

# Ties that Bind? Race and Networks in Job Turnover

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*This article seeks to clarify the role of race and social networks in job turnover. Analyses using the personnel records of roughly 300 entry level workers in a private organization investigate the extent to which social networks in the job attainment process affect turnover. Specifically, I examine what occurs when the social network contact is from inside versus outside of the company, when the contact is white or minority, and when a contact and applicant share a race or when they do not. Referrals from current employee contacts reduce voluntary turnover while referrals from nonemployees do not provide a turnover advantage. White and minority contacts yield similar levels of job turnover and both generate lower levels of turnover than noncontacts, a finding that lends partial support to social capital theory. Finally, I find modest support for homophily theory; compared to race-mismatched contact-applicant dyads, race-matched dyads have lower levels of voluntary turnover but similar levels of involuntary turnover. The results illustrate the lasting effects of race-based social networks. I propose suggestions for designing research that can further our understanding of the mechanisms allegedly at work in the race, social network, and job turnover relationship. Keywords: homophily theory, job turnover, race, social capital theory, social networks.*

In recent years, major advances in the literature on race and labor market networks have involved discussions of the effects of race-based social networks on job-finding (Braddock and McPartland 1987; Elliott 1999, 2000, 2001; Elliott and Sims 2001; Fernandez and Fernandez-Mateo 2006; Mouw 2003; Newman 1999; Royster 2003; Wilson 1996) and pay outcomes (Aguilera and Massey 2003; Bridges and Villemez 1986; Elliott 1999; Elliott and Sims 2001; Falcón 1995; Green, Tigges, and Diaz 1999; Mier and Golith 1985; Seidel, Polzer, and Stewart 2000).<sup>1</sup> With some exceptions, researchers have given insufficient consideration to the role of race-based networks and job turnover. Rather than view turnover as a function of social networks, most research views job turnover as a function of external labor market factors (e.g., unemployment rates) and job factors (e.g., pay) (Blau and Kahn 1981; Merrilees 1981; Simon and Warner 1992; for an exception, see Aguilera 2003). So while we know the general importance of race-based social networks for understanding race inequality in job attainment and pay, we know little about the influence of race-based networks on job turnover.

This gap in knowledge is surprising given that social network ties can affect job turnover. For example, voluntary turnover can occur when workers are not socially integrated at work (Sørensen 2004). Involuntary turnover is partly a function of a worker's poor job performance or limited knowledge of job expectations and poor employer-worker communication.

1. By race-based social networks, I mean social networks that account for the race of one or both of the network participants.

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Network ties have the potential to reduce these problems by facilitating worker-manager relationships, disseminating norms of appropriate job behavior, and providing the basis for friendship ties at work.

The role of race and social networks in job turnover has broader implications for workplace inequality because racial segregation stems from who enters *and* who leaves a workplace. Thus, a focus on the latter can inform policies meant to reduce segregation. For example, if workers leave a workplace because they lack post-hire access to workplace resources, policies that ensure one race does not control access to resources and, in turn, distribute them to their generally same-race network ties can lower segregation. Turnover may stem from the lack of workplace friendship ties like those that typically form between individuals who share a race or ethnicity. If this is the case, programs that foster friendship ties between workers of all races can reduce turnover and lower segregation. On the other hand, if job turnover is independent of the race of the network dyad, policies to curb segregation may need to focus their attention on the post-hire dynamics between employers and workers.

With these matters in mind, the purpose of this article is to consider the combined role of race and social networks in job turnover. I study a research setting that is well suited for identifying and empirically testing the relationship between race-based networks and turnover. Within this setting, I analyze unique data on voluntary and involuntary turnover among white and minority workers in an entry level position over a 32-month period. Analyses address three questions: (1) How do social networks in general affect job turnover?; (2) To what extent do social network ties operate differently for white and minority contacts?; and (3) How does the race of both social network participants—contacts and their applicants—affect job turnover?

The answers to these research questions have empirical implications for how we study the social network-job turnover link and theoretical implications for understanding how social networks maintain workplace racial segregation. Because this is one of only a few studies to explicitly examine the link between race-based networks and job turnover, it also serves as a guide for designing broader-focused research that can identify the mechanisms alleged to be at work at the intersection of social networks and race in the labor market.

In the sections that follow, I briefly review research examining the effects of race-based social networks on job-finding and pay and the general effects of social networks on job turnover. Next I discuss two mechanisms that explain the predominant finding that social networks lower turnover. Following this I draw on social capital and homophily theories to bring into focus the connection between race, network factors, and job turnover. Results demonstrate that referrals from current employees reduce voluntary turnover while referrals from nonemployees do not provide a turnover advantage. White and minority contacts yield similar levels of job turnover, but both generate lower levels of turnover than noncontacts. Finally, race-matched contact-applicant dyads have lower levels of voluntary turnover than race-mismatched dyads, but matched and mismatched dyads have similar levels of involuntary turnover. I discuss the implications of results for our understanding of the racialized dynamics of social networks at work. In the conclusion I offer suggestions for designing research that can further our understanding of the intersection of race, social networks, and turnover.

## **Race and Social Networks in the Labor Market**

### ***Networks, Job-Finding, and Pay***

The concept of social networks has become increasingly central to researchers who study race and the labor market (Fernandez and Fernandez-Mateo 2006). A common organizational practice—employers' use of informal referrals from current employees and others outside of

the company to locate workers—provides key insight into the concept of social networks in the labor market. Broadly speaking, social networks affect hire outcomes and post-hire outcomes such as job reward, job performance, satisfaction, and turnover (for a review, see Granovetter 1995). Within this broad body of research on social networks are studies illustrating how race matters in the informal referral process. For example, researchers have studied how job seekers' and employers' informal referral use during the hiring process affects white and minority job attainment. Most recently, Roberto M. Fernandez and Isabella Fernandez-Mateo (2006) concluded that race-based networks did not encumber minority employment in the company they studied. Their conclusion stands in contrast to the research findings of Jomils H. Braddock and James M. McPartland (1987), James H. Johnson, Water C. Farrell, and Jennifer A. Stoloff (2000), Deirdre A. Royster (2003), and William J. Wilson (1996) who all found that network referrals use in the job search process limits minorities' job prospects.

Others have studied the extent to which race-based referrals affect pay outcomes. Findings from this body of work are also mixed. Some found that minority contacts lower the annual earnings of black, Latino, and Asians under certain conditions and in particular settings (Elliott 1999; Elliott and Sims 2001; Falcón 1995; Falcón and Melendez 2001; Green, Tigges, and Diaz 1999; Korenman and Turner 1996; Mier and Giloth 1985). Marc-David L. Seidel, Jeffrey T. Polzer, and Katherine J. Stewart (2000) found that social network use increased the earnings of high technology workers and that social network ties could fully explain the negative association between minority status and salary increase. Some found an association between weak social ties and higher earnings for white women, black men, and Latino men relative to white men (Smith 2005) and for undocumented and documented Mexican migrants (Aguilera and Massey 2003). Despite discrepant findings and regardless of the setting, the two bodies of research point to the significance of race-based social networks in the labor market.

### *Networks and Job Turnover*

A brief review of the research on the effects of informal referral networks on job turnover highlights the advantages of referrals over nonreferrals. To begin, workers who obtained their jobs through an informal social network tie had lower involuntary and voluntary job turnover than those who obtained their jobs via other means (Coverdill 1998; Datcher 1983; Kirnan, Farley, and Geisinger 1989; Sicilian 1995; Simon and Warner 1992). Emilio J. Castilla (2005) found higher rates of turnover among referred call center employees whose referrer left the company than among referrals whose referrer stayed. Finally, Katherine Neckerman and Roberto M. Fernandez (2003) found no difference in turnover rates between referrals and nonreferrals, but that "claimed" network referrals, those whose contact filed paperwork with the employee referral program in the hopes of collecting a referral bonus, had lower turnover than "unclaimed" referrals and nonreferrals.

