

Gender, Race, and Perceived Similarity Effects in Developmental Relationships: The Moderating Role of Relationship Duration

Daniel B. Turban, Thomas W. Dougherty, and Felissa K. Lee

University of Missouri

The authors examine the doctoral student–faculty advisor dyad as a developmental relationship and investigate how gender, race, and perceived similarity are related to doctoral student perceptions of mentoring received. They hypothesized that the relationship of similarity with mentoring received would be moderated by duration of the relationship. Specifically, they expected that gender and race dissimilarity would lead to less mentoring early in the relationship but that such effects would dissipate later in the relationship. Furthermore, the authors predicted that perceived similarity, conceptualized as underlying similarity of attitudes, values, and beliefs, would be more strongly related to outcomes for longer duration versus shorter duration dyads. They found that, in general, duration of the relationship moderated the effects of gender similarity and perceived similarity on mentoring received, although the pattern of means was more complex than originally hypothesized. © 2002 Elsevier Science (USA)

During recent years, there has been increasing interest in developmental relationships, in which a senior individual helps to develop a junior individual (Clawson & Kram, 1984). Although Thomas (1990) noted that the term *developmental relationship* is broader than a mentor–protégé relationship, most studies investigating developmental relationships have examined mentoring relationships. Mentoring received has been shown to be related to promotions, income, career satisfaction, and organizational socialization (Chao, Walz, & Gardner, 1992; Dreher & Ash, 1990; Fagenson, 1989; Scandura, 1992; Turban & Dougherty, 1994; Whitely, Dougherty, & Dreher, 1991). Similarly, in studies conducted in educational settings, mentoring was related to increased success for undergraduate students (Erkut & Mokros, 1984), graduate students (Jacobi, 1991), and junior faculty members (Hill, Bahniuk, & Dobos, 1989).

One type of developmental relationship, that between a doctoral student and a faculty advisor, has the potential for enhancing both academic and career success (Cronan-Hillix, Gensheimer, & Davidson, 1986; Giles & Endsley, 1988). Although doctoral student–faculty advisor relationships involve evaluative duties, the expectation for mentoring activity is evident (Green & Bauer, 1995).

Address correspondence and reprint requests to Daniel B. Turban, Department of Management, University of Missouri, Cornell Hall, Columbia, MO 65211. E-mail: Turban@missouri.edu.

Furthermore, studies highlight the importance of mentoring for graduate students, with evidence indicating that mentoring is related to research productivity (Jacobi, 1991) and to both emotional and career-related outcomes (Wilde & Schau, 1991). Although much has been written about the effects of cross-gender and cross-ethnic mentoring relationships (Brown, Davis, & McClendon, 1999; Clawson & Kram, 1984; Haring & Freeman, 1999; Noe, 1988; Ragins, 1989; Thomas, 1990), there is less empirical work examining such relationships (Ragins, 1997b). In addition to gender and race diversity, however, less visible forms of diversity may affect developmental relationships. Underlying personal attributes such as attitudes and values may affect individuals' interaction patterns, ultimately contributing to the success of relationships (Cesa & Fraser, 1989). In addition, evidence suggests that similarity on underlying variables such as values, influences dyadic relationships (Meglino, Ravlin, & Adkins, 1989). We theorize, however, that the effects of similarity (i.e., diversity) vary through the duration of the relationship, and thus we examine how time in relationship moderates the effects of gender, race, and perceived similarity on mentoring outcomes.

We extend previous research by examining faculty advisor–doctoral student dyads in terms of gender, race, and perceived similarity. First, we discuss mentoring, based on Kram's (1985) work on developmental relationships. Then, we draw on the social categorization process and the similarity–attraction paradigm (Byrne, 1971) to develop a framework for investigating dyad formation and outcomes. Finally, we examine the moderating influence of time in relationship development.

Mentoring Relationships

In her seminal work, Kram (1985) discussed mentoring as a type of developmental relationship in which mentors provide *career* and *psychosocial* functions to a junior colleague. Career functions enhance the likelihood of the junior colleague becoming successful and include activities such as exposure/visibility, sponsorship, coaching, protection, and challenging work assignments. Psychosocial functions enhance the junior colleague's sense of competence and identity in his or her professional role and include activities such as role modeling, acceptance and confirmation, counseling, and friendship. Kram (1983, 1985) proposed that mentoring relationships consist of four phases: initiation, cultivation, separation, and redefinition. The initiation phase lasts 6 to 12 months and involves setting expectations about the relationship. The cultivation phase typically lasts 2 to 5 years, during which protégés are provided with a wide range of career and psychosocial functions. During the separation phase, the junior colleague seeks more autonomy, and then during the redefinition phase, the dyad members begin to see each other as peers. As noted by Chao (1997), there is little empirical research examining mentoring phases, perhaps because little research has examined how mentoring relationships change over time. Nonetheless, recent studies that examined the formation of mentoring relationships may provide some insight into how gender, race, and perceived similarity influence developmental relationships as well as how such influences may vary through the duration of the relationships.

The formation of developmental relationships is thought to be influenced by each dyad member's perceptions of the other person's perceived competence, identification with the other person, and level of interpersonal comfort with the other person (Allen, Poteet, & Burroughs, 1997; Allen, Poteet, & Russell, 2000; Olian, Carroll, & Giannantonio, 1993; Olian, Carroll, Giannantonio, & Feren, 1988; Ragins, 1997a). More specifically, individuals are more likely to form developmental relationships with others with whom they identify or see as similar to themselves, in part because they feel comfortable with similar others (Allen et al., 1997; Ragins, 1997a). As noted by Ragins (1997a), both demographic and perceived similarity may influence perceptions of competence, identification, and interpersonal comfort and thus may influence relationship formation. Our underlying theoretical proposition is that gender and race similarity, which are salient demographic characteristics, influence the formation of relationships and mentoring provided early in the relationship and that perceived similarity, which provides an indication of underlying similarity, will have a stronger influence on mentoring outcomes for longer term relationships in which the individuals know one another better. We now discuss how the social categorization process may influence dyad formation and outcomes.

Social Categorization and Developmental Relationships

Research indicates that people form first impressions of others based on salient observable characteristics of the persons, such as gender and race, and categorize the persons based in part on their gender and race similarity (Brickson, 2000; Stangor, Lynch, Duan, & Glass, 1992; Tajfel & Turner, 1986; Tsui, Xin, & Egan, 1995). The social category in which we place an individual influences our perceptions of and behavior toward that person such that we *initially* react to the person based on stereotypes associated with members of the social category. In general, individuals that are similar in terms of gender and race are more socially integrated in groups (Tsui et al., 1995), although there has been less research examining the effects of gender and race similarity in dyadic relationships. Nonetheless, Ragins (1997a) suggested that individuals will have stronger identification and feel more comfortable with others who have similar demographic characteristics and who are perceived as similar. On a related note, considerable evidence indicates that individuals are attracted to others who are similar to themselves (for a discussion of the similarity–attraction paradigm, see Byrne, 1971). Such effects may occur because interactions may be easier and more comfortable with individuals who have similar beliefs and attitudes. Thus, we expect that individuals are more likely to form developmental relationships with individuals who are of the same gender and race.

Gender and race similarity. As noted, we investigated gender and race similarity because they are salient observable characteristics likely to influence both the initial categorization and the subsequent interactions of mentors and protégés. Gender similarity has been of particular interest to scholars interested in mentoring. Scholars have argued that both protégés and mentors may feel less comfortable in cross-gender relationships because of issues associated with their own and

others' perceptions of sexuality, intimacy, and harassment that can occur in these relationships (Clawson & Kram, 1984; Hurley & Fagenson-Eland, 1996; Noe, 1988). Thus, we expect doctoral students to attempt to form relationships with advisors who are of the same gender as themselves.

