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Are Referrals More Productive or More Likeable? Social Networks and the Evaluation of Merit

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Abstract

Scholars and practitioners agree that referrals provide firms with better workers. Economists and sociologists debate whether the underlying mechanism behind such relations is a better match between workers and firms or an advantage conferred by social relations. Building on insights from network theory and cognitive psychology, we offer a new approach to the debate, arguing that network relations can also create evaluative bias. We reexamine the connection between social ties and workers' performance using unique data on the actual productivity of sales employees and their evaluations in a large global firm. Results suggest that the preexistence of ties between an incoming employee and insiders in the firm creates an evaluative advantage—an advantage that is unrelated to workers' concrete performance. We discuss the implications of these results for a relational approach to social stratification, organizations and work, as well as social networks.

Keywords

relational inequality, merit and formalization, networks

There is a general agreement between scholars and managers that referrals are an excellent recruitment source. Top managers in the firms we study cite referrals as the best, most reliable source of employment candidates. Scholars note this practice as beneficial for employees and for firms, lowering recruitment costs, improving matching (Fernandez, Castilla, & Moore, 2000; Fernandez & Weinberg, 1997), and providing ongoing supportive social relations (Castilla, 2005). Job referral is also a source of

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labor market stratification and one that is arguably without discrimination (Granovetter, 1973). It is a mechanism that distributes goods—such as good jobs—within a social group. If referrals are indeed more productive, the resulting stratification is meritocratic and fair. If, on the other hand, employees coming through a referral are not more productive, then the referral practice may hamper employers' odds of finding the best employee for the job.

Despite the importance of accurate and objective evaluations for rewarding excellence and for reducing discrimination, research has shown that performance evaluations continue to be affected by demographic characteristics, such as one's gender or race (Elvira & Town, 2001; Tsui & O'Reilly, 1989) as well as by social networks (Castilla, 2011; Pinkston, 2012). The role of social networks and referrals in the evaluation process is unclear. Social networks can boost performance scores due to a better employee-employer match (Fernandez et al., 2000) or to greater social incorporation at work, each of which can bolster productivity (Castilla, 2005). While the literature has been mostly debated over the former two mechanisms, higher performance scores might also reflect social bias, wherein managers favor the more networked employees, regardless of their productivity. Exploring these dynamics has important implications for our view of bureaucratic hiring and rewarding procedures as either rational and meritocratic or restrictive and nepotistic. Stakes are high for employers as well: If social networks boost productivity and therefore performance evaluations, they should be further encouraged and implemented across workplaces. If social networks boost performance evaluations regardless of productivity, referrals and the evaluation of merit at work should be re-examined.

The problem, of course, is that it is often impossible to distinguish between productivity and subjective evaluations in the process of producing performance scores. After all, firms design their performance evaluations as measures of productivity, and one rarely has information about workers' productivity other than managers' evaluations (but see Castilla, 2005). Drawing on unique data on a multistaged performance evaluation process of high-skill sales workers at a global company, our analysis distinguishes between actual performance and dimensions of its evaluation. This allows us to address a crucial yet seldom-asked question in research on organizations and stratification: Do social ties create an evaluative advantage beyond what is reflected in workers' productivity?

Because performance evaluations are key for wage setting and promotion or termination outcomes, and because social ties are not equally distributed across demographic groups, understanding the mechanisms by which social ties affect evaluations is important for the sociology of organizations and work as well as for social network theory of social stratification (Ibarra, 1992; Kanter, 1977; McGuire, 2002). The social network literature also remains divided on the actual effects of networks on job seekers and jobs (see Granovetter, 1973; Lin, 1999; Pfeffer & Parra 2009). It is the intersection of these three substantive areas that begs the question: are standardized, formalized hiring and promoting practices as meritocratic in the face of nepotism as bureaucracy theory expects them to be (Castilla, 2008; Reskin, 2000; Weber, 1924/1968)? In what follows, we discuss the role of networks and merit in

organizations and the possibility of network evaluative effects. We then turn to our own data, methods, and analyses, which include three distinct productivity scores generated on a productivity/evaluative continuum. We conclude by considering the scope of the current study and its implications vis-à-vis previous studies.