Researchers have theorized a number of mechanisms to explain the predominant finding that social networks generate lower turnover (e.g., Coverdill 1998; Fernandez, Castilla, and Moore 2000). Two mechanisms provide key insight into this process: (1) the information mechanism, and (2) the social enrichment mechanism. Regarding the former, researchers have argued that referrals should have lower turnover than nonreferrals because personal networks transmit information that improves worker-job match quality (Neckerman and Fernandez 2003), including information that does not necessarily circulate through formal channels (Powell and Smith-Doerr 1994). With respect to the latter mechanism, referral hiring can improve the post-hire experiences of referrals because referring employees ease new workers' transition to the job; they mentor new workers, give them social support, feedback, advice, and informally train them (Coverdill 1998; Fernandez et al. 2000). Accordingly, compared to nonreferrals, referrals tend to be socialized faster, better trained, more fully integrated

at work, and have a more positive work attitude, all of which minimize turnover (Castilla 2005; Reichers 1987). Drawing on this body of literature, I hypothesize:

*Hypothesis 1:* Network referrals will yield lower turnover than noncontact recruitment methods.

### **“Racialized” Social Networks and Job Turnover**

For the most part, the job turnover literature is silent on the racial composition of the contact-applicant dyad, yet two major theories—social capital and homophily theory—shed light on why a specific focus on the racial composition of members of the referral network is necessary, especially when studying job turnover. I discuss these theories below and begin with the premise that the social setting in which network connections take place will affect the extent to which the theories hold true. The theories are most applicable in the “typical” work setting, one in which race/ethnic minorities are a numerical minority (Reskin, McBrier, and Kmec 1999) and whites are in positions of decision-making power (Smith 2002). In the conclusion, I speculate how social networks might operate differently across settings.

#### ***Social Capital Theory***

Differences in the activation of social ties and access to workplace resources because of one’s race/ethnicity offer insight into how workplace social networks may not operate the same for white and minority contacts (Lin 2001; Newman 1999; Smith 2005).

*Social Capital Activation.* Ordinarily a job seeker with an inside contact mentions that name as a way to “score points” with the employer and typically the applicant can count on the employee contact to be a trustworthy “gatekeeper” on his or her behalf (Kasinitz and Rosenberg 1996). A job seeker’s ability to count on this assistance depends on the race of their contact because job contacts perceive that their race matters in the referral process. For example, black men in Royster’s (2003) study told their referrals to downplay their social connections within the company whereas white contacts told their referrals to explicitly mention them. Similarly, the black men in Susan S. Smith’s (2005) study passed along information about job openings to other job seekers but specifically asked the job seeker *not* to mention the social tie between them. The men in both settings explained that by distancing themselves from job applicants, they could avoid harm to their reputation (and possible job loss) if their referral performed poorly. Some minority workers in Katherine Newman’s (1999) and Smith’s (2005) samples were so fearful of tarnishing their reputations with a bad referral that they sometimes denied job-seeking assistance to job seekers in their social network. Other times, the low income black workers in Smith’s (2005) study passed along faulty information about job openings to applicants who they viewed as “unworthy” of the job. White men in these settings who offered referrals did not fear stigmatization nor did they worry about paying a high “price” if they offered a “bad” referral so they were more likely to align themselves with their referral once hired. The contact-applicant distancing between minority contacts and their referrals is likely to continue post-hire, even if in the short term, while the referral “proves” his or her job ability.<sup>2</sup> Thus, a worker referred by a minority may fail to receive invaluable early interaction with his or her contact.

2. Of course, once a contact can observe his or her referral’s job performance, the fear of reputation harm and distancing would dissipate if the referral performed well but distancing would continue if the referral performed poorly. Since some contacts will change their behavior toward their referral based on his or her job performance, the effect of this process for minorities magnifies the importance of the initial match which I cannot observe with these data. Consequently, I can only provide a conservative test of this distancing process.

*Resource Access.* White and minority contacts also have different access to resources at work. Workplace race segregation separates whites into positions of greater workplace power and authority than minorities (Smith 2002). As a result, whites have greater access to influential coworkers and are better able to mobilize decision-making networks at work than minorities. Connections to influential coworkers serve one especially well post-hire because ties to those in power can help a worker avoid bureaucratic red tape, connect a worker to high-level people within the company, and help a worker gain recognition and promotion (McGuire 1999).

According to social capital theory, the underlying mechanisms that reduce turnover are the post-hire access to workplace resources and connections that stem from being referred. Because whites do not fear losing their job if they provide a poor referral and they tend to have access to workplace information, advice, and resources, white contacts are better able to pass on such benefits to their applicants compared to minority contacts. Consequently, workers referred by whites should be well connected—a factor that translates into lower turnover. Keeping in mind the idea that some contact with an employee is still better than none, I hypothesize:

*Hypothesis 2:* Regardless of their race, workers referred by a white contact will have the lowest turnover levels. Minority contacts will generate the second lowest levels of turnover. Noncontact recruitment methods will yield the highest levels of turnover.

### ***Homophily Theory***

Post-hire social enrichment may also reduce job turnover. Namely, a worker who is socially integrated at work may not be likely to quit or be fired. Homophily theory speaks to the social enrichment aspect of turnover and maintains that social similarity eases communication, fosters trust, and strengthens personal bonds (Kanter 1977; Lincoln and Miller 1979; McPherson, Smith-Lovin, and Cook 2001). In addition, the theory predicts that information transmitted between socially similar individuals differs in quality and content than information passed between dissimilar pairs. Consistent with homophily theory, researchers have found that compared to cross-race ties, same-race/ethnic ties tend to involve expressive ties that include the exchange of friendship and social support and enhance an individual's sense of workplace identity (Kram 1988; Mollica, Gray, and Treviño 2003; Shah and Dirks 2003; South et al. 1982). Same race/ethnic ties also provide individuals with the psychosocial support, confirmation, personal feedback, and the kind of friendships that tie people to work (Kram and Isabella 1985; Thomas and Gabarro 1999; South et al. 1982).

If race/ethnic homogeneity strengthens the bonds of social support and produces rich ties, which in turn facilitate the flow of information, cooperation, and commitment (Brass 1984; Jehn and Shah 1997), workers referred to their jobs by a contact who shares their race/ethnicity (contact-applicant race matching) should have the lowest levels of turnover.

Network ties between race-mismatched pairs also produce connections that can affect job turnover. The ties that form between race-mismatched pairs may be a conduit for the exchange of basic job information as opposed to the detailed job advice that often passes between members of the same race (Royster 2003). Thus, a worker with a network tie to someone outside of his or her race has some advantage in terms of job knowledge over someone without a network tie, but he or she does not have the same rich tie advantage that race matched pairs have.<sup>3</sup> In light of social network theory and what we know about the effects of network ties in the job turnover process, I hypothesize:

3. Liu and Duff (1972) offer a complementary interpretation of homophily theory. They explained that homophilous ties limit the transmission of new information but that heterophilous ties allow new ideas to enter homophilous networks. In this case, their theory implies that same-race ties will limit the amount of information exchanged between same race individuals but that a network tie with someone outside of one's race introduces new information into the exchange between race-matched dyads.

**Table 1 • Summary of Predicted Relationships**

<i>Hypothesized Relationships</i>	<i>Theory</i>	<i>Underlying Theoretical Mechanisms</i>
<i>H1</i> : Referrals will yield lower turnover than noncontact recruitment methods.	Social network theory	<ul style="list-style-type: none"> <li>• personal networks transmit information that improves worker-job match quality</li> <li>• contacts mentor referrals, give them social support, feedback, advice, and informally train them</li> <li>• referrals are socialized faster, better trained, and more integrated at work than non-referrals</li> </ul>
<i>H2</i> : Regardless of their race, workers referred by a white contact will have the lowest turnover levels. Minority contacts will generate the second lowest levels of turnover. Noncontact recruitment methods will yield the highest levels of turnover.	Social capital theory	<ul style="list-style-type: none"> <li>• because they do not suffer from reputation loss if they refer a poorly performing applicant, white contacts do not distance themselves from their referrals post-hire</li> <li>• white contacts have access to influential job ties and relevant job information</li> </ul>
<i>H3</i> : Regardless of the race of the pair, turnover will be the lowest when a contact and applicant share a race. Race-mismatched contact-applicant dyads will generate the second lowest levels of turnover. Noncontact recruitment methods will yield the highest levels of turnover.	Homophily theory	<ul style="list-style-type: none"> <li>• race-matched ties involve the exchange of expressive friendship ties that enrich an applicant's post-hire work experiences</li> <li>• friendship ties facilitate information flow, cooperation, and commitment</li> <li>• race-mismatched ties foster basic, instrumental ties that do not necessarily translate into the enrichment of work experiences or a rich information flow</li> </ul>

*Hypothesis 3*: Regardless of the race of the pair, turnover will be the lowest when a contact and applicant share a race. Race-mismatched contact-applicant dyads will generate the second lowest levels of turnover. Noncontact recruitment methods will yield the highest levels of turnover.