Few studies have investigated the effects of racial similarity on developmental relationships (Thomas, 1993). Nonetheless, minorities are more likely to work for minority supervisors than would be expected by chance (Lefkowitz, 1994; Waldman & Avolio, 1991). Based on the logic that individuals feel more comfortable with others of the same race, we expect that individuals will tend to form relationships with individuals who are of the same race.

To summarize, we expect that because of the increased identification and attraction to similar others, individuals are more likely to be in developmental relationships with others of the same gender and race. However, some evidence suggests that women and minorities are more likely to be in dissimilar developmental relationships than are White men, in part because there are more White males than women and minorities who can serve as mentors (Dreher & Cox, 1996; Ragins, 1997a; Thomas, 1990). Nonetheless, Dreher and Cox (1996) found that White male protégés were more likely to report relationships with White male mentors than were Black or Hispanic protégés and that men were more likely than women to form mentoring relationships with White men. Because Dreher and Cox examined only White male mentors, further research is needed to better understand how gender and race similarity influences developmental relationships. Furthermore, most of the previous research on demography and mentoring has focused on gender (Ragins & Cotton, 1991, 1993, 1999; Ragins & McFarlin, 1990). We extend such research and make predictions for race as well.

Hypothesis 1: Individuals will be more likely to be involved in developmental relationships with others who are of similar gender and similar race.

As discussed above, interactions are thought to be more comfortable with similar others. Therefore, we expect that protégés will receive more mentoring from mentors who are of similar gender and similar race, although as is discussed below, such effects may dissipate over time as individuals in the dyad learn more about one another. We propose the following:

Hypothesis 2: Similarity of gender and of race will be positively related to perceptions of mentoring received in faculty–student dyads.

Underlying similarity. We conceptualize perceived similarity, the extent to which one person believes that another person is similar in terms of underlying attitudes, values, and beliefs, as a deeper level similarity than gender or race similarity. Studies of supervisor–subordinate relations indicate that perceived similarity is related to subordinate satisfaction, supervisor ratings of subordinate performance, and the quality of the leader–member exchange (Liden, Wayne, & Stilwell, 1993; Turban & Jones, 1988). Scholars have suggested that perceived similarity may influence mentoring relationships (Dreher & Cox, 1996) and have called for an investigation of the effects of perceived similarity on mentoring relationships

(Whitely et al., 1991). However, we found only one study that investigated relationships of perceived similarity with mentoring. Ensher and Murphy (1997) investigated formal mentoring relationships and found that protégés' perceptions of similarity to their mentors were related to their perceptions of mentoring received and to liking of and satisfaction with the mentors. We replicate and extend such results to the academic setting.

Hypothesis 3: Perceived similarity to the faculty advisor will be positively related to student perceptions of amount of mentoring received.

Time as a Moderator

Time may also play a key role in the similarity–attraction process in that the relative importance of demographic and perceived similarity may shift as the relationship develops. Specifically, demographic similarity may influence the attraction process more early in a relationship, while underlying similarity may be more important later in the relationship. Duck's (1977) "filter" theory of friendship development and studies of group process (Glaman, Jones, & Rozelle, 1996; Harrison, Price, & Bell, 1998; Watson, Kumar, & Michaelsen, 1993) provide support for this idea.

Duck's (1977) filter theory posits that an individual attends to progressively deeper aspects of another person as a relationship develops and more personal information becomes available. People who seem similar to ourselves, thus providing support for our own self-concept and outlook, pass through the "filter" and are retained as friends. As the relationships develop over time, people move from focusing on superficial aspects to focusing on underlying, or deeper level, aspects of similarity in assessing the relationships. Therefore, a given type of similarity may be an important determinant of friendship at one point in a relationship but not at a later time in the relationship. Studies of personality similarity (Duck & Craig, 1978), values similarity (Lea & Duck, 1982), and cognitive construct similarity (Neimeyer & Neimeyer, 1983) provide support for Duck's (1977) filter model. For example, in a longitudinal study of friendship development, Neimeyer and Mitchell (1988) found that "superficial" attitude similarity predicted initial attraction, while only the "deeper" levels of similarity, specifically personality and cognitive–structural similarity, predicted attraction later in the relationship.

Although demographic characteristics have not been studied in terms of the filter theory, it seems that doing so would create a logical extension to the framework. Gender and race are "superficial" yet easily accessible salient attributes that influence initial perceptions of and reactions to the other dyad member. Therefore, incorporating social identity theory (Tajfel & Turner, 1986), one might expect that early in relationships individuals who are dissimilar in gender or race are treated differently (worse) from individuals who are of the same gender and race. As relationships develop over time, however, the dyad members learn more about each other and attend less to superficial characteristics, such as gender and race, and more to deeper level characteristics. Similarly, Allport's (1954) contact hypothesis suggests that frequent contact, involving cooperative work, allows people to

replace racial stereotypes with actual information about deeper level characteristics of other persons. Some research, using data from national surveys, indicates that interracial contact was related positively to racial attitudes (Ellison & Powers, 1994; Sigelman & Welch, 1993). Therefore, we predict that gender similarity and race similarity, which are superficial surface characteristics, *initially* influence relationships but become less influential over time as underlying similarity becomes evident to dyad members.

Several recent studies examining effects of similarity on group processes provide additional evidence that deeper level characteristics are more important later in relationships. Harrison et al. (1998) found that gender diversity negatively influenced group cohesion for groups with lower job tenure but was not related to cohesion for groups with greater job tenure. By contrast, deeper level similarity was not related to cohesion for groups with less job tenure but was important for groups with greater job tenure. Similarly, Glaman et al. (1996) found that at the initial team meeting, demographic similarity influenced social liking and co-worker preferences of team members. Three weeks after the initial interaction, demographic similarity was not related to social liking or co-worker preferences, and only similarity of personal values predicted these variables. Finally, Watson et al. (1993) found that culturally diverse work groups initially had less effective group processes and lower performance than did homogeneous groups. However, after 12 weeks, the diverse groups were performing as well as or better than the homogeneous groups, suggesting that the diverse groups worked more effectively as they learned more about one another. Such results support the proposition that stereotypes based on surface-level characteristics, such as race and gender, are replaced with information about underlying characteristics of the other individual as the relationship develops over time.

Hypothesis 4: The relationship between gender and race similarity and perceptions of mentoring received will be moderated by duration of the relationship such that the negative effects of *dissimilarity* will dissipate over time and thus have no effects in longer term relationships.

Hypothesis 5: The relationship between perceived similarity and mentoring received will be moderated by duration of the relationship such that the positive effects of perceived similarity will be stronger for longer term relationships.

METHOD

Procedure

Data were collected from doctoral students and their faculty advisors at a large public research university in the Midwest. Using rosters provided by the university registrar's office, surveys were distributed to 705 doctoral students in a variety of disciplines. We received responses from 303 of the students (43%). The cover letter informed students that we were interested in studying the developmental relationship between doctoral students and their faculty advisors. Each student was asked to indicate the person he or she considered to be the student's *primary advisor* in the doctoral program; the student was also told that this person may or

may not be the “officially designated” faculty advisor. Students were guaranteed confidentiality and were asked a series of questions about their relationship with their faculty advisor. The students named 198 different faculty advisors (some faculty served as advisors to more than one student). By surveying faculty, we were able to obtain demographic characteristics from 151 advisors (76%) who served as advisors to 220 different students. Because our focus is the faculty advisor–doctoral student dyad, we examined the 220 dyads for which we had faculty demographic information and student perceptions of the relationships (see Table 1).