Social Networks and Productivity at Work

Scholars of work and organizations have long recognized the significant role of social relations in shaping the labor process and career outcomes. Decades before the Hawthorne researchers discovered the social group (Roethlisberger & Dickson, 1939), employees of the sociological department of the Ford Motor Company followed workers after hours, making sure their leisure-time social associations would not hamper their productivity. Ample contemporary research has shown that social ties are, more often than not, consequential for work-related outcomes (but see Mouw, 2003). Social networks help job seekers find jobs (Fernandez & Fernandez-Mateo, 2006; Fernandez & Weinberg, 1997; Granovetter, 1974), receive better starting salaries and faster promotions (Burt, 1992; Podolny & Baron, 1997; Simon & Warner, 1992), and stay longer with their employer (Holzer, 1987). Regarding performance evaluations, some find positive effects of social networks (Castilla, 2005; Holzer, 1987; Pinkston, 2012), while others do not (Breaugh & Mann, 1984; Caldwell & Spivey, 1983; Swaroff, Barclay, & Bass, 1985). Castilla's (2005) study of call center employees is, however, the only one that uses a direct measure of productivity, namely, the number of calls per hour in a call center.

Why Do Referred Employees Perform Better? Two Mechanisms, One Assumption

Two distinct mechanisms have been suggested for understanding the better labor market and career outcomes associated with workplace social ties. Economists have argued that social ties lead to better work outcomes because they provide better information in the recruitment process, leading to a tighter expectation and skill match between workers and jobs. The better match is either because those referred come with good information about the position or because referral information reaches better applicants compared to other recruitment sources. This better match then translates to higher starting salaries, longer average tenure, and better work attitudes and performance evaluations as well, at least at the beginning of employment before information gaps are bridged (Fernandez & Weinberg, 1997; Pinkston, 2012; for a review, see Fernandez et al., 2000; Breaugh, 2008).

In contrast to the economic view of social ties as merely conduits of information, sociologists have pointed to the importance of ongoing relational processes at work. Informal mentoring, social and emotional support, or even peer pressure may boost workers' commitment and productivity (Fernandez et al., 2000; Kugler, 2003; McGuire, 2007; Reynolds, 1951). In addition, better performance of referrals may result from unobserved heterogeneity, which may explain referrals' advantage in both

hiring and evaluation decisions. Castilla (2005) found that over time, referred employees lose their advantage over nonreferrals, but the presence of the referrers keeps leading to better performance outcomes. Ongoing social relations between incumbents and newcomers explain this finding better than the quality of prehire information or desired return on wanted hard-to-observe qualities.

Although the economic and the sociological arguments differ in their view of the mechanisms underlying the association between social network and career outcomes, both assume that there are substantive productivity differences between workers with and without social ties. Subsequently, both arguments lead to the conclusion that employers should prefer candidates that arrive at the workplace with preexisting social ties to workers over candidates with no such ties.

Indeed, employers often attempt to capitalize on their workers' networks, especially for recruitment of new workers (Fernandez et al., 2000). In a 2002 national sample of 830 large American organizations, 55% of the employers had a formal employee referral program (unpublished analysis, Kalev, 2005). Research on homophily and in-group biases, however, suggests that other mechanisms—mechanisms not directly tied to productivity—may be at play.

Evaluation, Homophily, and In-Group Bias

The data and analyses we bring to bear in this article allow us to expand the sociological understanding of social relations at work and their implications for inequality by examining whether the generally positive associations between referral and evaluation are brought about not only by improved productivity but also through *the social relational mechanisms of favoritism and preferences.*

The effect of conscious or unconscious in-group favoritism on personnel decisions and performance evaluations has been well documented in research on demographic characteristics, such as gender, race, and age, but seldom in research on networks and referral dynamics. Although social ties and homophily could lead to in-group favoritism as well, and there is some evidence to that effect in research on referrals (Breaugh, Greising, Taggart, & Chen, 2003; Pinkston, 2012), there remains a paucity of systematic analyses of this question (but see Castilla, 2011).

Favoritism toward one's own social network could be a product of a conscious, deliberate process. One such mechanism is related to the social commitment or responsibility to a colleague's or a friend's success. Extant research shows that social network members provide one another with a wide range of resources at work, including technical, social, and emotional support (McGuire, 2007). Similarly, it is possible that the social commitment and mutual care between network members will be reflected in positive performance ratings. Another potential mechanism revolves around the dynamics of group power, inclusion, and exclusion. People may want to surround themselves with network members for the purposes of reducing uncertainty or increasing social power, social closure, or outright favoritism (Kanter, 1977; McPherson, Smith-Lovin, & Cook, 2001; Perrow, 1986; Tomaskovic-Devey, 1993). In job settings where rewards are tied to evaluations, the tendency toward homophily could express itself as an evaluative bias.