Table 1 summarizes the hypothesized relationships, the theories guiding the hypotheses, along with the alleged mechanisms linking race, social networks, and job turnover.

## Data and Methods

### *Research Setting*

I draw on data from the personnel records of one U.S. branch of a private, multi-site research firm (hereafter Resco). Businesses hire Resco to conduct survey research on a variety of topics. Resco is regulated by the Equal Employment Opportunity Commission (EEOC) and has an equal opportunity policy, an equal opportunity office, an affirmative action plan, as well as diversity training programs for management and employees. In addition, the company engages in formal, systematic hiring practices. The branch I study employs roughly 80 part-time and 30 full-time employees yearly. During the period I study, managers were, on average, predominantly male (67 percent) and white (60 percent). The hiring manager at the branch I study is a white female. Because of the wide range of the company's survey research specialty areas, they experience few to no "down times" (e.g., no slack times as contracts for surveys diminish) that would result in high levels of turnover.

The data I use track workers in the job of research associate (hereafter RA), Resco's main entry level job. The job of RA is primarily a part-time, hourly position. Despite its part-time status, the job of RA is on a ladder that leads to more permanent, higher-paying positions within the company. The primary task of RAs is to survey individuals over the telephone about a range of topics. The company requires that RAs have a high school degree or equivalent, superior reading skills, a polished vocabulary, and experience administering computerized surveys. New hires into the position receive paid training and must pass performance tests. I examine turnover among 283 RAs employed in the company between January 2002 and August 2004. During this time, 9 percent of RAs left Resco voluntarily and 8 percent were fired and the job was roughly 80 percent white.

The company has an economic incentive to keep RA turnover at a minimum; the human resource director of the company indicated that every year Resco spends an average of \$125,000 on RA recruitment, \$7,000 on RA screening, and an additional \$42,000 on RA training. RAs also have an incentive to work at Resco. First, the human resource director explained that the biggest draw of the job is its self-scheduling; as long as they work 20 hours per week, RAs determine their own weekly schedules. Second, because the company contracts with high-profile clients and has a respected national reputation, working there is a résumé builder. Third, during the period I study, the city in which Resco was located had an average unemployment rate of roughly 2.5 percent *more* than the state unemployment rate (Housing and Urban Development 2006), which suggests that opportunities for leaving Resco for another job in the local labor market were low. In fact, when they voluntarily left the company, Resco asked workers the main reason for their departure and only one RA in the sample identified "found another job" as a reason for his departure. Fourth, the company's human resource director noted that Resco's hourly pay rates for RA positions are higher than most other company's pay levels but can appear low relative to telemarketers, a somewhat comparable job, because telemarketers can earn commission and RAs cannot.

Resco is an ideal setting for answering my research question for several theoretical and practical reasons. First, Resco maintains a nearly complete database of RA job applicants and hires over 32 months—long enough to observe routine turnover. Second, this database contains information about the race and sex of the applicant, recorded by the company for purposes of annual reporting to the EEOC. In addition, it contains information on *how* an applicant contacted the company (e.g., in response to a newspaper advertisement, through an employment agency, through a referral from a current employee, etc.). Data on hires' demographic information and how they contacted the company over time are very rare, thus these data offer a glimpse of generally unobserved processes. Third, all RAs are required to have at least a high school degree and all receive the same amount of paid job training so the data thereby control for any differences in job training on turnover. Fourth, the data come from company records, which others have noted (e.g., Sicherman 1996), are a more accurate record of hire dates than individuals' responses.

### ***Dependent Variable***

The outcome of interest is job turnover. Specifically, the dependent variable is a combination of the observed duration until departure from Resco or censoring and an indicator of whether an RA exited Resco during the 32-month observation period. I model general turnover, but in addition, distinguish between involuntary (i.e., being fired) and voluntary exits (i.e., quitting). When Chi-square tests indicate that the coefficients are equal across involuntary and voluntary turnover events, I interpret the pooled turnover results. I acknowledge the possible variation in how truly "voluntary" turnover is. Some seemingly "voluntary" turnover could actually represent involuntary turnover if an RA quits a job they expect to be fired from (Dwyer 2004). As such, these data may understate the extent to which involuntary turnover occurs.

### ***Independent Variable: Recruitment Method***

Models include a dummy variable indicating how applicants first contacted Resco. Categories of this variable are as follows:

1. *Inside contact* denotes the use of a current employee contact. In some models I differentiate between race-matched inside contacts (i.e., white contact and white applicant, black contact and black applicant, Hispanic contact and Hispanic applicant) and race-mismatched inside contacts (i.e., white contact and minority applicant, minority contact white applicant);
2. *Outside contact* denotes the use of a referral from someone *not* currently employed by the company. Included in this category of the dichotomous variable are those referred by friends, applicants referred by former employees, and individuals with a family tie to the company;
3. *Noncontact recruitment method* denotes use of a recruitment source that does not involve a personal contact. Included in this category of the dichotomous variable are: walk-in applicants, former workers who reapplied via walk-in; individuals who approached the company in response to a newspaper advertisement, through use of an employment coach, in response to a help wanted sign, in response to a job fair, an employment guide, a listing in the yellow pages, in response to a TV or Internet advertisement, those who used an employment agency, and who were referred by the Department of Labor, a community service agency, or school.

### ***Control Variables***

*Worker Demographics.* To control for potentially higher rates of turnover among women compared to men (Sicherman 1996), models include a dichotomous variable denoting a worker's sex (female = 1; male = 0). Models include dichotomous variables denoting worker's race/ethnicity: white (58 percent), black (27 percent), Hispanic (15 percent). I combined black and Hispanic RAs into one group called "minority" in regression analyses because differences between them were not statistically significant. Finally, I include a measure of worker age in years at the time of hire and its square term. To capture any differences in the effect of age on turnover for members of different race and sex groups, in supplementary analyses I allowed the effect of age to vary for women and men and whites and minorities. The effect of age on turnover is similar for whites and minorities and women and men so the final model excludes these age interactions.

*RA Level Upon Entry.* Applicants can apply for one of four RA levels, depending on their experience. Starting hourly pay varies across RA level in the following manner: RA1 (\$7.50), RA2 (\$8.00), RA3 (\$8.50), RA4 (\$9.00) (wages reported in 2002 dollars). Models include a dichotomous variable coded 1 if a worker joined Resco at the lowest RA level and 0 otherwise. Seventy-three percent of RAs entered at the first level (RA1). Including a continuous RA level variable in models in place of this dichotomous variable did not change substantive results. An interaction between age and level at entry was not significant in supplementary models.

### ***Methods of Analysis***

I estimate Cox proportional hazard models to investigate the effects of predictor variables on job turnover. Cox proportional hazard models are appropriate because many cases are right censored; workers could have left Resco after August 2004, the last date of observation in the data set, but I am unable to measure those exits (Allison 1995). To capture differences

in the effects of predictor variables on voluntary versus involuntary turnover when statistical tests indicate there is a difference in the types of turnover, I perform a competing risk analysis. Competing risks analysis allows for the possibility that the effects of covariates differ for voluntary and involuntary turnover (Allison 1995). Competing risks analysis is appropriate in this case because if a person is fired, they are no longer at risk of quitting; the two outcomes are competing risks. For example, if an employee quits in her seventh month, she is treated as experiencing the event in the seventh month in the analysis of voluntary turnover and she is censored at the seventh month in the analysis of involuntary turnover. Chi-square statistics suggests that the coefficients are not equal across some event types.<sup>4</sup>

I deleted 24 cases with missing data or ambiguously coded values of the dependent variable. I dropped an additional 33 cases missing on recruitment method, the primary independent variable of interest.<sup>5</sup> I also dropped 28 RAs who were referred by an insider whose race was unknown.<sup>6</sup> Because data are missing due mainly to record keeping error, I have reason to suspect they are missing at random.