TABLE 1
Sample Demographics

Demographic variable	Student	Faculty advisor	Dyadic composition	
			Same	Different
Gender			145 (66)	74 (34)
Men	133 (61)	178 (81)		
Women	86 (39)	42 (19)		
Gender composition of dyads				
Male advisor–Male student			118	
Female advisor–Female student			27	
Male advisor–Female student				59
Female advisor–Male student				15
Race			146 (70)	64 (30)
Caucasian	143 (68)	192 (88)		
Black	14 (7)			
Hispanic	10 (5)	3 (1)		
Asian/Pacific Islander	43 (20)	19 (9)		
Native American	1 (1)	5 (2)		
Racial composition of dyads				
White advisor–White student			133	
Asian advisor–Asian student			12	
Hispanic advisor–Hispanic student			1	
White advisor–Asian student				30
White advisor–Black student				14
White advisor–Hispanic student				7
White advisor–Native American student				1
Asian advisor–White student				4
Asian advisor–Hispanic student				1
Hispanic advisor–White student				2
Native American advisor–White student				3
Native American advisor–Hispanic student				1
Native American advisor–Asian student				1

Note. Percentages are in parentheses. For Faculty Advisor Gender \times Student Gender table, $\chi^2(1, N = 219) = 13.6, p \leq .001$, phi coefficient = .25. For Advisor Race \times Student Race table, $\chi^2(12, N = 210) = 38.6, p \leq .001$, phi coefficient = .43, although this must be interpreted with caution due to number of cells with counts less than 5. Of the 64 dissimilar race dyads, 52 consisted of a White mentor and a minority student, 9 consisted of a minority mentor and a White student, and 3 consisted of two minorities of different races.

Sample

The doctoral students were predominantly White (68%), with some Asian/Pacific Islanders (20%), Blacks (7%), Hispanics (5%), and Native Americans (1%). Students were predominantly male (61%), and their ages ranged from 23 to 60 years, with an average age of 32.3. Most students were married (60%) and had no dependent children living with them (66%). In general, students had been in the doctoral program for approximately 3.2 years.

The faculty advisors were predominantly White (88%), with some Asian/Pacific Islanders (9%), Native Americans (2%), and Hispanics (1%). Most advisors were male (81%), and their ages ranged from 34 to 73 years, with an average age of 49.0. Most faculty advisors were full professors (62%), although there were some associate (25%) and assistant professors (12%).

Measures

Faculty advisor and doctoral student gender. Respondents indicated their gender, which was coded as 1 for male and 2 for female.

Faculty advisor and doctoral student race. Respondents indicated their race. Because there were so few minorities, we categorized race as either White, coded as 1, or minority (e.g., Black, Hispanic, Asian/Pacific Islander, Native American), coded as 2.

Demographic similarity. To create the measure of *race similarity*, dyads were categorized as *similar* (coded as 1) *only* when both members were of the same race. Dyads were categorized as *dissimilar* (coded as 0) when the members were not of the same race (e.g., Hispanic with Black). Therefore, although faculty advisor and doctoral student race was coded as White or minority, for the measure of racial similarity, dyads were coded as similar only when both members were of the same race. Approximately 70% of the dyads consisted of members who were of the same race (see Table 1). *Gender similarity* also was categorized as similar (coded as 1) or dissimilar (coded as 0); approximately 66% of the dyads consisted of members who were of the same gender.

Perceived similarity. Five items (on a 7-point scale) similar to those used by Turban and Jones (1988) measured doctoral students' perceived similarity to their advisors. These items measured the extent to which respondents agreed that their advisors and the students "see things in much the same way," "are alike in a number of areas," "have similar working styles," "have similar career aspirations," and "have similar values and attitudes." The coefficient alpha for this scale was .87.

Mentoring received. To obtain a comprehensive measure of mentoring, we used at least three items to measure each of the nine mentoring functions identified by Kram (1985). We adopted and modified items used by other researchers (Dreher & Ash, 1990; Gibson, 1989; Noe, 1988b; Ragins & McFarlin, 1990; Thomas, 1990), although we also developed some new items. We adapted, modified, or developed items as needed because previous researchers studied mentoring relationships in business settings, whereas we examined developmental relationships

between faculty advisors and doctoral students in an academic setting. Students indicated, on a 7-point scale (with 1 = *not at all* and 7 = *to a very large extent*), the extent to which their faculty advisors provided the mentoring described in the item (i.e., served as a role model for the students). We conducted a principal components factor analysis with a varimax rotation. The scree plot and the eigenvalue greater than 1.0 criterion suggested four factors. The factors accounted for 73% of the variance of the items. Scales were created as the means of items that had factor loadings greater than .50 for those factors only (see Table 2). Five items that did not have factor loadings greater than .50 or that had cross-loadings greater than .50 were not used for scale construction.

TABLE 2
Mentoring Items and Factor Loadings

Item	Psychosocial mentoring	Exposure/ Visibility and sponsorship	Challenging assignments	Protection and assistance
27. Served as a role model for you	<u>.77</u>	.27	.36	.06
28. Been someone you really identified with	<u>.77</u>	.23	.33	.21
24. Interacted with you such that mutual liking and understanding resulted	<u>.76</u>	.37	.14	.28
26. Been a friend to you	<u>.74</u>	.31	.06	.33
18. Conveyed feelings of respect for you as an individual	<u>.73</u>	.37	.16	.20
29. Represented someone you wanted to emulate (e.g., in achievements, work behavior, virtues, way of living, personal styles, specific attributes)	<u>.73</u>	.18	.39	.06
25. Enjoyed informal exchanges with you about work and outside work experiences	<u>.71</u>	.38	.05	.30
22. Served as a sounding board for you to develop and understand yourself	<u>.70</u>	.19	.23	.44
23. Discussed your questions or concerns regarding feelings of competence, commitment to advancement, and relationships	<u>.65</u>	.20	.20	.47
20. Encouraged you to talk openly about anxieties and fears that detracted from your work	<u>.64</u>	.20	.18	.49
17. Treated you as a competent colleague	<u>.62</u>	.49	.21	.08
21. Shared personal experiences as an alternative perspective to your problems with peers and superiors or work/family conflicts	.60	.23	.19	.54
10. Helped you to develop strategies to advance your career	.46	.43	.43	.36
5. Created opportunities for you to impress important people	.24	<u>.77</u>	.32	.23
6. Brought your accomplishments to the attention of important people	.30	<u>.76</u>	.27	.27

TABLE 2—Continued

Item	Psychosocial mentoring	Exposure/ Visibility and sponsorship	Challenging assignments	Protection and assistance
4. Introduced you to important people	.24	<u>.75</u>	.29	.18
2. Gone out of his or her way to promote your career interests	.35	<u>.73</u>	.26	.21
1. Suggested you as a likely candidate when appropriate opportunities/assignments have come along	.28	<u>.69</u>	.32	.18
3. Looked after your welfare by using his or her influence with superiors and peers to promote and defend your career interests	.36	<u>.69</u>	.21	.30
7. Given you suggestions on how to attain recognition in the profession	.31	<u>.60</u>	.39	.26
8. Informed you of key but unwritten aspects of your role	.30	.49	.45	.35
16. Assigned you tasks that pushed you into developing new skills	.18	.31	<u>.83</u>	.15
15. Provided you with technical knowledge to develop new skills	.23	.25	<u>.78</u>	.19
14. Provided you with especially challenging assignments that have enhanced your skills	.17	.41	<u>.78</u>	.16
9. Given you feedback regarding your performance	.42	.31	.48	.26
19. Trusted you enough to encourage you to try new ways of doing things	.40	.37	.47	.33
12. Shielded you from damaging contact with important people	.25	.27	.23	<u>.75</u>
13. Protected you from potentially troublesome situations	.27	.29	.21	<u>.73</u>
11. "Run interference" for you	.30	.42	.15	<u>.55</u>
Eigenvalue	7.56	5.98	4.15	3.62
Percentage of variance accounted for	26	21	14	12
Coefficient alpha	.96	.94	.91	.83

Note. $N = 266$ because of listwise deletion for missing data. Underlined items indicate those used in scale construction. Coefficient alpha calculated on the 220 dyads used in the subsequent analyses. Students indicated, on a 7-point scale with 1 = *not at all* and 7 = *to a very large extent*, the extent that their faculty advisors provided the mentoring described in the item (i.e., served as a role model).

