

Networks, Race, and Hiring

It is common for scholars interested in race and poverty to invoke a lack of access to job networks as a reason why minorities face difficulties in the labor market (e.g., Royster 2003; Wilson 1996). Previous studies on this issue, however, have produced mixed results. Minorities have been found to be *more* likely to have obtained their job through networks than nonminorities (e.g., Elliott 1999). Yet, these jobs pay *less* than jobs obtained by other means (e.g., Falcon 1995). Rather than exclusion from white networks (e.g., Royster 2003), the emphasis in the literature has shifted to minorities' over-reliance on ethnic networks. Thus, the imagery that emerges from these studies is that minorities are stuck in the "wrong networks," that is, those that lead to low-wage jobs.

There is something slippery about the way these network arguments are currently being used, however. Because "wrong network" is defined in terms of the eventual outcome (a network is "good" if it leads to a good out-

come, otherwise, it is a "wrong network"), such explanations run the danger of circular reasoning. To give network accounts of minority underperformance analytical bite, we need to specify the mechanisms by which minorities are "excluded" from productive networks or "stuck" in unproductive ethnic networks.

We argue that being "stuck" in the "wrong network" can be produced by minority underrepresentation in *any* of a number of steps in the recruitment and hiring process. Using unique data from one employer, we illustrate the mechanisms by which minorities can be isolated from good job opportunities. To avoid circular reasoning, we form proper baselines of comparison using data on both networked and nonnetworked minorities and nonminorities at each stage of the hiring pipeline and identify the specific points in the process where network factors could lead minorities to have less access to these desirable jobs than nonminorities.

This is a commissioned chapter that draws heavily on material in a previous publication (Roberto M. Fernandez and Isabel Fernandez-Mateo, "Networks, Race, and Hiring," *American Sociological Review* 71 [2006], pp. 42–71).

Race and Networks in the Labor Market

A common argument in sociology is that jobs found through networks pay better and are of higher status than those found through formal channels (Lin 2002). Evidence on this issue, however, is mixed, especially for minority groups. Reingold (1999) suggests that social networks lead to racial insularity and contribute to the economic marginalization of minorities. However, since many of these studies analyze samples of job incumbents, they often suffer from causal ambiguity (do ties to higher status people cause superior labor market outcomes, or is it that people with superior labor market outcomes gain access to high-status people?). In order to avoid the causal ambiguity problem, a number of studies use samples of job seekers and examine the chances of obtaining employment for various search methods (e.g., Elliott 1999). Employer surveys (e.g., Holzer 1996) are an alternative way of studying this issue, by fleshing out the employer side of the hiring process.

Neither of these approaches, however, examines actual hiring processes and their role in social isolation from good jobs. Without baseline information on the presence or absence of social ties for the pool of competing applicants, some of whom are hired and others are not, it is impossible to identify the effect of social contacts on hiring *per se*. In order to address this issue, some authors have used single-firm screening studies (e.g., Fernandez, Castilla, and Moore 2000; Fernandez and Sosa 2005), but most of this research has not analyzed the role of race in hiring due to lack of appropriate data (a prominent exception is Petersen, Saporta, and Seidel 2000).

“Wrong Networks”

A key component of understanding whether minorities are cut off from employment op-

portunities is to understand why they may be underrepresented in networks that lead to *good* jobs. That is, in order to attribute logically the exclusion of minorities to the absence of network ties to good jobs, we would need to feel confident that minorities might plausibly have been hired except for the lack of the contact. It is critical to define the various processes whereby network factors could limit minorities' access to desirable jobs. In our conceptualization, the “wrong network” account is consistent with underrepresentation of minorities in any of a number of stages in the recruitment and hiring process. Figure 1 represents a conceptual map of the ways in which networks might affect the various stages. These are separated into two sets of processes, referring and screening.

The referral process may contribute to minorities' isolation either if there are no minority employees available to refer in the pool of workers (as in Kasinitz and Rosenberg's [1996] account), or if these employees are reluctant to pass on information about good jobs (see Smith 2005). Even if there are potential referrers who are willing to refer someone, minorities could still be cut off if these referrers were not to refer minority applicants (step 1c.). This could happen if job referral networks are less than perfectly homophilous by race (see Rubineau and Fernandez 2005). If all these conditions are met (steps 1a.–1c.), there will be a set of networked minority candidates in the applicant pool. At this point the screening stage on the demand side of the hiring interface begins.