### *Models*

In all models, the reference category for the set of recruitment variables is a “noncontact” recruit—someone who joined Resco through any method that did not involve a network contact. To accurately test my hypotheses, I also perform statistical tests to determine if categories of the recruitment variable dummy variables differ significantly from one another. To address my first research question—“How do social networks in general affect job turnover?”—the first model includes worker characteristics (race, sex, age, RA level at entry) and separate dichotomous variables for: (1) inside contact, and (2) outside contact.

The second model tests the research question—“To what extent do social network ties operate differently for white and minority contacts?”—and includes worker characteristics and separate dichotomous variables denoting: (1) white contact, (2) minority contact, and (3) outside contact.

To test my third research question—“How does the race of both social network participants affect job turnover?”—the third model includes controls for worker characteristics and separate dichotomous variables for: (1) inside contact-applicant race match, (2) inside contact-applicant race mismatch, and (3) outside contact.

### *Study Design Limitations*

Before presenting results, a discussion of data limitations is warranted. Like most researchers, I cannot include specific information about what a contact did for his or her referral (e.g., acted as an intermediary between the employer and applicant, put in a “good word” for the applicant, etc.), or how a contact and applicant interacted post-hire.

4. To ensure that coefficient variation across different turnover types is not the result of random variation, I estimated three models: (1) pooled turnover, (2) voluntary turnover, and (3) involuntary turnover. I summed the values of the  $-2 \log$  likelihood for the voluntary and involuntary turnover models then subtracted the summed value from the value for the pooled turnover to generate a test statistic to test significance in model differences.

5. RAs missing values of the dependent variable were mainly female (63 percent), had an average age of 31, were overwhelmingly entry level (79 percent), and one-fifth were race/ethnic minorities. They were mostly recruited by outsiders (42 percent), followed by noncontact methods (24 percent) and race-matched insider referrals (21 percent). Of those with missing data on recruitment method, 58 percent were female, 40 percent minority, and their average age was 29. They were also mostly entry level RAs (63 percent). Since RA race and position upon entry are not related to voluntary or involuntary turnover, this missing data is not likely to significantly affect results. Likewise, since most RAs missing a turnover value were recruited by outsider referrals and outsider referrals do not affect turnover, these missing cases are not likely to significantly change results.

6. Including these 28 cases as a category of the primary independent variable did not affect substantive results. I omitted them because their inclusion in models complicates a test of contact-applicant race matching.

Consequently, a slope on the "inside referral" variable will represent an average effect across various conditions, some of which are likely to enhance post-hire outcomes and some of which will not (see Coverdill 1998). Data on the frequency of post-hire contact-applicant interactions, whether the pair worked in close proximity, or whether their interactions facilitated socialization would shed additional light on the mechanisms linking race, social networks, and turnover.

Data restrictions limit my analysis to entry level workers. Although social networks are especially relevant for turnover in entry level jobs where low extrinsic rewards may lead workers to seek social satisfaction through social connections on the job (Kanter 1977), social networks may matter differently for turnover in managerial or professional jobs. Pay or workplace authority may reduce the importance of social ties for affecting turnover among managerial or professional workers. Thus, social networks may be loosely connected to turnover among high-level workers.

Using data from a single company also restricts my ability to generalize the findings to other organizational settings, especially mixed race settings or ones where minorities are a numerical majority or they hold a majority of the high status positions. In such settings, it is possible that having a minority contact would yield lower turnover than having a white contact primarily because network patterns and resource access is different in contexts where members of a social minority are in the numerical majority (Ibarra 1993).

The data do not contain a record of applicants' employment history and credentials. If applicants with a history of turnover or brief job tenure are more likely to turnover than others, not controlling for employment history could affect the patterns I observe. In their analyses of entry level employee turnover in a bank, however, Neckerman and Fernandez (2003) found that only one (foreign language skills) of seven measures of applicant skill and credentials was related to turnover. Nor did information from entry level candidates' résumés in Castilla's (2005) study predict job tenure. Although the settings in these studies are different than the one I study, these findings suggest pre-hire skill may not be strongly related to turnover after controlling for other workplace attributes and worker demographic characteristics.

Finally, I only have access to data for one job and the job for which I have data is relatively low paying and predominantly part time. Data from multiple jobs could inform us how job features affect turnover. One of the benefits of this limitation, however, is that by comparing workers in the same job, the analyses control for job influences on turnover.

Despite these limitations, the data are well suited for studying the relevance of contact and applicant race in the referral hiring process and represent the best test to date of the relationship between race, social networks, and job turnover. To begin, access to private company data is rare, so these data offer a glimpse into normally concealed processes. The data set is also one of the few that distinguishes between involuntary and voluntary turnover and because the local unemployment rate is higher than the state average and the job in question is desirable for its flexible scheduling, voluntary turnover (i.e., quitting) is especially indicative of an absence of workplace social support. Finally, the data set has reliable information on the race of both the referring employee and the applicant and the data span is 32 months, long enough time to observe a substantial level of turnover.

## Results

I present results of empirical analyses in four sections. The first section reports descriptive statistics by RA race. The second documents differences in turnover between RAs with inside contacts, outside contacts, and those who joined the company without personal contacts. The third section includes results from models that investigate whether social ties operate differently for white and minority contacts. Finally, in the fourth section I present results from analyses that distinguish between race-matched and race-mismatched contact-applicant dyads.

**Table 2 • Summary Statistics, Pooled Sample, and by Research Associate (RA) Race**

	All	White RA	Minority RA
Voluntary turnover	9%	4% <sup>***</sup>	15%
Involuntary turnover	8%	3% <sup>***</sup>	15%
Remained at Resco	83%	93% <sup>***</sup>	70%
<i>Recruitment Type</i>			
Race-matched inside contact	17%	25% <sup>***</sup>	6%
Race-mismatched inside contact	18%	4% <sup>***</sup>	35%
Outside contact	15%	15%	15%
Non-contact	52%	54%	48%
<i>Controls</i>			
Minority	44%	—	—
Female	66%	62%	70%
Age at hire	27.22 (13.36)	31.08 (14.50) <sup>***</sup>	22.27 (9.75)
Lowest RA level	72%	67% <sup>*</sup>	79%
	<i>n</i> = 283	<i>n</i> = 159	<i>n</i> = 124

Source: Resco personnel records

Notes: White-minority mean/percentage significantly different at <sup>\*</sup> $p < .05$  <sup>\*\*</sup> $p < .01$  <sup>\*\*\*</sup> $p < .001$  (two-tailed tests). Standard deviations in parentheses.

### Descriptive Results

In this setting, minority RAs were significantly more likely than white RAs to voluntarily turnover (15 percent versus 4 percent,  $p < .001$ ) and to involuntarily turnover (15 percent versus 3 percent,  $p < .001$ ). By the same token, significantly fewer minorities (70 percent) than whites (93 percent) remained with Resco in the observation period.

Given what we know about the employment recruitment process, insider referral hiring should be the most common recruitment method. Summary statistics in Table 2 illustrate that for workers hired at Resco, insider referral hires were neither the exception nor the norm.<sup>7</sup>

Noncontact methods were the most commonly used method by which the workers employed at Resco joined the company; 52 percent of RAs joined the company via noncontact means (the minority-white difference is not statistically significant). Seventeen percent of workers joined Resco through a race-matched inside contact. White and minority workers were referred by an employee who shares his or her race/ethnicity at significantly different rates; among whites, 25 percent were referred by an insider who shared his or her race (race match) compared to 6 percent of minorities ( $p < .001$ ). A race/ethnic contact-applicant mismatch occurred at different rates for white and minority RAs. White RAs were referred by a minority employee in 4 percent of cases whereas minority RAs were referred by a white employee in 35 percent of cases ( $p < .001$ ). Fifteen percent of workers joined the company via an outside referral.