Favoritism toward social network members could also be an outcome of unconscious, automatic cognitive processes. Research in social psychology has shown that people tend to automatically categorize others into in-group and out-group categories. The difference between the two groups is often exaggerated, with in-group members perceived as trustworthy, desired, and are highly evaluated compared to the out-group (Fiske, 1998; Reskin, 2000; Tajfel & Turner, 1979). Information on in-group members is filtered through positive perceptions, while for out-group members, the opposite holds (Reskin, 2000). When managers are tainted by such in-group biases, in-group members receive more positive and thorough cognitive attention than do those regarded as out-group members. Both field and laboratory studies concur on these points, reporting evidence of in-group bias in formal systems of performance evaluation, mostly showing that women and minorities are more likely to receive lower scores than White men for the same work when raters are White men (Castilla, 2012; Elvira & Town, 2001; McKay & McDaniel, 2006; Roth, Huffcutt, & Bobko, 2003; Tsui & O'Reilly, 1989).

We expect the dynamics of in-group favoritism and bias to manifest in relation to network ties as well. Previous acquaintances are likely to become a basis for group categorization and accordingly create an in-group bias and the positive evaluation that comes with it. The homophily principle, wherein people tend to surround themselves with similar others, affects whom one considers to be the relevant others in an organizational environment. People look inside their network for those to whom they compare themselves, those whose opinions they value, and simply those whom they are aware of and watch for signals about what is happening in their environment (Lawrence, 2000, cited in McPherson et al., 2001, p. 428). Membership in one's networks can therefore lead to in-group attraction, trust, and favoritism (see also Castilla, 2011) and, likely, more favorable evaluation compared to non-network members.

Finally, it is important to note that social network effects on an employee's performance evaluation can take place even if the manager who does the rating is not part of the employee's network. Positive indirect network effects can be transmitted through stories and gossip and other sorts of information about employee's performance. Such information is produced and disseminated by network members (Burt, 2001; Castilla, 2011). Whether direct or indirect, conscious or unconscious, extant theory on social categorization and on homophily leads us to expect that workers with preexisting ties at the workplace, such as those who arrived with a referral, will have higher performance scores, regardless of their actual performance and controlling for their demographic characteristics.

Although no systematic research has thus far focused on the effect of social ties on favoritism in evaluation (though see Castilla, 2005), there is some evidence in support of this possibility. Pinkston (2012) finds signs of favoritism in the hiring process of workers with a referral:

> Employers obtain less information at the time of hiring about workers who were referred by friends and relatives of the employer than they would collect without a referral. This is consistent with favoritism allowing these workers to be hired with less scrutiny than

> other applicants or with information simply being ignored when their wages are set. Providing further evidence of favoritism, referrals from friends or family of the employer are . . . not associated with hiring more productive workers, but are associated with a wage premium. (p. 399)

In another study, Breaugh et al. (2003) examined prehire outcomes for applicants for information technology jobs using five different recruitment methods (i.e., employee referrals, direct applicants, college placement offices, job fairs, and newspaper ads). Although employee referrals and direct applicants were not different from those in the other groups on two measures of applicant quality, they nonetheless were viewed as being more deserving of job offers and were more likely to be hired (see Breaugh, 2008, p. 109). These two studies suggest either that referrals have better unobserved qualities that the investigators failed to identify or that referrals enjoy an evaluative advantage beyond their human capital.

Distinguishing between these two options, however, is a daunting task. Prior work on performance evaluations was not able to observe the effect of referral status on performance evaluation bias because (1) the job under study was highly quantifiable, leaving no room for bias in evaluation or (2) there is a lack of data distinguishing objective from subjective components of the evaluation. Most recently, Castilla (2005) looked at call center workers where productivity was measured as the number of calls per hour. In this case, there is hardly any room for subjective assessment (Castilla, 2005, footnote 10).[1] Other studies used only a single measure of performance, so discrepancies between productivity and evaluations remain unobserved (e.g., Pinkston, 2012). No previous study on network and performance scores was able to distinguish between a quantitative, semiobjective component of performance evaluation and a subjective one. Our unique data address such prior limitations. The data, discussed below, contain three different measures of performance: One is as tied to productivity as number of calls in a call center, one is as subjectively evaluative as sociometric scores, and one lies between these two extremes. Having all three allows us to examine their interplay and make significant progress in disentangling the extent to which referral advantages are about productivity, unobservable properties, or evaluation bias.