The effect of screening processes on minorities' access to desirable jobs depends on the employer's attitude towards referrals. If firms prefer to recruit employee referrals (Fernandez, Castilla, and Moore 2000), they will tend to hire minority workers in proportion to their representation in the *networked* pool of applicants. In this case, minorities would thus be cut off from good jobs only if they are underrepresented in the networked applicant pool. However, if employers avoid

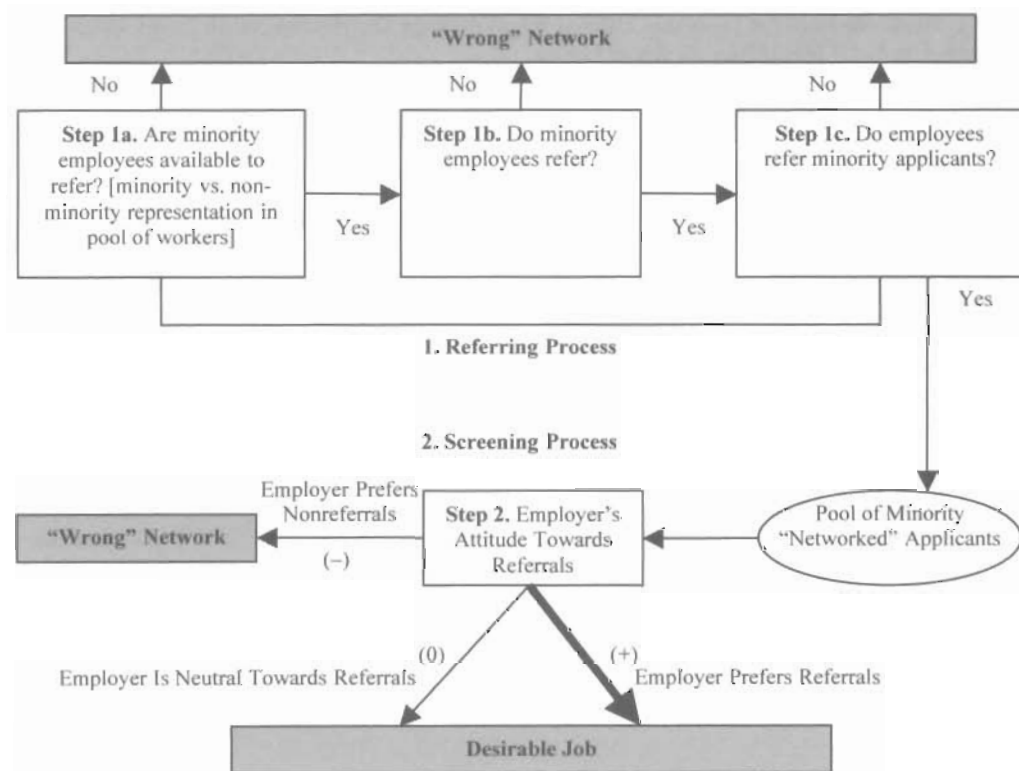


Figure 1. Steps in Network Processes that Connect Candidates to Jobs

hiring through networks (see Ullman, 1966), being well represented in the pool of referred applicants is bad news for minorities. Finally, if the employer is neutral toward hiring referrals, access to desirable jobs for minorities will be provided in step 2 (screening) in proportion to the *overall applicant pool*, as opposed to the *networked applicant pool*. In such case the employers' preferences would have no effect in cutting off minorities from desirable jobs.

Analyses

We illustrate these processes using unique data on employees working at one company site and trace their networks of job contacts to applicants for desirable entry-level jobs. Minorities account for 50 percent of employees at this site, with Asian Americans and Hispanics being the largest groups. We

collected all 2,065 paper applications to the plant's entry-level production jobs from September 1997 to November 30, 2000. We coded data on applicants' education, work history, and other human capital characteristics and geocoded candidates to the addresses they listed on the application form. Most importantly, and unusually, we have data on the applicants' race. All applicants must turn in their form in person, and when they do so the receptionist at the company (who is the same one for the whole period) records the applicant's apparent race and gender. Race is thus not self-identified as in most surveys and is well suited to our purposes of understanding the role of race in the screening process.