Individual-level characteristics differed for minority and white RAs at the time of hire; whites were statistically significantly older than minorities (mean = 31 years old compared to 22 years old,  $p < .001$ ). In terms of starting RA levels, minorities were significantly more likely than whites to start at the lowest RA level ( $p < .05$ ). Thus, whites have a greater share of upper-level RA positions than minorities in the company.

7. Data limitations prevent me from identifying the race/ethnicity of individuals who applied but were not hired at Resco. Thus, I cannot claim to know anything about the recruitment process that generated the most white or minority applicants.

**Table 3 • Coefficients from Cox Regression Models Predicting Job Turnover, Inside and Outside Contacts**

	A Voluntary Turnover		B Involuntary Turnover		C Pooled Turnover	
	$\beta$	Hazard Ratio	$\beta$	Hazard Ratio	$\beta$	Hazard Ratio
<i>Recruitment Type</i> (ref: noncontact)						
Inside contact	-1.46** <sup>a</sup> (.56)	.23	-1.70** (.54)	.18	-1.56*** <sup>a</sup> (.39)	.21
Outside contact	.07 (.55)	1.07	-.31 (.65)	.73	-.28 (.42)	.76
<i>Controls</i>						
Female	-.33 (.49)	.72	-.42 (.48)	.66	-.38 (.34)	.68
Minority	.46 (.51)	1.58	.38 (.54)	1.46	.26 (.39)	1.30
Age at hire	-1.45*** (.37)	.23	-1.33*** (.28)	.27	-1.78*** (.29)	.17
Age squared	.02*** (.004)	1.02	ns	ns	.02*** (.003)	1.02
Lowest RA level at entry	-.33 (.50)	.72	1.02 (.67)	2.76	-.28 (.42)	.76
Likelihood Ratio $\chi^2$	59.00***		77.04***		131.43***	
Degrees of freedom	7		6		7	
<i>n</i>	278		278		278	
Number of events	22		22		44	
% censored	92%		92%		84%	

Source: Resco personnel records

Notes: <sup>a</sup>Inside and outside contact slopes significantly different,  $p < .05$ . Standard errors in parentheses.  
 $p < .10$  \* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$  (two-tailed tests)

### Referrals versus Noncontacts

Table 3 present results from Cox proportional hazard models that address how social networks in general affect job turnover.

Results in Column A and B consider voluntary turnover and involuntary turnover respectively, while Column C presents results from a model pooling both types of turnover. Chi-square tests indicate that the coefficients are *not* equal across involuntary and voluntary turnover so I interpret the two events separately. Turning first to voluntary turnover (Column A), RAs who joined Resco through a referral from an inside contact—a current employee—have lower voluntary turnover than those who joined by way of a noncontact method (the reference category), net of controls. At any given point in time, the hazard of voluntary turnover for those with an insider contact is only about 23 percent of the hazard for those recruited via a noncontact recruitment method. Outside contacts—contacts provided by nonemployees—provide no advantages with respect to turnover; RAs referred by outsiders have a similar hazard of voluntary turnover as noncontacts. A Wald chi-square test confirms that the slopes on outside and inside referrals are significantly different ( $p < .05$ ); workers with inside contacts have lower net voluntary turnover than those with outside contacts.

Women and men and minorities and whites have similar voluntary turnover hazards. The effect of RA age at hire on voluntary turnover is nonlinear; the older an RA is at the time of hire, the lower his or her hazard of voluntary turnover and this relationship decreases at an increasing rate. Finally, entry and non-entry level RAs have similar voluntary turnover hazards.

The patterns with respect to involuntary turnover are somewhat similar (see Column B). Compared to RAs who joined Resco via noncontact methods, those with an inside contact have a lower net hazard of involuntary turnover. At any given time, the net hazard for involuntary turnover among those with an inside contact is about 18 percent of the hazard of noncontacts. As with voluntary turnover, outside contacts provide no referral advantage. RAs that joined Resco through an outside contact have similar hazards of involuntary turnover as noncontacts. A Wald chi-square test indicates that the effect of outside versus inside contacts on involuntary turnover is *not* significantly different. Thus, for involuntary turnover, an inside contact does not provide a significant turnover advantage compared to outside contacts.

The findings with respect to RA sex, race, and status upon entry are similar to the voluntary turnover model. However, age at the time of hire has a negative, linear relationship to involuntary turnover; the older one is at the time of hire, the less likely she or he is to be fired.

### ***Contact Race***

In this section I discuss Cox proportional hazard models that examine how contact race affects job turnover. Table 4 reports results of a model that separates “inside contact” into two groups: (1) white contact, and (2) minority contact. Chi-square tests indicate that the coefficients are equal across involuntary and voluntary turnover events so I interpret the pooled turnover model (Column C).

Social capital theory suggests that having a white contact should yield the lowest levels of turnover, followed by a minority contact, and noncontact recruitment methods. For the pooled turnover model (Column C), Wald Chi-square tests confirm that the slopes for white and minority contacts are *not* significantly different. Thus, white contacts do *not* provide a turnover advantage over minority contacts; social network ties operate the same for white and minority contacts. However, both minority and white contacts yield lower turnover than noncontact recruitment methods. Net of controls, the hazard of turnover among an RA who joined Resco via referral from a minority (white) employee is roughly 13 (29) percent of the net hazard of turnover for those who joined Resco through a noncontact recruitment method.

The effect of RA age at hire is negative and non-linear; the older an RA is at the time of hire, the lower his or her hazard of turnover, but the relationship decreases at an increasing rate. The next question is whether contact-applicant race matching affects job turnover in a manner consistent with homophily theory.

### ***Contact-Applicant Race Matching***

In this section, I discuss Cox proportional hazard models that examine whether differentiating between race-matched and mismatched insider contacts provides additional information about job turnover. Table 5 presents results from Cox proportional hazard models using competing risks analysis with three categories of referral type: inside race-matched contacts, inside race-*mismatched* contacts, and outside contacts (reference category: noncontacts). Hypothesis 3 predicted that turnover will be the lowest when a contact and applicant share a race, race-mismatched contact-applicant dyads will generate the second lowest levels of turnover, and noncontact recruitment methods will yield the highest levels of turnover.

**Table 4 • Coefficients from Cox Regression Models Predicting Job Turnover, White and Minority Inside Contacts**

	A Voluntary Turnover		B Involuntary Turnover		C Pooled Turnover	
	$\beta$	Hazard Ratio	$\beta$	Hazard Ratio	$\beta$	Hazard Ratio
<i>Recruitment Type (ref: noncontact)</i>						
Minority inside contact	-2.08*	.13	-1.98*	.14	-2.04**	.13
	(1.05)		(.78)		(.63)	
White inside contact	-.73	.48	-1.48*	.23	-1.25**	.29
	(.59)		(.66)		(.45)	
Outside contact	.07	1.08	-.70	.50	-.28	.76
	(.54)		(.65)		(.42)	
<i>Controls</i>						
Female	-.20	.82	-.46	.63	-.44	.64
	(.47)		(.49)		(.35)	
Minority	.91	2.48	.46	1.59	.54	1.72
	(.50)		(.57)		(.38)	
Age at hire	-.30**	.74	-1.29***	.27	-1.73***	.18
	(.11)		(.28)		(.28)	
Age squared	ns	ns	ns	ns	.02***	1.02
					(.003)	
Lowest RA level at entry	-.56	.57	.99	2.70	.25	1.29
	(.48)		(.66)		(.39)	
Likelihood Ratio $\chi^2$	40.14***		77.34***		132.80***	
Degrees of freedom	7		7		8	
N	278		278		278	
Number of events	22		22		44	
% censored	92%		92%		84%	

Source: Resco personnel records

Note: Standard errors in parentheses.