The first factor, *psychosocial mentoring*, consisted of 11 items ($\alpha = .96$) reflecting various psychosocial functions such as serving as a role model, counseling, and friendship. The second factor consisted of 7 items ($\alpha = .94$) measuring the career functions of providing *exposure/visibility* and *sponsorship*. The third factor consisted of 3 items ($\alpha = .91$) measuring *challenging assignments*. Finally, the fourth factor consisted of 3 items ($\alpha = .83$) measuring *protection* and *assistance*. These four scales are relatively consistent with the mentoring literature, which has typically measured psychosocial and career mentoring and occasionally a third

scale (Noe, 1988b; Turban & Dougherty, 1994; Viator & Scandura, 1991). Our factor structure is quite similar to that found by Turban and Dougherty (1994), with the notable difference being that our study has two career scales—(a) exposure/visibility and sponsorship and (b) challenging assignments—whereas their study had only one career factor.

Duration of the relationship. Students indicated how long they had worked with their faculty advisors. The average duration of the relationship was 38 months ($SD = 18$).

Control Variables

We controlled for students' Graduate Record Examination (GRE) scores because of evidence that GRE scores are related to mentoring received (Green & Bauer, 1995). We controlled for the length of time students had been in the doctoral program based on the assumption that mentoring needs of students may vary over time in the program. Approximately 87% of the students reported that their mentoring relationships were formed informally (as opposed to assigned). Because there appear to be differences between formal and informal relationships (Ragins & Cotton, 1999), we created a variable called *assigned relationship* (0 = informal, 1 = assigned) and controlled for it in the regression analyses. We controlled for faculty rank based on the assumption that senior faculty may be able to provide more mentoring than junior faculty are able to provide. Finally, we categorized dyads as in either the social/behavioral sciences, the arts and humanities, or the life/physical sciences. We created two dummy variables, using life/physical sciences as the contrast group, to control for any differences across disciplines.

ANALYSES AND RESULTS

Table 3 presents correlations and descriptive statistics for the study variables. The correlation analyses indicate that student demographics were not related to mentoring received. However, in general, students with minority advisors reported receiving less mentoring.

Hypothesis 1: Demographic similarity and relationship formation. Hypothesis 1 proposed that individuals would be more likely to be involved in developmental relationships with others of the same gender and race. Table 1 presents the composition of the cross-gender and cross-race dyads, and Table 3 reports correlations of student and advisor gender and race. As indicated in Table 3, gender of faculty advisors and gender of doctoral students were correlated ($r = .25$, $p \leq .001$), indicating that individuals were more likely to be in relationships with others who were of the same gender. Examination of Table 1 indicates that although female advisors accounted for 19% of the dyads, only 11% of the male students had female advisors (15 of 133 male student dyads), whereas 31% of the female students had female advisors (27 of 86 female student dyads). Thus, male students were less likely to work with female advisors, and female students were more likely to work

TABLE 3
Correlations, Means, and Standard Deviations

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Control Variables																					
1 Graduate Record	517	136	—																		
2 Graduate Record	616	114	-.00	—																	
3 Years in Program	3.21	1.28	.10	-.06	—																
4 Duration of relationship (months)	38.11	17.97	.11	.04	.71*	—															
5 Assigned relationship	.13	.34	-.04	-.17*	-.14*	-.11	—														
6 Faculty rank	3.51	.70	.13	.08	.04	.16*	-.03	—													
Student demographics																					
7 Age	32.29	6.14	-.02	-.29*	.10	.13	.12	.04	—												
8 Race	1.32	.47	-.57*	.13	-.09	-.11	-.09	-.02	.16*	—											
9 Gender	1.39	.49	.18*	-.18*	-.10	-.07	.04	-.03	-.02	-.15*	—										
Faculty Advisor demographics																					
10 Age	48.95	8.36	-.04	-.03	.04	.16*	-.01	.67*	.19*	.01	-.02	—									
11 Race	1.12	.33	-.18*	.26*	-.07	.10	-.02	-.03	-.11	.25*	-.08	.12	—								
12 Gender	1.19	.39	-.01	-.07	-.09	-.04	.02	-.14*	.01	-.04	.25*	-.14*	-.04	—							
Relational Demography																					
13 Race similarity	.70	.46	.42*	-.08	.11	.21*	.07	-.03	-.07	-.76*	.10	-.02	-.14*	-.03	—						
14 Gender similarity	.66	.47	-.12	.07	.08	.09	-.03	-.04	.07	.08	-.59*	-.07	.03	-.02	.02	—					
Perceived similarity																					
15 Protégé perceived similarity	4.43	1.31	-.13	-.02	.03	-.00	-.04	-.09	.06	.16*	-.03	-.10	-.15*	-.01	-.10	.02	.86				
Mentoring received																					
16 Psychosocial mentoring	4.86	1.58	-.05	-.02	-.00	.01	-.09	-.06	.12	.07	.05	-.03	-.14*	.03	-.05	-.01	.73*	.96			
17 Exposure/Visibility and sponsorship																					
18 Challenging assignments	4.46	1.62	-.01	-.05	.01	.03	-.14*	-.03	.01	-.05	.08	-.10	-.17*	.06	.02	.00	.54*	.73*	.94		
19 Protection and assistance	4.87	1.57	-.07	-.06	-.04	-.02	-.04	-.09	.09	-.01	.06	-.11	-.16*	.01	.02	-.03	.53*	.56*	.67*	.91	
	3.92	1.63	-.21*	.04	.04	.01	-.11	-.02	.04	.08	-.01	-.02	-.02	.04	-.05	.03	.51*	.68*	.70*	.50*	.83

Note. Ethnicity coded 1 = White, 2 = minority. Gender coded 1 = male, 2 = female. Assigned relationship coded 0 = not assigned, 1 = assigned. Gender and race similarity coded 0 = dissimilar, 1 = similar. Duration of relationship measured in months. *N* ranged from 203 to 220. Numbers in parentheses on diagonal are coefficient alpha for the scale.

* $p < .05$.

with female advisors, than expected by chance. As shown in Table 3, race of advisor and race of student (each coded 1 = White and 2 = minority) were positively related ($r = .25$, $p \leq .001$), indicating that individuals were more likely to form relationships with individuals of the same race. Because of the relatively small numbers of minorities, we collapsed across the ethnic groups (Native Americans, Asian/Pacific Islanders, Blacks, and Hispanics) to create a minority subgroup for this analysis. In addition, however, the frequency table crossing faculty and student ethnic groups *without* collapsing across ethnic status provided similar results, $\chi^2(12, N = 210) = 38.6$, $p \leq .001$, phi coefficient = .43, although because many of the cells contained missing data, such results must be interpreted with caution. Nonetheless, examination of Table 1 indicates that White students were less likely to work with minority advisors than expected by chance; although minority advisors accounted for 12% of the dyads, only 6% of the White students worked with minority advisors. As noted earlier, the overwhelming majority of faculty advisors were White and male. Nonetheless, our results provide support for Hypothesis 1 because individuals were more likely to be in developmental relationships with others of the same gender and race than expected by chance, that is, taking into account the base rate of White and male faculty advisors.