As mentioned above, in order to ensure that we are not misattributing the effect of networks to the effect of human capital factors, we must show that the candidates for these

Table 1. Percentile Ranks of Company Offered Wages in Wage Distribution of All Non-College Population in Local Metro Area By Racial Group

	<i>All Racial Groups</i>		<i>Non-Hispanic White</i>		<i>African American</i>	
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>
Starting Wages (N = 192)						
Hired 9/97–4/98						
8.3% (\$7.75)	25	35	18	30	27	37
Hired 5/98–11/00						
91.7% (\$8.05)	27	36	19	31	28	38
Wages after 90-Day Probation (N = 109)						
15.6% (\$8.05)	27	36	19	31	28	38
62.4% (\$8.50)	29	40	21	34	32	41
21.1% (\$10.05)	37	51	27	45	40	48
0.1% (\$10.35)	38	52	28	46	41	48
	<i>Hispanic</i>		<i>Asian American</i>		<i>All Minorities</i>	
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>
Starting Wages (N = 192)						
Hired 9/97–4/98						
8.3% (\$7.75)	35	43	32	39	33	41
Hired 5/98–11/00						
91.7% (\$8.05)	36	44	35	41	35	42
Wages after 90-Day Probation (N = 109)						
15.6% (\$8.05)	36	44	35	41	35	42
62.4% (\$8.50)	39	49	37	45	37	46
21.1% (\$10.05)	49	61	43	55	46	58
0.1% (\$10.35)	50	62	45	57	48	59

Source: Persons in the U.S. Census Bureau's 5 percent 2000 Public Use Micro Sample for the local metro area who are at least 15 years of age and have fewer than 16 years of education with positive wage and salary income in 1999. Data are weighted to reflect the population.

jobs might plausibly have been hired even without network ties. In this setting, it is clear that these entry-level jobs are within reach for people with modest education and labor force experience. The median years of education and experience for the people hired into these jobs are 12 and 7.9, respectively. Moreover, the local labor market was experiencing high rates of unemployment during the period (between 6.76 and 14.1 percent). Data from the local labor market (see Table 1) shows that the wages offered by the firm were attractive—particularly for females and minorities. Starting wages were \$7.75/hr for the first eight months of the study, and \$8.05 afterwards.

These wages fell in the 25th and 27th percentiles of the overall wage distribution for males in the area (35th and 36th percentiles for females). For whites, these starting wages fell in the 18th and 19th percentiles of the male wage distribution, while they were more attractive for minority males (27th and 28th percentiles for African Americans; 35th and 36th for Hispanics; 32nd and 35th for Asian Americans). The pattern is similar for females, although for them the wages are even more attractive than for males in every case. Furthermore, most hires receive pay raises after a 90-day probation period (to \$8.50, \$10.05, or \$10.35), which makes wages even more at-

Table 2. Racial and Gender Distributions of Workers Employed During Hiring Window (September, 1997–November, 2000), and Persons Employed in Metropolitan Area

	All Plant Employees ^a		Entry Level Employees Only		2000 PUMS ^b	
	<i>Female</i>	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>	<i>Male</i>
Non-Hispanic White	44.0	41.5	38.5	28.6	54.3	50.4
African American	3.1	5.9	3.1	5.6	5.0	4.0
Hispanic	28.7	24.9	30.1	28.6	29.8	35.3
Asian American	23.3	26.8	27.6	35.7	6.5	6.1
Native American	0.9	1.0	0.7	1.6	0.9	0.7
Other, Multirace	—	—	—	—	—	—
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total N	352	205	286	126	174838	208174

^aEach person is counted equally if they were employed at any time during hiring window (September 1, 1997–November 30, 2000).