$p < .10$  \* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$  (two-tailed tests)

Chi-square tests indicate that the coefficients are not equal across turnover events, so I interpret the voluntary (Column A) and involuntary turnover (Column B) models separately. There is not enough evidence to suggest that separating inside contacts into race-matched versus mismatched dummy variables improves the overall model fit, but the effects are in the expected direction. Turning first to the voluntary turnover model, Wald chi-square tests confirm that the slopes for race-mismatched and race-matched contact-applicant dyad are statistically different, although the difference is only marginally significant ( $p < .10$ ). Results demonstrate that race-matched contact-applicant dyads generate significantly lower voluntary turnover than mismatched dyads. Net of controls, the hazard of voluntary turnover among RAs who joined Resco via referral from someone who shared their race is roughly 10 percent of the hazard of turnover for those who joined Resco through a noncontact recruitment method. The net voluntary turnover hazard among RAs who were referred by someone outside of their race group is no different than turnover among those who joined Resco through a noncontact method.

Turning now to the involuntary turnover output in Column B, race-matched and race-mismatched inside contacts generate similar levels of involuntary turnover; the slopes are not significantly different. Contrary to expectations, the net involuntary turnover hazard among

**Table 5 • Coefficients from Cox Regression Models Predicting Job Turnover, Contact-Applicant Race Matching and Mismatching**

	A Voluntary Turnover		B Involuntary Turnover		C Pooled Turnover	
	$\beta$	Hazard Ratio	$\beta$	Hazard Ratio	$\beta$	Hazard Ratio
<i>Recruitment Type (ref: noncontact)</i>						
Race-matched inside contact	-2.32 <sup>l, a</sup> (1.28)	.10	-1.34 (.87)	.26	-2.06 <sup>*</sup> (.86)	.13
Race-mismatched inside contact	-.74 (.56)	.48	-1.71 <sup>†</sup> (.72)	.18	-.99 <sup>†</sup> (.58)	.37
Outside contact	.13 (.55)	1.14	-.72 (.65)	.49	-.29 (.42)	.75
<i>Controls</i>						
Female	-.27 (.49)	.76	-.42 (.48)	.66	-.37 (.34)	.69
Minority	.55 (.62)	1.73	.55 (.62)	1.73	.31 (.40)	1.36
Age at hire	-1.43 <sup>***</sup> (.34)	.24	-1.31 <sup>***</sup> (.28)	.27	-1.79 <sup>***</sup> (.29)	.17
Age squared	.02 <sup>***</sup> (.004)	1.02	ns	ns	.02 <sup>***</sup> (.003)	1.02
Lowest RA level at entry	-.30 (.49)	.74	1.03 (.66)	2.79	.26 (.39)	1.30
Likelihood Ratio $\chi^2$	59.44 <sup>***</sup>		78.96 <sup>***</sup>		132.18 <sup>***</sup>	
Degrees of freedom	8		7		8	
<i>n</i>	278		278		278	
Number of events	22		22		44	
% censored	92%		92%		84%	

Source: Resco personnel records

Notes: <sup>a</sup>Race-matched and mismatched contact slopes significantly different,  $p < .10$ . Standard errors in parentheses.  $p < .10$  <sup>\*</sup> $p < .05$  <sup>\*\*</sup> $p < .01$  <sup>\*\*\*</sup> $p < .001$  (two-tailed tests)

RAs who were referred by someone outside of their race group is roughly 18 percent of the hazard of involuntary turnover for those who were joined Resco through a noncontact method.

For both the involuntary and voluntary turnover outcomes, women and men and white and minority RAs have similar levels of turnover as do entry and nonentry level workers. The effect of age at the time of hire on both types of turnover is negative but for voluntary turnover, the effect is nonlinear; the older an RA is at the time of hire, the lower his or her hazard of turnover and this relationship decreases at an increasing rate.

## Discussion and Conclusions

This article sought to investigate the role of race and social networks in job turnover and confirmed that the impact of contact-applicant social network ties in the recruitment stage extend beyond this initial employment stage to affect post-hire dynamics. Within the limits of the design of this study I draw three main conclusions. First, referrals from current workers (inside contacts) yield lower voluntary job turnover than nonemployee contacts and noncontact

recruitment methods, but referrals from nonemployees do not provide a turnover advantage. Second, at least in this setting, white and minority contacts' social networks have a similar effect on the turnover levels of their referrals. Third, contact-applicant race matching yields marginally significantly lower voluntary—but not involuntary—turnover than race mismatching and noncontact recruitment methods. I elaborate on these conclusions below and suggest designs for broader-focused research that might identify the mechanisms alleged to be at work at the intersection of race, social networks, and the labor market.

### *Inside versus Outside Contacts*

The findings reported in Table 3 are consistent with previous research demonstrating that informal networks yield lower voluntary and involuntary turnover than noncontact methods. However, only one kind of informal network—a network connection with a current employee or what I call an inside contact—provides a turnover advantage. Outside contacts do not yield lower turnover than noncontact methods. Likewise, inside contacts have the same effect on involuntary turnover as outside contacts.

Current employees have an advantage over outsiders in that once their referrals are hired, they can informally train them, serve as their mentor, and provide them with a social connection in the workplace. Because voluntary turnover is related to a lack of social ties, it stands to reason that inside contacts, but not outside ones, lower voluntary turnover. However, what matters for avoiding being fired is merely having a contact, not necessarily a current employee contact. The finding with regard to involuntary turnover may be a function of *who* provides the outside contact. In this sample, 69 percent of outside contacts came from friends. In supplementary analyses, I separated the outside contact measure into “friend provided the contact” versus “other outside contact” to test the possibility that friend referrals provide an advantage over other sources of outside referrals; workers may not want to disappoint the friend who provided the referral so they perform in ways that reduce their chances of being fired. I found no difference between the effect of having a friend as an outside contact, inside contact, and other outside contact. Of course, I interpret these supplementary results with caution because only 29 applicants were referred by a friend outside the company.

This is one of the first set of analyses to distinguish between contacts from inside and outside a company (for an exception, see Datcher 1983) and doing so is important for two reasons. First, since inside and outside contacts have different effects on turnover, combining the two as others have done (e.g., Coverdill 1998; Kirnan et al. 1989; Sicilian 1995) understates the extent to which network contacts affect turnover. Second, separating the two types of contacts helps in identifying the underlying mechanisms linking networks and turnover. The results hint that the referral effect may be about social enrichment; inside ties can provide the post-hire social support and enrichment that effectively reduced workers' quitting behavior. At the same time, the referral effect may enhance the exchange of information because inside ties can provide more realistic information about a job's requirements and whether an applicant “fits” the job. Future research is necessary to sort out which of these possible mechanisms is the more salient one.

### *Race and Social Network Operation Across Race*

Social capital theory implies that regardless of the race of their referral, having a white contact will lead to lower turnover because white contacts may not distance themselves from their applicants post-hire and they tend to have greater access to influential job ties than minorities (Royster 2003; Smith 2005). In this setting, white and minority contacts generated a similar level of job turnover and both yielded lower turnover rates than noncontact

recruitment methods. What appears to matter most, then, is whether an applicant had *any* inside contact.

Although this finding is inconsistent with social capital theory, it is not beyond explanation. In fact, the finding with regard to white and minority contacts hints at the possibility of employers' unequal treatment of minorities and whites. The similarity in effect on turnover of white and minority inside contacts may indicate that employers' standards of what constitutes an "acceptable" applicant varies according to the race of the employee providing the referral. That is, employers may hold referrals provided by minorities to a tougher standard than referrals provided by whites. In her study of the blue-collar job attainment process, Royster (2003) observed that employers accepted applicants with little or no training from white referrers but tended to only accept applicants with extensive training or expertise from black referrers. Likewise, employers in her study typically hired whites' contacts without an interview whereas they almost always interviewed minority men with (minority) contacts. If employers hold the contacts of minority workers to a tougher standard than those of white workers, workers with a minority contact may be better, on average, than those with white contacts and turnover less often.

Alternatively, a selectivity issue may operate when it comes to minority contact use. Due to past negative reactions from their employers, minority contacts believe they may lose their job or the trust of their employer if they provide a bad referral (Newman 1999; Royster 2003; Smith 2005). Consequently, they may have inflated standards for applicants and only refer exceptional workers. Compared to those referred by whites then, applicants referred by minority contacts may perform better, on average, and have lower turnover.