We used regression analyses to examine Hypotheses 2 through 5. These analyses included control variables as step 1, student and faculty advisor demographics as step 2, gender and race similarity as step 3, perceived similarity to the advisor as step 4, and the set of interaction terms that tested whether duration of the relationship moderated the effects of similarity as step 5. We plotted the interactions using procedures discussed by Cohen and Cohen (1983) such that the low and high groups are 1 standard deviation below and above the mean, respectively. The change in R^2 when a set of variables is added to the regression equation indicates whether that set of variables explains additional variance in the dependent variable. Thus, the change in R^2 is influenced by the order of entry of the variables. However, we provide the regression coefficients from the full model, which are not affected by order of entry and which indicate whether that specific variable explains unique variance in the dependent variable.

Hypothesis 2: Demographic similarity and mentoring outcomes. Hypothesis 2 proposed that gender and race similarity would be related to mentoring received. In general, the regression analyses (Table 4) provide relatively weak support for this hypothesis. When examined as a set, gender and race similarity variables did not add significant variance for any of the dependent variables.

Hypothesis 3: Perceived similarity and mentoring outcomes. Results supported Hypothesis 3 by indicating that perceived similarity was positively related to mentoring received. Perceived similarity explained a significant, and substantial, amount of variance in each of the dependent variables.

Hypothesis 4: Moderating effects of duration of relationship on gender and race similarity. Results provided some support for Hypothesis 4, which proposed that duration of the relationship would moderate the effects of gender and race similarity on mentoring received. The set of (Duration of Relationship \times Similarity)

TABLE 4
Hierarchical Regression Analysis: Mentoring Functions

Dependent variable	Psychosocial mentoring		Exposure/Visibility and sponsorship		Challenging assignments		Protection	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
Step 1: Control variables		.035		.046		.022		.071 [†]
Graduate Record Examination—Verbal	.06		.00		-.03		-.17*	
Graduate Record Examination—Quantitative	.04		-.03		-.03		.06	
Years in program	-.04		-.04		-.07		.07	
Duration of relationship (time)	.49*		.72*		.82**		.65*	
Assigned relationship	-.07		-.09		-.06		-.07	
Faculty rank	-.03		.15 [†]		.08		.13	
Social/behavioral sciences	.06		-.00		-.06		-.03	
Arts and humanities	.07		-.05		.05		-.01	
Step 2: Demographics		.027		.024		.043		.010
Student age	.07		.00		.10		.06	
Student gender	.07		.09		.07		.05	
Student race	-.11		-.21 [†]		-.16		-.17	
Advisor age	.01		-.12		-.14		-.09	
Advisor gender	.02		.04		.03		.06	
Advisor race	.02		.01		-.02		.10	
Step 3: Demographic similarity		.000		.001		.001		.001
Gender similarity	.34*		.34*		.16		.42*	
Race similarity	-.09		-.13		.03		-.07	
Step 4: Perceived similarity		.497***		.267***		.276***		.246***
Perceived similarity	.89***		.83***		.97***		.74***	
Step 5: Interaction terms		.020*		.030*		.031*		.038**
Time \times Gender Similarity	-.43**		-.43*		-.20		-.59**	
Time \times Race Similarity	-.02		.05		-.11		.03	
Time \times Perceived Similarity	-.27		-.53 [†]		-.78**		-.40	
Total R^2	.579***		.367***		.372***		.365***	
Adjusted R^2		.532		.297		.302		.293
N	200		200		200		196	

Note. Regression coefficients from the full model. ΔR^2 refers to the change in R^2 when the set of variables is added to the regression equation. Gender coded 1 = male, 2 = female. Race coded 1 = White, 2 = minority. Gender and race similarity coded 0 = dissimilar, 1 = similar.

[†] $p \leq .10$.

* $p \leq .05$.

** $p \leq .01$.

*** $p \leq .001$.

variables explained unique variance in all of the measures of mentoring received, although there were no significant effects for race similarity. Nonetheless, the Duration of Relationship by Gender Similarity interaction term was significant for psychosocial mentoring; exposure/visibility and sponsorship; and protection and assistance. Figure 1 presents a plot of the means and indicates that, as hypothesized, early in the duration of the relationship, gender dissimilarity was detrimental to the receipt of mentoring. Surprisingly, however, students in gender-dissimilar dyads of a greater duration reported receiving *more* mentoring than did

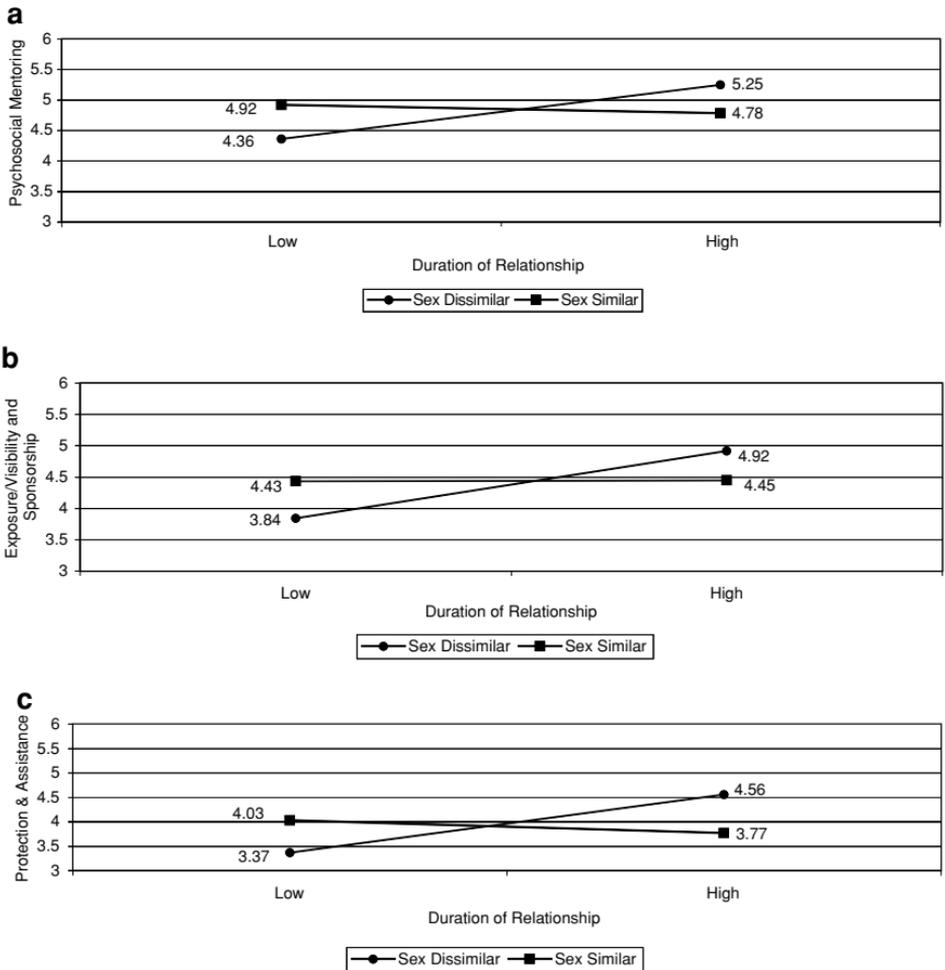


FIG. 1. Sex similarity by duration of relationship interactions.

those in gender-similar dyads. In general, duration of relationships did not affect the mentoring received by students with same-gender mentors. Such results provide partial support for Hypothesis 4 in that gender dissimilarity was detrimental to mentoring received early in the duration of the relationship, although the results for long-duration relationships were somewhat stronger than what we hypothesized.