Our exercise also expands research on networks and performance evaluations (or career outcomes more generally) to include high-skill jobs. Existing studies have also mostly focused on low-skilled jobs, for example, store clerks (Caldwell & Spivey, 1983), social service workers (Breaugh & Mann, 1984), call center workers (Castilla, 2005), and other low-skill workers (Pinkston, 2012). Of these, only the latter two found a referral effect on performance or performance evaluations. Studying high-skill jobs is important because mechanisms might vary across jobs and labor market contexts (Bridges & Villemez, 1986; Kugler, 2003; Pinkston, 2012, p. 8). For example, in high-skill, high-paying jobs, employers' benefit from using referrals in recruitment should be higher than in low-skill jobs. The cost of information and mismatch is higher on the one hand, and productivity is less easily measured on the other.

For employers of high-skill workers, the use of referrals—with the related information and social advantages—should be more central. Indeed, in a sample of 830 midsized

and large American employers, only 15% of employers of low-skill workers have had formal referral programs in place, compared with 40% of employers of high-skill professional workers (unpublished analysis, Kalev, 2005). Given the higher uncertainty and higher stakes, it is possible that in these high-skill jobs, favoritism will be higher as well. While we do not compare high-skill and low-skill jobs in this research, we believe that although others have not found a performance evaluation rating advantage for referral in low-skill jobs (Breaugh & Mann, 1984; Caldwell & Spivey, 1983), we should not generalize from that to other types of jobs. On the other hand, the oft-cited productivity advantage of referrals (Castilla, 2005) may be restricted to low-skill jobs.

By distinguishing between the more and less subjective stages in the evaluation process, and by examining high-skill workers, the analysis below adds important insights to the sociological understanding of mechanisms impacting nonmeritocratic stratification in highly formalized work organizations (Castilla, 2008; Reskin, 2003). Moreover, by exploring whether social relational dynamics affect not only workers' merit but also the evaluation of their merit, we contribute to a growing literature highlighting specifically not just demographic or aggregate patterns of inequality but rather the relational processes that often undergird them (Tilly, 1998).

Data and Measurement

We draw data from a global firm that produces and services information technology products. With the exception of a few administrative workers, most employees are highly skilled. In this article, we focus on the productivity and performance evaluations of employees in the sales department at the end of their 2nd year with the company. While the literature is often focused on the first available performance review (e.g., Castilla, 2005), our contacts in the firm routinely mentioned that the first review was meaningless for them and inconsequential. Managers agreed, telling us that employees take about a year to "understand where they are" and adjust to the firm's culture and procedures, and the reviews are a part of this process. We therefore analyze the first consequential review of a worker, which occurs at the end of their 2nd calendar year in the firm. Notably, while least-productive workers might leave the company in the 1st year, our research question focuses on whether workers who arrive through referrals benefit from an evaluative advantage regardless of their productivity. Our results were nonetheless robust to an analysis that considered the selection into staying in the company during the 1st year.

Limiting our data to include these reviews, our sample size is 357 sales employees who began working in the firm between 1997 and 2011. These are about half of the sales employees employed in the company during this period. Our data set does not include workers who did not last until the end of their 2nd calendar year. The data set also does not include workers who arrived to the company in the process of merger with another company because the company has no background records on these employees, which we need to use as control variables for this analysis. Finally, because of missing data, mainly on productivity attainment, the *n* varies across models. When this variation is large, we note so in the text. The main results and arguments above,

however, hold whether we include the productivity attainment data in the analyses or not. Data come from three distinct files: the firm's archive of performance evaluations, which we use for constructing our outcome variables; the firm's Human Resources database; and a file of the interview summaries of new recruits. The latter includes important background information that we coded from Word files.

Dependent Variables: Sales Performance and Its Two-Staged Evaluation

The firms' data include three different measures of performance: employee sales attainment, average performance review score, and final performance score. These measures are progressively consequential, while the meaning of performance is decreasingly straightforward. The nature of the firm's core activity is such that sales vary considerably by persons and roles, as salespersons at different levels have access to distinct clients (retail, corporate, governmental, etc.) and unique markets. Thus, the most meaningful measure of productivity in sales' outcome data is employee's sales attainment—an indicator that quantifies in a percentage the degree to which a salesperson met his or her expected sales quota.

The two performance scores measures reflect two different stages in the firm's evaluative scheme. Every 6 months, each employee fills a detailed questionnaire of self-evaluation on multiple dimensions of his or her effort, commitment, social integration, teamwork, and achievements as well as goals, ideas for improvement, and so forth. The questionnaire is reviewed by the employee's direct manager, who fills in additional evaluation modules for every worker. This document, filled in part by the employee and in part by his or her supervisor, is the main conduit of feedback between managers and their workers. It is also summed into a single score referred to as average performance review score, which we use as a second dependent variable.