Finally, the similarity in turnover generated by white and minority contacts may be an artifact of the data. The job I observe—research associate (RA)—is relatively low paying and mostly part time. In addition, a majority of RAs receive their inside referral from other RAs. Thus, most workers are being referred by current employees in low-status positions. The positive effect of having a white contact predicted by social capital theory may be more pronounced in high-status, high-paying jobs. Even when they occupy high levels, race/ethnic minorities may have less authority than their white counterparts (see Smith 2002) so at higher organizational levels, the resources available to whites may be much better than those available to minorities. If this is the case, a white contact would be a greater benefit to his or her referral than a minority contact. Whatever the underlying mechanism—different standards for referrals provided by white versus minority contacts, selection bias on part of minority contacts, or a paucity of access to workplace resources to those in low-status jobs—the findings from this set of analyses connote an underlying difference in the workplace experiences of whites and minorities.

### ***Contact-Applicant Race Matching***

Based on homophily theory and the importance of network contacts in general, Hypothesis 3 predicted that race-matched dyads would generate the lowest turnover followed by race-mismatched dyads and noncontacts. Results in Table 5 provide limited support for the homophily hypothesis; contact-applicant race-matching generated lower voluntary turnover than both noncontact recruitment methods and race-mismatched dyads. However, the statistical evidence was not strong enough to suggest that contact-applicant race matching has a significantly different effect on involuntary turnover than race mismatching. The similar effects of contact-applicant race matching and mismatching on involuntary turnover is indicative of an alternative mechanism linking race, social networks, and turnover: tie strength. Mark Granovetter (1995) argued that weak ties, those between acquaintances as opposed to close friends or family, tend to transmit nonredundant job information. Thus, expanding network interactions outside of one's race group can broaden workers' access to information

about the workplace.<sup>8</sup> In this setting, weak ties may transmit basic workplace advice (e.g., how to complete a task), which may lower involuntary turnover as opposed to strong friendship ties that reduce voluntary turnover. Without direct measures of the content of contact-applicant tie exchanges or tie strength I cannot test this alternative explanation. From this final set of analyses I conclude that although informal referrals matter, it does not always matter whether the race of a contact and his or her applicant match.

To summarize, within the limits of the study design this study provides key insight into the maintenance of racial segregation at work. Namely, if workers referred by others like them in terms of race quit less often than workers who joined the company via other means, this stands to perpetuate segregation because of race/ethnic homophily in personal networks (McPherson et al. 2001). For example, if white workers referred by white contacts have low quit rates, these white workers will likely in turn refer other white applicants. To test this idea, data that span a longer period of time that also contain information on the race of applicants' contacts is necessary.

I conclude that race plays a role in the social network-job turnover relationship, mainly in the different post-hire treatment of white and minority employee contacts. Employers may treat referrals from whites and minorities differently and whites and minorities possibly have different expectations for how their assistance in providing referrals during their employers' applicant search will pan out. Contact-applicant race matching reduces voluntary turnover, possibly because within race ties generate social connections that serve to keep people from quitting their jobs.

### *Future Research*

Overall, this study offers several suggestions for future research on race, social networks, and job turnover. Most notably, analyses demonstrate that researchers must distinguish between inside and outside contacts. Nearly all previous work on turnover combines inside and outside contacts into one group (e.g., Kirnan et al. 1989; Sicilian 1995). This combination makes it difficult to distinguish a social enrichment mechanism from other possible underlying mechanisms because social enrichment cannot occur if the contact is outside the company; outside contacts cannot mentor, train, or provide connections to higher-ups within the company the same way that an inside contact can.

In some cases, the analyses demonstrated that the causes of quitting and being fired are different so distinguishing between the two types of turnover is crucial. Because of the different mechanisms that yield involuntary and voluntary turnover—involuntary turnover is partly due to lack of knowledge about work norms whereas voluntary turnover stems from lack of social ties at work—separating them enables researchers to distinguish possible mechanisms linking networks, race, and turnover. However, to learn more about race, networks, and turnover we need data with more specific information on the reason for turnover (e.g., a person was fired for poor work habits or they quit because they found a better job).

The analyses in this article look at only one dimension of contact-applicant similarity: race/ethnicity. Nonetheless, individuals assess their similarity to others on various dimensions, including sex and age. Because within most work organizations, women and minorities are overrepresented in lower status positions and both groups are segregated from white men who typically hold the most power (Ibarra 1993), we may observe different effects of social ties on turnover between race/ethnic minorities, white women, and white men. It is beyond

8. Elliott's (1999) research demonstrated that tie strength is trivial at the bottom of the occupational distribution. Since I study entry level workers, tie strength may not be as salient as the type of tie (expressive versus instrumental) exchanged between contacts and their referrals. Likewise, weak ties may be the most useful in locating a job whereas strong ties are necessary for forming relationships that affect turnover (Seidel et al. 2000).

the scope of these data to test race, sex, and age similarities or differences between a contact and applicant yet doing so in future work could point us to how social ties operate at work.

This study examines one job and one work setting. It is likely that in a more prestigious, high-paying job, the patterns I observe would be different. In higher status jobs, race/ethnic homophilous ties may be stronger than at lower levels because at higher levels, work involves greater challenge, risk, and uncertainty. In unpredictable situations, individuals seek to work with others like them because homophily purportedly eases communication and fosters trust and provides some certainty of behavior (Kanter 1977; Thomas and Gabarro 1999). Thus, contact-applicant race matching would yield even lower turnover in high status, high-paying jobs. It is also possible that the effect of social networks on turnover differ in contexts where members of a social minority are in the numerical majority (Ibarra 1993). In such settings, tie formation may differ. Future research should focus on jobs with a variety of pay and status levels and organizational settings with varied racial/ethnic compositions. We stand to gain a better understanding of the racial inequality that characterizes the workplace with closer attention to the influence of race-based social ties on job turnover.

## References

- Aguilera, Michael B. 2003. "The Impact of the Worker: How Social Capital and Human Capital Influence the Job Tenure of Formerly Undocumented Mexican Immigrants." *Sociological Inquiry* 73:52–83.
- Aguilera, Michael B. and Douglas S. Massey. 2003. "Social Capital and the Wages of Mexican Migrants: New Hypotheses and Tests." *Social Forces* 82:671–701.
- Allison, Paul D. 1995. *Survival Analysis Using the SAS System: A Practical Guide*. Cary, NC: SAS Institute.
- Blau, Francine and Lawrence M. Kahn. 1981. "Race and Sex Differences in Quits by Young Workers." *Industrial and Labor Relations Review* 24:563–77.
- Braddock, Jomils H. and James M. McPartland. 1987. "How Minorities Continue to Be Excluded from Equal Employment Opportunities: Research on Labor Market and Institutional Barriers." *Journal of Social Issues* 43:5–39.
- Brass, Daniel. 1984. "Being in the Right Place: A Structural Analysis of Individual Influence in an Organization." *Administrative Science Quarterly* 29:518–39.
- Bridges, William P. and Wayne J. Villemez. 1986. "Informal Hiring and Income in the Labor Market." *American Sociological Review* 51:574–82.
- Castilla, Emilio J. 2005. "Social Networks and Employee Performance in a Call Center." *American Journal of Sociology* 110:1288–1356.
- Coverdill, James E. 1998. "Personal Contacts and Post-Hire Job Outcomes: Theoretical and Empirical Notes on the Significance of Matching Methods." *Research in Social Stratification and Mobility* 16:247–69.
- Datcher, Linda. 1983. "The Impact of Informal Networks on Quit Behavior." *The Review of Economics and Statistics* 65:491–95.
- Dwyer, Rachel. 2004. "Downward Earnings Mobility after Voluntary Employer Exits." *Work and Occupations* 31:111–39.
- Elliott, James R. 1999. "Social Isolation and Labor Market Insulation: Network and Neighborhood Effects on Less-Educated Urban Workers." *The Sociological Quarterly* 40:199–216.
- . 2000. "Class, Race, and Job Matching in Contemporary Urban Labor Markets." *Social Science Quarterly* 81:1036–51.
- . 2001. "Referral Hiring and Ethnically Homogeneous Jobs: How Prevalent is the Connection and for Whom?" *Social Science Research* 30:401–25.
- Elliott, James R. and Mario Sims. 2001. "Ghettos and Barrios: The Impact of Neighborhood Ethnicity and Poverty on Job Matching among Blacks and Latinos." *Social Problems* 48: 341–61.
- Falcón, Luis M. 1995. "Social Networks and Employment for Latinos, Blacks, and Whites." *New England Journal of Public Policy* 11:17–28.
- Falcón, Luis M. and Edwin Melendez. 2001. "The Social Context of Job Searching for Racial Groups in Urban Centers." Pp. 341–71 in *Urban Inequality: Evidence from Four Cities*, edited by Alice O'Connor, Chris Tilly, and Lawrence Bobo. New York: Russell Sage.

