Burnett, D. (2007). A review of research methods in IO/OB work-family research. *Journal of Applied Psychology, 92*, 28–43.
- Chen, Y. R., Brockner, J., & Chen, X. P. (2002). Individual-collective primacy and ingroup favoritism: Enhancement and protection effects. *Journal of Experimental Social Psychology, 38*(5), 482–491.
- Cook, D. T., & Campbell, D. T. (1979). *Quasi-experimental designs: Design and analysis issues for field settings*. Skokie, IL: Rand McNally.
- Eby, L. T. (1997). Alternative forms of mentoring in changing organizational environments: A conceptual extension of the mentoring literature. *Journal of Vocational Behavior, 51*, 125–144.
- Eby, L. T. (2007). Understanding problems in mentoring: A review and proposed investment model. In B. R. Ragins & K. E. Kram (Eds.), *The handbook of mentoring at work: Theory, research and practice* (pp. 323–344). Thousand Oaks, CA: Sage Publication.
- Eby, L. T., Durely, J., Evans, S. C., & Ragins, B. R. (2006). The relationship between short-term mentoring benefits and long-term mentor outcomes. *Journal of Vocational Behavior, 69*, 424–444.
- Eby, L. T., McCreese, C. S., & Butts, M. M. (in press). Qualitative research: The red-headed stepchild in organizational and social science research? In C. E. Lance & B. Vandenberg (Eds.). *Statistical and methodological myths and urban legends: Received doctrine, verity, and fable in the organizational and social sciences*. Mahwah, NJ: Lawrence Erlbaum.
- Eby, L. T., Rhodes, J., & Allen, T. D. (2007). Definition and evolution of mentoring. In T. D. Allen & L. T. Eby (Eds.), *Blackwell handbook of mentoring: A multiple perspectives approach* (pp. 7–20). Oxford: Blackwell.
- Gaines, S. O., Jr., Gurung, R. A. R., Lin, Y., & Pouli, N. (2006). Interethnic relationships. In J. Feeney & P. Noller (Eds.). *Close relationships: Functions, forms, and processes* (pp. 171–187). New York, NY: Psychology Press.
- Gonzaga, G. C., Keltner, D., Londahl, E. A., & Smith, M. D. (2001). Love and the commitment problem in romantic relations and friendship. *Journal of Personality and Social Psychology, 81*, 247–262.
- Green, S. G., & Bauer, T. N. (1995). Supervisory mentoring by advisers: Relationships with doctoral student potential, productivity, and commitment. *Personnel Psychology, 48*, 537–561.
- Jick, T. D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly, 24*, 602–611.
- Kram, K. E. (1985). *Mentoring at work: Developmental relationships in organizational life*. Glenview, IL: Scott Foresman.
- Lee, T. W., Mitchell, T. R., & Sablinski, C. J. (1999). Qualitative research in organizational and vocational psychology, 1979–1999. *Journal of Vocational Behavior, 55*, 161–187.

- Locke, K., & Golden-Biddle, K. (2002). An introduction to qualitative research: Its potential for industrial and organizational psychology. In S. G. Rogelberg (Ed.), *Handbook of research methods in industrial and organizational psychology* (pp. 99–118). Oxford: Blackwell.
- Lowe, K. B., & Gardner, W. L. (2001). Ten years of the leadership quarterly: Contributions and challenges for the future. *Leadership Quarterly*, *11*, 459–514.
- McGrath, J. E. (1982). Dilemmatics: The study of research choices and dilemmas. In J. E. McGrath (Ed.), *Judgment calls in research* (pp. 69–102). Beverly Hills, CA: Sage.
- Montoya, R. M., & Horton, R. S. (2004). On the importance of cognitive evaluation as a determinant of interpersonal attraction. *Journal of Personality and Social Psychology*, *86*, 696–712.
- Mook, D. G. (1983). In defense of external invalidity. *American Psychologist*, *38*, 379–387.
- Noe, R. A. (1988). An investigation of the determinants of successful assigned mentoring relationships. *Personnel Psychology*, *41*, 457–479.
- Noe, R. A., Greenberger, D. B., & Wang, S. (2002). Mentoring: A review of the literature and research agenda. In G. R. Ferris & J. J. Martocchio (Eds.), *Research in Personnel and Human Resource Management* (Vol. 21, pp. 129–173). Oxford, UK: JAI Press.
- Olian, J. D., Carroll, S. J., Giannantonio, C. M., & Feren, D. B. (1988). What do protégés look for in a mentor? Results of three experimental studies. *Journal of Vocational Behavior*, *33*, 15–37.
- Ragins, B. R. (1997). Diversified mentoring relationships in organizations: A power perspective. *Academy of Management Review*, *22*, 482–521.
- Ragins, B. R. (1999a). Gender and mentoring relationships. In G. N. Powell (Ed.), *Handbook of gender in organizations* (pp. 347–370). Thousand Oaks, CA: Sage.
- Ragins, B. R. (1999b). Where do we go from here, and how do we get there? Methodological issues in conducting research on diversity and mentoring relationships. In A. J. Murrell, F. J. Crosby, & R. J. Ely (Eds.), *Mentoring dilemmas: Developmental relationships within multicultural organizations* (pp. 227–246). Mahwah, New Jersey: Lawrence Erlbaum.
- Ragins, B. R., & Cotton, J. L. (1993). Easier said than done: Gender differences in perceived barriers to gaining a mentor. *Academy of Management Journal*, *34*, 939–951.
- Reichers, A. E., & Schneider, B. (1990). Climate and culture: An evolution of constructs. In B. Schneider (Ed.), *Organizational climate and culture*. San Francisco: Jossey-Bass.
- Scandura, T. A. (1992). Mentorship and career mobility: An empirical investigation. *Journal of Organizational Behavior*, *13*, 169–174.
- Scandura, T. A., & Ragins, B. R. (1993). The effects of sex and gender role orientation on mentorship in male-dominated occupations. *Journal of Vocational Behavior*, *43*, 251–265.
- Scandura, T. A., & Williams, E. A. (2000). Research methodology in management: Current practices, trends, and implications for future research. *Academy of Management Journal*, *43*, 1248–1264.
- Schriesheim, C. A., Powers, K. J., Scandura, T. A., Gardiner, C. C., & Lankau, M. J. (1993). Improving construct measurement in management research: Comments and a quantitative approach for assessing the theoretical content adequacy of paper-and-pencil survey-type instruments. *Journal of Management*, *19*, 385–417.
- Stone-Romero, E. F., Weaver, A. E., & Glenar, J. L. (1995). Trends in research design and data analytic strategies in organizational research. *Journal of Management*, *21*, 141–157.
- Turban, D. B., Dougherty, T. W., & Lee, F. K. (2002). Gender, race and perceived similarity effects in developmental relationships: The moderating role of relationship duration. *Journal of Vocational Behavior*, *61*, 240–262.
- Van Maanen, J. (1979). Reclaiming qualitative methods for organizational research: A preface. *Administrative Science Quarterly*, *24*, 520–526.
- Wanberg, C. R., Welsh, E. T., & Hezlett, S. A. (2003). Mentoring research: A review and dynamic process model. In G. R. Ferris & J. J. Martocchio (Eds.), *Research in Personnel and Human Resources Management* (Vol. 22, pp. 39–124). Greenwich, CT: Elsevier Science.
- Zhang, A. Y., Snowden, L. R., & Sue, S. (1998). Differences between Asian and White Americans' help seeking and utilization patterns in the Los Angeles area. *Journal of Community Psychology*, *26*(4), 317–326.