We know from our informants in the firm that within the sales department, managers' performance appraisals are largely influenced by their knowledge of employees' sales attainment. The sales attainment and average performance score are inconsequential, however. This is because the distribution of performance among workers is skewed to the right: A great majority of the employees are very productive. The mean quota attainment, for example, is 1.03, meaning that most salespersons sell more than they were expected to. The mean performance review score is more than 3.6 on a 5-point scale. Given this skewed distribution, top management decreed that middle management impose a flat distribution of five equally sized categories on each department's score distribution. Doing so creates the final performance score, which is determined by the rating manager on the basis of the average performance score and the manager's discretion. While in midyear reviews, this score is used for feedback, in end-of-year performance reviews, this final score is quite consequential: In every department, the 20% of employees in the top category will get a bonus, while an employee who is allocated to the bottom category in two consecutive reviews is usually fired.

The relations between these three performance measures are demonstrated in Figure 1. The figure plots the three measures of employee performance, pooling together every

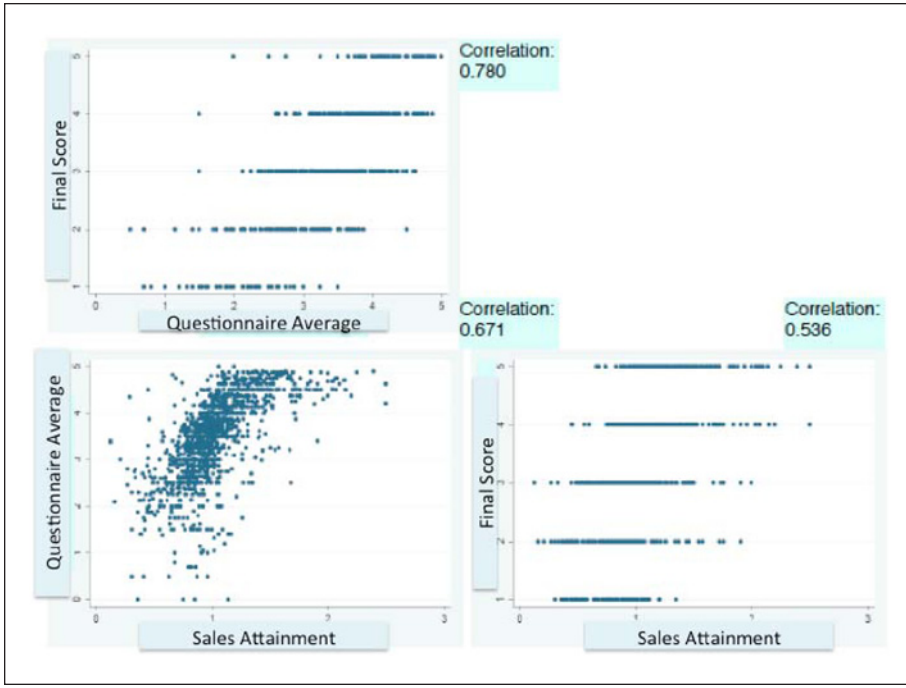

Figure 1. Joint distribution and correlations of performance measures.

review period in our data. Some employees may contribute up to nine observations to these calculations, while others who left within their 1st year or two in the firm contribute only one observation. The figure and the correlations refer to a population of 1,274 worker-years. The figure shows that sales attainment (in percentages), the most direct measure of performance at our disposal, is indeed a major determinant of the average performance score (bottom left panel), with a correlation of 0.671.

The strongest association is among the two indirect measures of performance: the average score and its consequential imposition to a flat distribution of five categories (i.e., the final score). These two measures have a correlation of 0.780. Management in the firm is proud of the performance review system and has great confidence in the utility of imposing a flat distribution on the review scores. Indeed, as shown in the descriptive statistics reported in Table 1, the average performance review, ranging in principle from 0 to 5 and de facto from 0.5 to 5, has a mean of 3.62, whereas the final score, ranging from 1 to 5, has a mean of 3.37, with larger standard deviation. In other words, the final distribution is indeed far less skewed.[2]

The lowest correlation is between the direct performance measure (sales attainment) and the consequential, final score (bottom right panel), with a correlation of 0.536. The plot suggests that outliers drive much of this association. There could be very good reasons for a lower association between the direct attainment measure and

Table 1. Descriptive Statistics.