- Fernandez, Roberto M., Emilio J. Castilla, and Paul Moore. 2000. "Social Capital at Work: Networks and Employment at a Phone Center." *American Journal of Sociology* 105:1288–356.
- Fernandez, Roberto M. and Isabel Fernandez-Mateo. 2006. "Networks, Race, and Hiring." *American Sociological Review* 71:42–71.
- Granovetter, Mark. 1995. *Getting a Job: A Study of Contacts and Careers*. 2d ed. Chicago: University of Chicago Press.
- Green, Gary P., Leann M. Tiggles, and Daniel Diaz. 1999. "Racial and Ethnic Differences in Job-Search Strategies in Atlanta, Boston, and Los Angeles." *Social Science Quarterly* 80:263–78.
- Housing and Urban Development. 2006. "OSCDs Current Labor Force Data." Retrieved August 25, 2006 (<http://socds.huduser.org/index.html>).
- Ibarra, Herminia. 1993. "Personal Networks of Women and Minorities in Management: A Conceptual Framework." *Academy of Management Review* 18:56–87.
- Jehn, K. A. and Priti P. Shah. 1997. "Interpersonal Relationship and Task Performance: An Examination of Mediating Processes in Friendship and Acquaintances Groups." *Administrative Science Quarterly* 44:741–63.
- Johnson, James H., Jr., Walter C. Farrell, and Jennifer A. Stoloff. 2000. "African American Males in Decline: A Los Angeles Case Study." Pp. 315–37 in *Prismatic Metropolis: Inequality in Los Angeles*, edited by Lawrence D. Bobo, Melvin L. Oliver, James H. Johnson, Jr., and Abel Valenzuela, Jr. New York: Russell Sage.
- Kanter, Rosabeth M. 1977. *Men and Women of the Corporation*. New York: Basic Books.
- Kasinitz, Philip and Jan Rosenberg. 1996. "Missing the Connection: Social Isolation and Employment on the Brooklyn Waterfront." *Social Problems* 43:180–96.
- Kirnan, J. P., J. A. Farley, and K. F. Geisinger. 1989. "The Relationship Between Recruiting Source, Applicant Quality, and Hire Performance: An Analysis by Sex, Ethnicity, and Age." *Personnel Psychology* 42:293–308.
- Korenman, Sanders and Susan C. Turner. 1996. "Employment Contacts and Minority-White Wage Differences." *Industrial Relations* 35:106–22.
- Kram, Kathy E. 1988. *Mentoring at Work: Developmental Relationships in Organizational Life*. New York: University Press of America.
- Kram, Kathy E. and Lynn A. Isabella. 1985. "Mentoring Alternatives: The Role of Peer Relationships in Career Development." *Academy of Management Journal* 28:110–32.
- Lin, Nan. 2001. *Social Capital: A Theory of Social Structure and Action*. Cambridge, UK: Cambridge University Press.
- Lincoln, James R. and Jon Miller. 1979. "Work and Friendship Ties in Organizations: A Comparative Analysis of Relational Networks." *Administrative Science Quarterly* 24:181–99.
- Liu, William T. and Robert W. Duff. 1972. "The Strength in Weak Ties." *Public Opinion Quarterly* 36:361–66.
- McGuire, Gail. 1999. "Do Race and Sex Affect Employees' Access to and Help From Mentors? Insights from the Study of a Large Corporation." Pp. 105–20 in *Mentoring Dilemmas: Developmental Relationships Within Multicultural Organizations*, edited by Faye Crosby, Robin Ely, and Audrey Murrell. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- McPherson, Miller, Lynn Smith-Lovin, and James M. Cook. 2001. "Birds of a Feather: Homophily in Social Networks." *Annual Review of Sociology* 27:415–44.
- Merrilees, William. 1981. "Interindustry Variations in Job Tenure." *Industrial Relations* 20:200–04.
- Mier, Robert and Robert Golith. 1985. "Hispanic Employment Opportunities: A Case of Internal Labor Markets and Weak-Tied Social Networks." *Social Science Quarterly* 66:296–309.
- Mollica, Kelly A., Barbara Gray, and Linda K. Treviño. 2003. "Racial Homophily and its Persistence in Newcomers' Social Networks." *Organization Science* 14:123–36.
- Mouw, Ted. 2003. "Social Capital and Finding a Job: Do Contacts Matter?" *American Sociological Review* 68:868–98.
- Neckerman, Katherine and Roberto M. Fernandez. 2003. "Keeping a Job: Network Hiring and Turnover in a Retail Bank." *Research in the Sociology of Organizations* 20:299–318.
- Newman, Katherine. 1999. *No Shame in My Game: The Working Poor in the Inner City*. New York: Knopf and Russell Sage.
- Powell, Walter and Laurel Smith-Doerr. 1994. "Networks in Economic Life." Pp. 379–402 in *Handbook of Economic Sociology*, edited by Neil Smelser and Richard Swedberg. Princeton, NJ: Princeton University Press.

- Reichers, A. E. 1987. "An Interactionist Perspective on Newcomer Socialization Rates." *Academy of Management Review* 12:278–87.
- Reskin, Barbara F., Debra B. McBrier, and Julie A. Kmec 1999. "The Determinants and Consequences of the Sex and Race Composition of Organizations." *Annual Review of Sociology* 25:335–61.
- Royster, Dierdre A. 2003. *Race and the Invisible Hand: How White Networks Exclude Black Men from Blue-Collar Jobs*. Berkeley: University of California Press.
- Seidel, Marc-David L., Jeffrey T. Polzer, and Katherine J. Stewart. 2000. "Friends in High Places: The Effects of Social Networks on Discrimination in Salary Negotiations." *Administrative Science Quarterly* 45:1–24.
- Shah, Priti Pradhan and Kurt T. Dirks. 2003. "The Social Structure of Diverse Groups: Integrating Social Categorization and Network Perspectives." *Research on Managing Groups and Teams* 5:113–33.
- Sicherman, Nachum. 1996. "Gender Differences in Departures From a Large Firm." *Industrial and Labor Relations Review* 49:484–505.
- Sicilian, Paul. 1995. "Employer Search and Worker-Firm Match Quality." *The Quarterly Review of Economics and Finance* 35:515–32.
- Simon, Curtis J., and John T. Warner. 1992. "Matchmaker, Matchmaker: The Effect of Old Boy Networks on Job Match Quality, Earnings, and Tenure." *Journal of Labor Economics* 10:306–30.
- Smith, Ryan A. 2002. "Race, Gender, and Authority in the Workplace: Theory and Research." *Annual Review of Sociology* 28:509–42.
- Smith, Susan S. 2005. "Don't Put My Name On It: Social Capital Activation and Job-Finding Assistance among the Back Urban Poor." *American Journal of Sociology* 111:1–57.
- Sørensen, Jesper B. 2004. "The Organizational Demography of Racial Employment Segregation." *American Journal of Sociology* 110:626–71.
- South, Scott J., Charles M. Bonjean, William T. Markham, and Judy Corder. 1982. "Social Structure and Intergroup Interaction: Men and Women of the Federal Bureaucracy." *American Sociological Review* 47:587–99.
- Thomas, David A. and John J. Gabarro. 1999. *Breaking Through: The Making of Minority Executives in Corporate America*. Boston: Harvard Business School Press.
- Wilson, William J. 1996. *When Work Disappears: The World of the New Urban Poor*. New York: Vintage Books.