Hypothesis 5: Duration of relationship-moderating effects of perceived similarity. Hypothesis 5 proposed that perceived similarity would be more strongly related to mentoring received for students in long-term relationships than for students in short-term relationships. Results indicated a significant interaction for challenging assignments and a marginally significant interaction for exposure/visibility and sponsorship. The plot of the means, as shown in Fig. 2, indicates that the detrimental effects of *dissimilarity* were reduced over time. Thus, perceived similarity

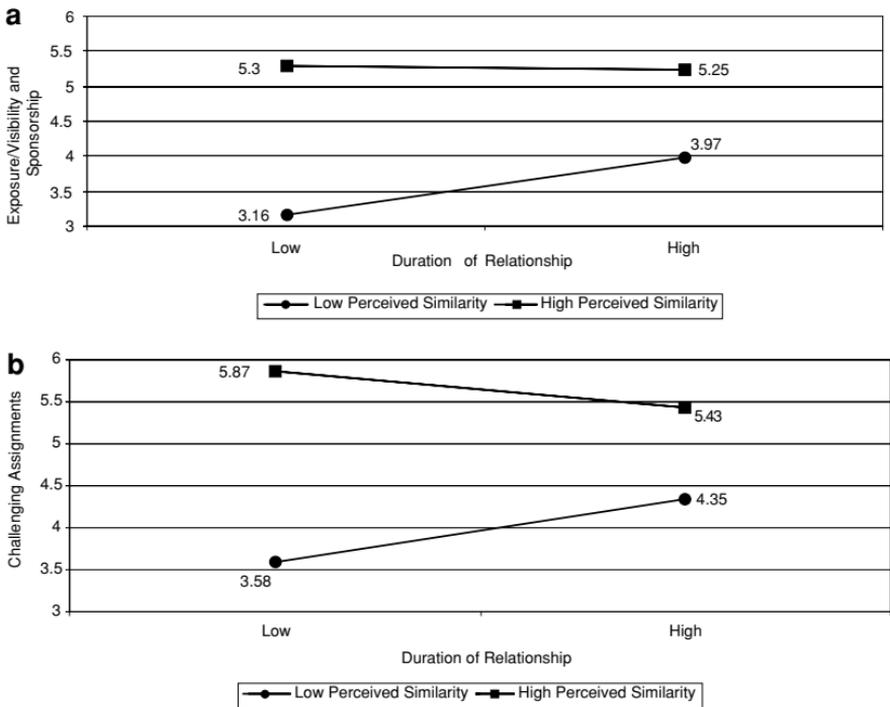


FIG. 2. Perceived similarity by duration of relationship interactions.

was more strongly related to mentoring received for short- versus long-duration dyads, which is opposite to what we expected.

DISCUSSION

We extended research on developmental relationships by incorporating relevant social psychological theories to generate hypotheses about doctoral student–faculty advisor relationships. We found that individuals were more likely to be in developmental relationships with others who were of similar gender and race, although gender and race similarity did not influence mentoring received. Perceived similarity, however, was related to mentoring received.

A notable contribution of this study is the finding that duration of relationship moderates the effects of both gender similarity and perceived similarity on mentoring received. As expected, early in the duration of the relationship, students in gender-dissimilar dyads reported receiving less mentoring. We expected the deleterious effects of gender dissimilarity to dissipate over time such that for long-term relationships there would be no gender similarity effects. However, in long-term relationships, gender-dissimilar dyads reported receiving *more* mentoring than did gender-similar dyads, indicating that gender dissimilarity was harmful early in the relationship but was beneficial for longer duration relationships. Our

results corroborate the findings of Watson et al. (1993), who found that diverse groups initially performed more poorly than did homogeneous groups but that after 17 weeks the diverse groups had greater performance. Interestingly, researchers studying the effects of diversity in group processes have argued either that diversity is beneficial (the *value in diversity hypothesis*) or that diversity is harmful (the *diversity is deleterious hypothesis*) (Williams & O'Reilly, 1998). Although speculative, in our study it may be that over time diversity in gender-dissimilar dyads introduced a wider range of information into the relationships, leading to more beneficial outcomes. Little is known, however, about the process that leads to beneficial diversity effects (Brickson, 2000). We urge researchers to consider tracking relationships over time when investigating influences of diversity.

We did not find any race effects on mentoring received, and duration of the relationship did not moderate the effects of race similarity on mentoring received. We theorized that individuals would categorize others based on salient characteristics, such as gender and race, and initially behave based on such categorization. Although little is known about which characteristics influence the categorization process in various contexts, some evidence suggests that individuals are more likely to categorize others by gender than by race (Brickson, 2000; Stangor et al., 1992). Although conjecture, perhaps in our context individuals were more likely to categorize others based on their gender than on their race, resulting in gender effects but no race effects.

We found strong relationships between perceived similarity and mentoring received. Ensher and Murphy (1997) also found strong relationships between perceived similarity and mentoring received, with correlations of .78 and .69 with psychosocial and career mentoring, respectively. Given that both measures were collected on a single survey at one point in time, it seems likely that common method variance may have inflated this relationship. Furthermore, the direction of causality between these variables is unknown. Future research might attempt to investigate the causal direction of this relationship.

Perceived similarity was more strongly related to mentoring received in shorter versus longer duration relationships for challenging assignments and exposure/visibility and sponsorship ($\alpha = .10$), a pattern opposite to our hypothesis. Thus, the negative effect of perceived *dissimilarity* abated during the relationships. One explanation for this finding is that advisors with dissimilar students provided more challenging assignments (and exposure/visibility and sponsorship) over time as students proved themselves to be ready for the increased challenge. Another explanation for such results is that students and faculty in dyads where the students had low perceived similarity to the advisors learned how to adapt to one another during the course of the relationships. Such results, along with the observed beneficial effects of gender dissimilarity for long-duration relationships, suggest that dissimilar students and faculty need time to learn how to adapt to one another. Future research might investigate whether certain personality characteristics, such as "self-monitoring" (Snyder, 1987), predispose individuals to be better able to adapt to dissimilar others.

Our results are consistent with evidence that women and minorities are more likely to be in cross-gender and cross-race relationships than are White men (Ragins & Cotton, 1999; Ragins & McFarlin, 1990; Thomas, 1990) because of the greater availability of potential White male mentors relative to minority or women mentors. But it is important to note that we also found that individuals were more likely *than expected by chance* to be involved in developmental relationships with others of the same gender and race. Because the availability of female and minority mentors influences the opportunity for female and minority students to form relationships with similar others, some female and minority students might not have been able to form relationships with mentors who were of the same gender or race. Thus, although speculative, it seems possible that in contexts with more female and minority potential mentors, the effects of gender and race similarity on relationship formation might be stronger.

More broadly, we expect that the proportion of potential women and minority mentors influences the formation and development of mentoring relationships. Ely (1994, 1995) found that the proportion of senior women in law firms influenced junior women's perceptions of working relationships in these firms. More specifically, junior women in firms with fewer senior women were more likely than junior women in firms with greater numbers of senior women to see their gender as a liability that negatively affected attaining constructive developmental relationships. By extension, it seems likely that the proportion of available minority and women mentors in an organization influences how junior minority and women colleagues view opportunities for finding constructive developmental relationships. Thus, we urge scholars interested in developmental relationships to examine the effects of the demographic composition of the *organization* on developmental relationships among women and minorities.

Gender and race similarity influenced the formation of relationships, although there were no effects (or at least weaker ones) on mentoring received. However, because we hypothesized that gender and race similarity effects would be most influential early in the relationship, the lack of such effects may have occurred because dyad members adapted to one another or because dyads in which members could not adapt to one another were disbanded. Because our data were cross-sectional, we were not able to measure dyads that dissolved. However, if gender and race dissimilarity led to dysfunctional relationships that disbanded, then our results may underestimate the effects on mentoring received. We urge future researchers to use longitudinal designs to assess factors related to the dissolving of developmental relationships. More broadly, we agree with Scandura (1998), who called for more research into factors related to dysfunctional mentoring relationships.