	Referral			Nonreferral				
	Valid *n*	Average/ Proportion	Standard deviation	Valid *n*	Average/ Proportion	Standard deviation	Min	Max
Sales quota attainment	139	1.03	0.31	163	1.02	0.33	0.22	2.39
Performance Review Score	156	3.64	0.76	201	3.6	0.8	0.5	5
Final Performance Score	156	3.48	1.1	201	3.31	1.13	1	5
Internal transfer	156	3%		201	15%			
Manager	156	6%		201	10%			
Role								
Salesperson	156	55%		201	58%			
Sales engineer	156	37%		201	22%			
Administrative	156	8%		201	20%			
Region								
North America	156	43%		201	31%			
Europe	156	34%		201	46%			
Other regions	156	23%		201	23%			
Previous experience	156	10.1	4.6	201	9.6	5.25	0	36
Female	156	12%		201	19%			
Seniority								
High	156	5%		201	10%			
Average	156	35%		201	28%			
Lower	156	51%		201	48%			
Basic	156	9%		201	14%			
Previous salary	155	114,000	57,000	189	111,500	60,000	13,200	435,000
Offered salary	155	73,000	26,500	192	71,137	31,000	5,730	195,000
Offered commission	155	38,500	30,000	192	37341	28,550	0	173,500

Sales Attainment = actual sales/sale quota; Performance Review Score = score obtained from a detailed questionnaire; Final Performance Score = questionnaire score + manager's discretion.

the final score. For example, if most overperforming salespersons were simply lucky, and their studious managers are aware of that, their high attainment would not be reflected in the average and final scores.

Independent Variables

Prior Social Ties. Our key independent variable of interest measures the *referral* status of the employee. It is a dummy variable coded 1 for the 156 employees in the sales department who were recruited through a referral and 0 for the 201 who were not. Table 1 presents descriptive statistics separately for referrals and nonreferrals. A related independent variable is *internal transfer*, a dummy variable denoting that an employee held a different role in the firm before being assigned to the sales department. A small minority of nonreferrals reached sales via internal transfer, and 5 referred employees had another post in the firm before. Note that unlike the referral indicator, which is a clear positive signal of a recommendation through an acquaintance, internal transfer could be a mixed bag; in some cases, this could mean that

employees move forward in the firm's internal labor market (see Spilerman, 1977), while in others, this could point to maladjustment of the employee in his or her previous team.

Other explanatory variables. We include additional measures that will capture much of the variance in employees' history and position context. *Manager* is a dummy for employees that are in charge of other employees. Six percent of referrals, and 10% of nonreferrals, are hired for such jobs. *Role* refers to their job within the sales department: Most (56%) are salespersons, some (37% of referrals and 22% of nonreferrals) have a more professional role of sales' engineers, and a small portion of the employees (8% of referrals and 20% of nonreferrals) are in administrative support roles. Note that most of the administrative employees are not included in the analysis of sales attainment, as they do not have a sales attainment quota. Our analysis includes only 3 such employees who do have sales attainment data. These are employees who shifted roles midyear.

We control for several measures of human capital. The first is years of previous relevant experience before current employment. We also control for seniority, which is a six-level scale the firm uses to code employees' worth and potential. It is based on employees' current and previous roles, experience, education, and so on. We collapsed the three top levels and termed them *high seniority*. High-seniority workers comprise some 8% of workers in the sales department, a little under a third are in the average seniority level, about a half are in the lower level, and about 12% are in the lowest level. Finally, we control for three monetary variables that capture employees' worth to the firm and the market: their prior salary in a previous job, and their starting salaries in the firm, decomposed to the base starting salary and the sales commission components. This decomposition is required both because the commission is not a guaranteed payment and because most administrative employees' commission is zero. Referrals have slightly higher previous salaries and starting salaries than their nonreferral counterparts, which is consistent with previous research (Fernandez et al., 2000; Pinkston, 2012). Table 1 presents the distributions of these variables in dollar units, but in the analysis, these sums are logged.

Finally we control for region within this global firm, distinguishing between North America, Europe, and all other smaller locations (Australia, Far East), as well as for gender. Most sales employees are men, and women are only about 15% of the department—although there are women in all three roles. All models also include dummy variables for every calendar year in the data (1997-2011) to account for market conditions (these estimates are not shown).

Analytic Strategy and Results

Our analyses center on the extent to which there is any systematic pattern of bias in the evaluation of productivity. The analyses proceed in three stages, presented in Table 2. We first examine the determinants of sales attainment (Table 2, Panel 1). We then move to examine the determinants of the average score, with sales attainment

Table 2. Coefficients (and *t* Statistics) of Performance Regression Models.