^bPersons in the 5 percent 2000 PUMS who are at least 15 years of age and less than 16 years of education with positive wage and salary income in 1999. Data are weighted to reflect the population.

tractive. In fact, the top wage approaches the median of the wage distribution for white and African American women in the area and well exceeds the median for Hispanic and Asian American females.

Are Minority Employees Available to Refer?

In order to study the role of job-referral networks in the application process, we distinguish networked candidates using data from the original application forms. Employee referrals made up 30.2 percent of the applications for which we could identify recruitment source (2,556 out of 2,605). Using the company's employee database, we have been able to link referrers with their referral for 83.7 percent of the "employee referral" applications. For studying who among company employees produces referrals, we use the firm's personnel records. Five hundred fifty-seven workers were employed at the focal plant at any point over the study period, and for these we coded their self-identified race and gender.

We address step 1a in Figure 1 by studying the race and gender distribution of employees who could have produced referral applications during the period. For both genders, over half the workers are minorities (this percentage increases to over 60 percent for

entry-level employees). Relatively large percentages of Asian Americans and Hispanics, but more modest percentages of African Americans, are represented. Women make up 69.4 percent of entry-level workers, and they are overrepresented irrespective of race.

We also compare these race and gender distributions of workers with the composition of persons employed in the local area (Table 2). We find that white workers are underrepresented in this factory compared to their proportion in the area. Asian Americans, however, are extremely overrepresented. While they make up 6.1 percent of employed males in the local labor market, they account for 26.8 percent of male employees. Hispanics are slightly underrepresented (24.9 percent of employees, 35.3 percent in the area), while the percentages of African Americans employed at the factory are quite similar to their proportion in the area (5.9 versus 4.0 percent for males). In sum, minorities are definitely available to refer in this setting.

Do Minority Employees Refer?

Of the 557 employees, 200 of them originated a total of 580 applications. Asian Americans refer the most (50.9 percent of male Asian Americans originated at least one referral applicant). Interestingly, whites show

the lowest rates of producing referrals (27.7 percent for females and 18.8 percent for males). To determine whether background factors might account for the observed race differences in referral behavior, we estimate a set of negative binomial regressions (see Fernandez and Fernandez-Mateo 2006, Table 5). These models show that there are no significant gender differences in the counts of referrals originated by employees at the company. There are race differences, however, as minorities generate more referrals than whites (with Asian Americans producing the most). These effects remain even when adding the extensive controls for individual background mentioned above. Thus, at step 1b in Figure 1, we have no evidence that minorities are less likely than whites to produce referral applicants.

Do Minority Employees Refer Minority Applicants?

The simplest criterion to assess if this is a point of disconnection for minorities is whether there are any minorities at all produced by the referral process, irrespective of the race of the referrer. We analyze the race distribution of applicants produced by referrers of different racial backgrounds. We find that there is a strong relationship between the race of the referrer and the race of the referral applicant (for both genders). Most important, 61.8 percent of male and 57.2 percent of female referred applicants are minorities. Clearly, by this first criterion, minorities are not cut off at step 1c.

A more stringent criterion would be to assess whether the referral process is reproducing the racial distribution of the referring population (the 200 employees identified above). We find that whites are the most insular of the groups in referring (76.9 percent of the referrals produced by white employees are white). The percentage of African Americans and Asian Americans in the referral pool matches the percentage of the referring population quite closely (5.6 vs. 4.0 percent for

African Americans; 34.6 vs. 32.5 percent for Asian Americans). Hispanics, however, constitute a third of referrers, but only 19 percent of referrals. Hispanics, therefore, seem to be somehow cut off, in relative terms, from the networks leading to these jobs.

A final criterion depends on whether minorities refer minority applicants less than they refer white applicants. We find, however, that irrespective of which minority group one considers, the percentage referring whites is lower than the percentage referring minorities. By this final criterion, we find no evidence that a lack of racial homophily in minorities' referring patterns is weakening their access to this company. In sum, there is little evidence that minorities in this setting are cut off from the job networks that lead to employment at this company due to the behavior of the originators of referral networks (the "referring" process).