Evidence suggests that individuals form developmental relationships with others who are seen as similar (*identification*) and competent (*perceived competence*) and with whom they feel *interpersonally comfortable* (Allen et al., 1997, 2000; Olian et al., 1993, 1998; Ragins, 1997). We found that individuals were more likely to form relationships with others of the same gender and race, supporting the importance of salient demographic characteristics early in relationships. Future

research might investigate the mechanisms through which this process occurs. For example, perhaps gender and race similarity lead to *identification*, *perceived competence*, and *interpersonal comfort*, which influence relationship development. More broadly, little is known about how developmental relationships form. For example, research is needed to investigate whether protégés attempt to form relationships with others who have similar demographic characteristics and/or whether mentors choose to get involved in developmental relationships only with similar others.

We urge scholars to investigate the specific demographic composition of the dyads whenever possible (Ragins & Cotton, 1999). It may be that dyads composed solely of minorities are the most risky for both mentors and protégés because these dyads are so salient (Ragins, 1997a). Others have suggested that a dyad composed of a majority mentor and minority protégé provides a unique developmental opportunity (Dreher & Cox, 1996). Unfortunately, as in our study, researchers typically are faced with too few dyads with minority or female mentors to examine all specific dyadic combinations.

We recognize some potential limitations associated with our research design, a cross-sectional survey. For example, although we found that duration of relationship moderated the effects of gender and perceived similarity, longitudinal research is needed to track relationships over time. In addition, because of the cross-sectional nature of the design, we cannot be sure of the causal direction of some of the relationships (e.g., mentoring with perceived similarity). However, for *gender* similarity, the causal direction of relationships is unambiguous. Although method variance may be a concern for some of the relationships, the demographic measures are objective and verifiable, lessening concerns about method variance. Furthermore, method variance is not an alternative explanation for the moderating effects of duration of relationship. It would have been desirable to have greater diversity of gender and race among the mentors and protégés. The relative homogeneity of the sample made it more difficult to assess the impact of various demographic combinations in the dyads.

Aspects of our setting and sample are somewhat unique and thus raise questions about the generalizability of our results. Although Green and Bauer (1995) presented evidence indicating that faculty doctoral advisors are expected to provide mentoring to doctoral students, faculty advisors may have more power over the students than is typical for mentoring relationships in organizational settings. It seems possible that some of the advisors named by the students were not mentors to the students. As noted by Van Dyne (1996), mentoring relationships in academic and business settings may differ in terms of the predictability of transitions and the goals of the relationships. But there are also similarities between mentoring relationships in these different settings, including the importance of shared interests, the reciprocal nature of the relationships, and the need to work through transitions in the relationships. Finally, although when possible we used mentoring items from previous studies, we did modify some items to fit our academic setting. For example, we modified some of the career mentoring items because the dynamics of career-related mentoring may be somewhat different in academic

settings from those in business settings. Overall, we believe our setting provided an excellent setting in which to investigate our hypotheses. We hope that future researchers replicate and extend our study using different types of developmental relationships.

Our results indicate that developmental relationships change over time. Thus, both protégés and mentors should be aware that newly formed relationships that might not be working well may improve over time. Furthermore, there may be benefits of working with demographically dissimilar others, especially over a span of time. More broadly, practitioners and scholars should be clear to differentiate surface similarity in demographic characteristics from underlying similarity of values, attitudes, and beliefs. We urge researchers interested in diversity in relationships to continue to investigate deeper level characteristics such as attitudes, values, and personality characteristics (Milliken & Martins, 1996). Developmental relationships, by definition, are important to junior and senior colleagues, although much remains to be learned about the dynamics of more successful relationships. Future research might extend our efforts by examining communication patterns in diverse developmental relationships to more accurately determine how to create relationships in which diversity is beneficial. In sum, previous research examining mentoring in graduate student–advisor dyads has concluded that mentoring is helpful for graduate students (Luna & Cullen, 1998) in that it increases their research productivity, commitment, and early career success (Giles & Endsley, 1988; Jacobi, 1991; Wilde & Schau, 1991). Although scholars in the educational area have discussed gender (Cronan-Hillix et al., 1986) and race (Haring & Freeman, 1999) effects, little empirical work has been done in this area. Thus, we extended the literature by looking in more detail at the nature of these advisor–graduate student dyads. Our results should also contribute to the study of developmental relationships in academic settings.

REFERENCES

- Allen, T. D., Poteet, M. L., & Burroughs, S. M. (1997). The mentor's perspective: A qualitative inquiry and future research agenda. *Journal of Vocational Behavior*, *51*, 70–89.
- Allen, T. D., Poteet, M. L., & Russell, J. E. A. (2000). Protégé selection by mentors: What makes the difference? *Journal of Organizational Behavior*, *21*, 271–282.
- Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison–Wesley.
- Brickson, S. (2000). The impact of identity orientation on individual and organizational outcomes in demographically diverse settings. *Academy of Management Review*, *25*, 82–101.
- Brown, M. C., Davis, G. L., & McClendon, S. A. (1999). Mentoring graduate students of color: Myths, models, and modes. *Peabody Journal of Education*, *74*, 105–118.
- Byrne, D. (1971). *The attraction paradigm*. New York: Academic Press.
- Cesa, I. L., & Fraser, S. C. (1989). A method for encouraging the development of good mentor–protégé relationships. *Teaching of Psychology*, *16*, 125–128.
- Chao, G. T., Walz, P. M., & Gardner, P. D. (1992). Formal and informal mentorships: A comparison of mentoring functions and contrast with nonmentored counterparts. *Personnel Psychology*, *45*, 619–636.
- Clawson, J. G., & Kram, K. E. (1984). Managing cross-gender mentoring. *Business Horizons*, *27*, 22–32.

- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Cronan-Hillix, T., Gensheimer, L. K., & Davidson, W. S. (1986). Students' views of mentors in psychology graduate training. *Teaching of Psychology*, **13**, 123–127.
- Dreher, G., & Ash, R. (1990). A comparative study of mentoring among men and women in managerial, professional, and technical positions. *Journal of Applied Psychology*, **75**, 525–535.
- Dreher, G. F., & Cox, T. H., Jr. (1996). Race, gender, and opportunity: A study of compensation attainment and the establishment of mentoring relationships. *Journal of Applied Psychology*, **81**, 297–308.
- Duck, S. (1977). *The study of acquaintance*. Westmead, UK: Saxon House.
- Duck, S. W., & Craig, G. (1978). Personality similarity and the development of friendship: A longitudinal study. *Journal of Social and Clinical Psychology*, **17**, 237–242.
- Ellison, C. G., & Powers, D. A. (1994). The contact hypothesis and racial attitudes among Black Americans. *Social Science Quarterly*, **75**, 385–400.
- Ely, R. J. (1994). The effects of organizational demographics and social identity on relationships among professional women. *Administrative Science Quarterly*, **39**, 203–238.
- Ely, R. J. (1995). The power in demography: Women's social construction of gender identity at work. *Academy of Management Journal*, **38**, 589–634.
- Ensher, E. A., & Murphy, S. E. (1997). Effects of race, gender, perceived similarity, and contact on mentor relationships. *Journal of Vocational Behavior*, **50**, 460–481.
- Erkut, S., & Mokros, J. R. (1984). Professors as models and mentors for college students. *American Educational Research Journal*, **21**, 399–417.
- Fagenson, E. A. (1989). The mentor advantage: Perceived career/job experience of protégés vs. non-protégés. *Journal of Organizational Behavior*, **10**, 309–320.
- Gibson, L. K. (1989). *Mentoring and career outcomes for managers and professionals*. Unpublished doctoral dissertation, University of Missouri, Columbia.
- Giles, H. W., & Endsley, R. C. (1988). Early career development among child and family development professionals: The role of professor and peer relationships. *Family Relations*, **37**, 470–476.
- Glaman, J. M., Jones, A. P., & Rozelle, R. M. (1996). The effects of co-worker similarity on the emergence of affect in work teams. *Group and Organization Management*, **21**, 192–215.
- Green, S. G., & Bauer, T. N. (1995). Supervisory mentoring by the advisers: Relationships with doctoral student potential, productivity, and commitment. *Personnel Psychology*, **48**, 537–561.
- Haring, M. J., & Freeman, K. (1999). Editor's introduction. *Peabody Journal of Education*, **74**, 1–4.
- Harrison, D. A., Price, K. H., & Bell, M. P. (1998). Beyond relational demography: Time and the effects of surface- and deep-level diversity on work group cohesion. *Academy of Management Journal*, **41**, 96–107.
- Hill, S. E. K., Bahniuk, M. H., & Dobos, J. (1989). The impact of mentoring and collegial support on faculty success: An analysis of support behavior, information adequacy, and communication apprehension. *Communication Education*, **38**, 15–33.
- Hurley, A. E., & Fagenson-Eland, E. A. (1996). Challenges in cross-gender mentoring relationships: Psychological intimacy, myths, rumors, innuendos, and sexual harassment. *Leadership and Organization Development Journal*, **17**(3), 42–49.
- Jacobi, M. (1991). Mentoring and undergraduate academic success: A literature review. *Review of Educational Research*, **61**, 505–532.
- Judge, T. A., & Ferris, G. R. (1993). Social context of performance evaluation decisions. *Academy of Management Journal*, **36**, 80–105.
- Kram, K. (1983). Phases of the mentor relationship. *Academy of Management Journal*, **26**, 608–625.
- Kram, K. (1985). *Mentoring at work*. Glenview, IL: Scott, Foresman.
- Lefkowitz, J. (1994). Race as a factor in job placement: Serendipitous findings of "ethnic drift." *Personnel Psychology*, **47**, 497–513.
- Liden, R. C., Wayne, S. J., & Stilwell, D. (1993). A longitudinal study of the early development of leader-member exchanges. *Journal of Applied Psychology*, **78**, 662–674.

- Luna, G., & Cullen, D. (1998). Do graduate students need mentoring? *College Student Journal*, **32**, 322–330.
- Meglino, B. M., Ravlin, E. C., & Adkins, C. L. (1989). A work values approach to corporate culture: A field test of the value congruence process and its relationship to individual outcomes. *Journal of Applied Psychology*, **74**, 424–432.
- Milliken, F. J., & Martins, L. L. (1996). Searching for common threads: Understanding the multiple effects of diversity in organizational groups. *Academy of Management Review*, **21**, 402–433.
- Neimeyer, R. A., & Mitchell, K. A. (1988). Similarity and attraction: A longitudinal study. *Journal of Social and Personal Relationships*, **5**, 131–148.
- Neimeyer, R. A., & Neimeyer, G. J. (1983). Structural similarity in the acquaintance process. *Journal of Social and Clinical Psychology*, **17**, 237–242.
- Noe, R. (1988a). Women and mentoring: A review and research agenda. *Academy of Management Review*, **13**, 65–79.
- Noe, R. (1988b). An investigation of the determinants of successful assigned mentoring relationships. *Personnel Psychology*, **41**, 457–479.
- Ragins, B. R. (1989). Barriers to mentoring: The female manager's dilemma. *Human Relations*, **42**, 1–22.
- Ragins, B. R. (1997a). Antecedents of diversified mentoring relationships. *Journal of Vocational Behavior*, **51**, 90–109.
- Ragins, B. R. (1997b). Diversified mentoring relationships in organizations: A power perspective. *Academy of Management Review*, **22**, 482–521.
- Ragins, B. R., & Cotton, J. L. (1991). Easier said than done: Gender differences in perceived barriers to getting a mentor. *Academy of Management Journal*, **34**, 939–951.
- Ragins, B. R., & Cotton, J. L. (1993). Gender and willingness to mentor in organizations. *Journal of Management*, **19**, 97–111.
- Ragins, B. R., & Cotton, J. L. (1999). Mentor functions and outcomes: A comparison of men and women in formal and informal mentoring relationships. *Journal of Applied Psychology*, **84**, 529–550.
- Ragins, B. R., & McFarlin, D. B. (1990). Perceptions of mentor roles in cross-gender mentoring relationships. *Journal of Vocational Behavior*, **37**, 321–339.
- Scandura, T. A. (1992). Mentorship and career mobility: An empirical investigation. *Journal of Organizational Behavior*, **13**, 169–174.
- Scandura, T. A. (1998). Dysfunctional mentoring relationships and outcomes. *Journal of Management*, **24**, 449–467.
- Sigelman, L., & Welch, S. (1993). The contact hypothesis revisited: Black–White interaction and positive racial attitudes. *Social Forces*, **71**, 781–795.
- Snyder, M. (1987). *Public appearances/private realities*. New York: Freeman.
- Stangor, C., Lynch, L., Duan, C., & Glass, B. (1992). Categorization of individuals on the basis of multiple social features. *Journal of Personality and Social Psychology*, **62**, 207–218.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7–22). Chicago: Nelson–Hall.
- Thomas, D. A. (1990). The impact of race on managers' experiences of developmental relationships (mentoring and sponsorship): An intra-organizational study. *Journal of Organizational Behavior*, **11**, 479–492.
- Thomas, D. A. (1993). Racial dynamics in cross-race developmental relationships. *Administrative Science Quarterly*, **38**, 169–194.
- Tsui, A. S., & O'Reilly, C. A., III. (1989). Beyond simple demographic effects: The importance of relational demography in superior–subordinate dyads. *Academy of Management Journal*, **32**, 402–423.
- Tsui, A. S., Xin, K. R., & Egan, T. D. (1995). Relational demography: The missing link in vertical dyad linkage. In S. E. Jackson & M. N. Ruderman (Eds.), *Diversity in work teams* (pp. 97–129). Washington, DC: American Psychological Association.
- Turban, D. B., & Dougherty, T. W. (1994). Role of protégé personality in receipt of mentoring and career success. *Academy of Management Journal*, **37**, 688–702.

- Turban, D. B., & Jones, A. P. (1988). Supervisor-subordinate similarity: Types, effects, and mechanisms. *Journal of Applied Psychology*, **73**, 228-234.
- Van Dyne, L. (1996). Mentoring relationships: A comparison of experiences in business and academia. In P. J. Frost & M. S. Taylor (Eds.), *Rhythms of academic life: Personal accounts of careers in academia* (pp. 159-163). Thousand Oaks, CA: Sage.
- Waldman, D. A., & Avolio, B. J. (1991). Race effects in performance evaluations: Controlling for ability, education, and experience. *Journal of Applied Psychology*, **76**, 897-901.
- Watson, W. E., Kumar, K., & Michaelsen, L. K. (1993). Cultural diversity's impact on interaction process and performance: Comparing homogeneous and diverse task groups. *Academy of Management Journal*, **36**, 590-602.
- Whitely, W., Dougherty, T. W., & Dreher, G. F. (1991). Relationship of career mentoring and socioeconomic origin to managers' and professionals' early career success. *Academy of Management Journal*, **34**, 331-351.
- Wilde, J. B., & Schau, C. G. (1991). Mentoring in graduate schools of education: Mentees' perceptions. *Journal of Experimental Education*, **59**, 165-179.
- Williams, K. Y., & O'Reilly, C. A., III. (1998). Demography and diversity in organizations: A review of 40 years of research. *Research in Organizational Behavior*, **20**, 77-140.

Received February 22, 2001