	Panel 1: Sales attainment			Panel 2: Performance (average score)				Panel 3: Evaluation (review final score)			
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Referral	0.03	0.03	0.02	0.14	0.11	0.08	0.05	0.285**	0.255**	0.225*	0.168*
	(0.71)	(0.80)	(0.51)	(1.51)	(1.18)	(0.78)	(0.53)	(2.30)	(1.97)	(1.68)	(1.94)
Internal_transfer	0.11	0.10	0.10	0.06	0.00	–0.03	–0.374*	0.08	0.05	0.06	0.11
	(1.00)	(1.00)	(0.94)	(0.27)	0.00	(0.12)	(–1.71)	(0.26)	(0.15)	(0.20)	(0.52)
Role (omitted: salesperson)											
Sales engineer		–0.06	0.02		–0.02	0.08	0.17		–0.08	–0.07	–0.311*
		(–1.37)	(0.27)		(0.16)	(0.43)	(0.90)		(0.54)	(0.27)	(1.83)
Administrative		0.529**	0.582**		–0.14	–0.05	–0.61		–0.447*	–0.54	–0.599**
		(2.67)	(2.79)		(0.81)	(0.20)	(–1.13)		(1.88)	(1.53)	(2.62)
Manager		–0.06	–0.07		–0.28	–0.17	0.06		–0.17	0.00	0.20
		(–0.58)	(–0.63)		(1.10)	(0.65)	(0.28)		(0.50)	(0.00)	(0.88)
Region (omitted: North America)											
Europe		–0.109**	–0.0959**		–0.179*	–0.189*	0.00		–0.17	–0.06	0.03
		(–2.44)	(–1.98)		(1.70)	(1.69)	(–0.04)		(1.15)	(0.40)	(0.33)
Other		–0.140**	–0.08		–0.14	–0.15	–0.19		–0.02	0.12	0.265*
		(–2.58)	(–1.11)		(–1.10)	(–0.95)	(–1.33)		(–0.13)	–0.57	–1.92
Experience		0.00	0.00		–0.01	–0.01	–0.01		–0.02	–0.03	–0.01
		(–0.01)	(–0.25)		(1.04)	(1.01)	(–1.31)		(0.98)	(1.51)	(0.69)
Female		–0.11	–0.11		0.11	0.18	0.05		0.18	0.24	0.09
		(–1.57)	(–1.44)		(0.82)	(1.16)	(0.32)		(0.94)	(1.14)	(0.65)
Seniority (omitted: average)											
Higher		0.08	0.06		0.37	0.37	0.18		0.42	0.19	–0.25
		(0.69)	(0.52)		(1.43)	(1.37)	(0.78)		(1.21)	(0.53)	(1.05)
Lower		0.0845*	0.105**		–0.04	–0.06	–0.198**		0.07	0.09	0.15
		(1.89)	(2.23)		(0.35)	(0.53)	(–2.00)		(0.47)	(0.59)	(1.42)
Basic		–0.12	–0.05		–0.18	–0.06	–0.03		0.01	0.36	0.362*
		(–1.09)	(–0.43)		(0.84)	(0.26)	(–0.10)		(0.02)	(1.14)	(1.78)

(continued)

Table 2. (continued)

	Panel 1: Sales attainment			Panel 2: Performance (average score)				Panel 3: Evaluation (review final score)			
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Previous salary			–0.06			–0.03	0.04			0.17	0.16
			(–0.52)			(0.13)	(0.18)			(0.48)	(0.71)
Offered salary			0.06			–0.05	–0.18			0.12	0.27
			(0.53)			(0.18)	(–0.78)			(0.32)	(1.15)
Offered commission			0.09			0.11	0.02			–0.03	–0.198*
			(1.32)			(0.85)	(0.12)			(0.17)	(1.68)
"Parent" measure							1.515**				1.132**
							(11.30)				(20.54)
Constant	1.080**	1.099**	0.01	3.248**	3.587**	3.413**	3.468**	2.747**	3.004**	0.14	–3.846**
	–8.81	–7.11	–0.01	(24.21)	(14.70)	(1.96)	–2.27	(15.12)	(9.04)	(0.06)	(2.50)
2-LL	154	137	127	870	859	789	483	1,073	1,063	977	647
n	302	302	288	362	361	335	269	357	356	330	330

Note. 'Parent measure' in panel II is the dependent variable of panel I. 'Parent measure' of panel III is the dependent variable of panel II. *t* statistics in parentheses.
*$p < .1$.
**$p < .05$.

included in the model (Table 2, Panel 2). The third set of regressions examines the factors shaping the final score when the average score is included in the regression analysis (Table 2, Panel 3). Predictors that are insignificant in Panel 1 and are significant in Panel 3 (i.e., have no association with sales but have an association with the manager's final evaluation) suggest an evaluative bias. In particular, we are interested in whether the distinction between workers recruited through a referral and others biases the results. We address this by fitting several generalized linear models for each of the dependent variables.