Hiring Interface

Even if networked minorities are well represented in the application pool, this does not necessarily mean that they will be similarly represented at subsequent stages of the screening process. This step depends on the employer's racial biases and attitudes towards referrals ("screening process" in Figure 1). Our fieldwork and interviews with HR managers at this site suggest that the employer has neither a strong preference nor distaste for referred applicants. We assembled data on all applicants for entry-level jobs and tracked their progress through the hiring pipeline (from application, to interview, to offer, to hire).

For females (see Figure 2a), there is little evidence of a preference for networked candidates (33.9 percent of female applicants and 35.3 percent of female hires were referrals). Also, the race distribution did not change much across stages. Similarly for males (Figure 2b), the percentage of networked applicants does not increase across the various stages of the screening process. If

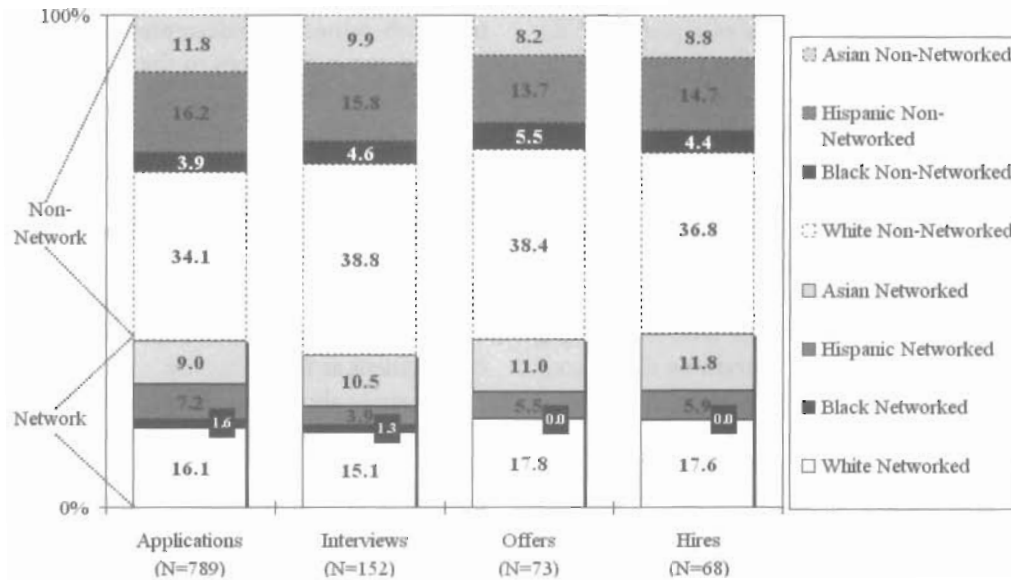


Figure 2a. Female Hiring Interface

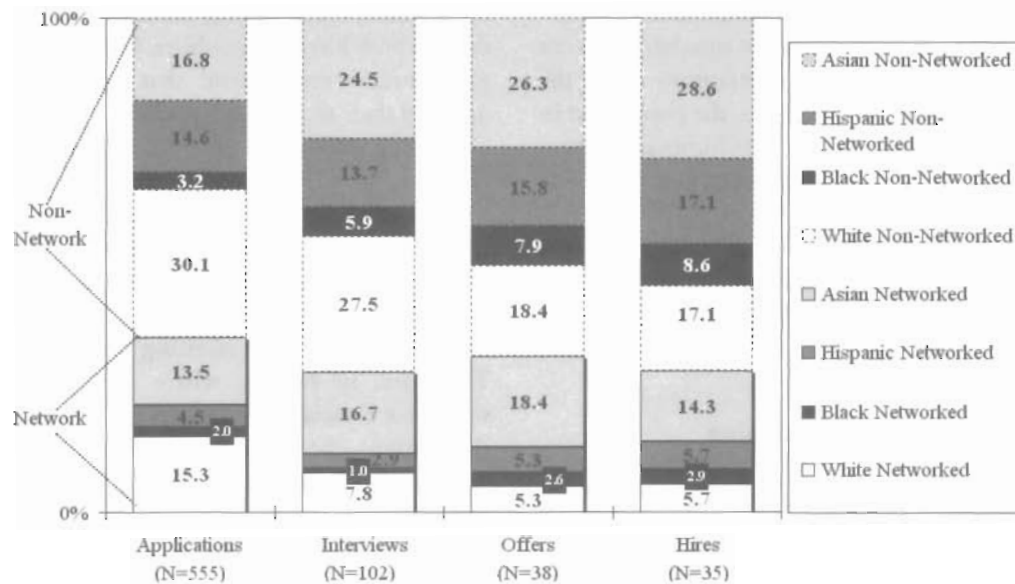


Figure 2b. Male Hiring Interface

anything, it decreases (networked candidates constitute 35.3 percent of the overall male applicant pool and 28.6 percent of hires).

We also performed multivariate (probit) analyses of who is hired versus not hired, in order to introduce controls into the analysis.

For female applicants, both recruitment source and race do not significantly influence the probability of hire. This does not change when human capital and controls are added to the model (although some of these controls such as “years of experience” are significant).

There is thus no evidence of a preference for networked candidates among females, and the race distribution of hires is not different from the distribution of applicants. For males, the results show that all minority racial groups are more likely to be hired than whites—irrespective of whether the person was a referral or not. The only significant pattern is that Asian American nonnetworked males are 8.5 percent more prevalent among hires than among applicants, even after everything else is controlled for.

In sum, the regression results show that there is little evidence of an employer's preference either for, or against, candidates who were referred to the company at the hiring interface. The one exception is the case of Asian American males, where nonnetworked candidates are more likely to be hired compared with networked applicants. We can only speculate whether this reflects a conscious effort to limit the number of Asian Americans—who are overrepresented in the application pool relative to the population in the local labor market. The hiring interface is thus a point of disconnection for Asian American males (i.e., the arrow labeled “(-)” in step 2 of Figure 1), but this employer is otherwise neutral with respect to networked candidates (i.e., the arrow labeled “0” in step 2 of Figure 1).

Summary and Conclusion

This paper makes a number of theoretical contributions to the study of racial inequality and networks. First, it contributes to specifying the mechanisms operating in network accounts of racial inequality in the labor market. Past accounts in this area often run the danger of circular reasoning because “wrong network” is defined in terms of the eventual outcome. We argue that much more analytical precision is needed to specify what it means to be “stuck” in the “wrong network,” as these stories are consis-

tent with minority underrepresentation in *any* of a number of steps in the recruitment and hiring process. Indeed, this study is the first to analyze comprehensively the racial implications of *both* the referring process and the screening mechanisms at the point of hire. We found that network factors operate at several stages of the recruitment process, but we found scant evidence that these factors serve to cut off minorities from employment at this company.

This study also has significant implications for policy. Since policies are often designed to target distinct steps in the recruitment process (National Research Council 2004), understanding each of these steps is crucial for crafting effective policy interventions. Affirmative action, for example, is focused on affecting the behavior of labor market screeners (Reskin 1998). Assessing the effect of these policies will be very difficult without data on both hires and nonhires. Other policy prescriptions recommend that companies open up their recruitment practices by broad advertising and use of formal recruitment systems, on the theory that informal, referral-based recruitment is inherently exclusionary (LoPresto 1986). The results presented here, however, suggest that this heuristic is too simple. Relying on referrals can help reproduce the distribution of the referring population. Therefore, in settings where the current workforce is racially diverse—as is the case in this setting—the referral processes can actually help *perpetuate* diversity (see Rubineau and Fernandez 2005).

Although the “wrong network” account does not fit the facts in this setting, this is not to say that in another, less diverse setting, where referrals may be preferred by screeners, the empirical results would not be markedly different. While we can make no claims of empirical generalizability, however, this study has important methodological implications. Its value is apparent in the light it sheds on mechanisms that are nor-

mally hidden from view. We suggest that the fine-grained processes that we have uncovered here need to be addressed to render the "wrong network" hypothesis testable in other settings. Moreover, it is important to realize that the race and network effects that are often reported in analyses of highly aggregated survey data are likely conflating the effects of the multiple mechanisms that we have delineated. Distinguishing among these steps should be a high priority in future research at the intersection of networks and race in the labor market.

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