Evaluation of Employee Sales Performance

The first panel on the left-hand side of Table 2 estimates the associations of available predictors with actual performance, or the proportion of sales quota obtained. Model 1 examines whether employees recruited from different sources—referrals, internal transfers from other departments, or "regular" employees—perform differently relative to their sales quota. Among the 302 employees with sales attainment data in their first consequential review, they do not. There are no significant differences in attainment between workers with and without a referral.

The second model adds controls for specific role within the sales department, geographic differences, previous experience, gender, and the firm's evaluation of seniority. The referral variable remains insignificant. Looking at the control variables, the 3 workers coded 1 on the variable administrative roles obtained more of their quota than regular salespersons. The regional dummies are also significant: Europeans are about 11% short on their quota attainment compared to North Americans, and salespersons from other regions are about 14% shorter compared to North Americans. Finally, employees of lower seniority tend to achieve more of their quota than the average seniority group. This implies that low-ranking employees may be undervalued and get initially small quotas. Model 3 adds logged financial information—that is, employees' previous salary and starting salaries. None have any significant association with quota attainment. Including these variables in the analysis renders the negative estimate for employees from outside of North America and Europe insignificant. The referral variable remains insignificant here as well.

The analysis of direct sales data suggests that the firm's analysis of its workers' ability and allocation of sales quotas are mostly on target. Furthermore, it implies that the recruitment and selection procedures are unbiased by any of the predictors. The only two exceptions, of small magnitude, are that some of the quotas for employees of low seniority are slightly too low (marking this group with a significant positive association with sales) and that employees in Europe tend to underperform compared to their American colleagues, perhaps suggesting that their quotas are set too high. Recall, however, that managers at the firm we study make little use of the direct attainment data, which might make sense from a management perspective since such a direct measure is unavailable for most of their workers. We thus move to the more consequential measures involved in the firms' performance review scheme.

Average Performance Score

We proceed to analyze the associations of the average performance review score—the score calculated by the manager simply by aggregating sales quota with other formal measures, such as teamwork and effort. Models 1 through 3 in the middle panel (Panel 2) include the same independent variables as the models in Panel 1 discussed above, but now the dependent variable is average performance score. The higher *n* in these models is because they are not restricted by the missing values in the sales attainment variable and include more administrative workers (models in which we dropped these are similar). Results are quite similar across models. Indeed, none of the models shows any significance for arriving to the firm via a referral. Employees with referral ties are not more likely to receive higher average performance scores. In these models, the only significant difference (albeit at a 0.1 level) is the disadvantage of European employees compared to North Americans.

Model 4 adds the quota attainment as a predictor for the performance scores. Consistent with both what we heard from firm informants and the correlation analysis presented in Figure 1, the measure for attainment is significant, is very strong, and greatly improves the model fit. However, its inclusion in the model also reduces the population of valid cases by about 20%. Most of those excluded by this last model are administrative workers, only 3 of whom had attainment data. Thus, we interpret this model with some caution. This changes other estimates in several interesting ways as well: First, the European disadvantage becomes insignificant. The estimate for differences between the lower- and average-seniority groups gains significance but changes its direction. Lower-seniority workers, controlling for attainment, get lower performance scores. Internal transfers also get significantly lower performance scores when sales attainment is in the model. Of the seven models reported so far, no significant association with referral is present. We now turn to the third and most consequential performance measure, final performance score.

Final Performance Scores

The third panel of Table 2 includes estimates of the final review score. In contrast to all previous models, Model 1 shows a relatively strong and significant association between referral status and final scores. On average, referrals obtain 0.285 higher evaluations, on a five-category scale, than nonreferrals. Model 2 adds positional and demographic controls. Administrative workers have a strong and significant (on a one-tailed test) disadvantage compared to salespersons. Other predictors are insignificant. Model 3 adds the monetary controls, which explain away the administrative disadvantage and weaken the significance level of the referral advantage.

Finally, Model 4 adds a control for the average performance score. Recall that the dependent variable here is based on average performance score. If the process by which managers redistribute their subordinates to the five-category scale is unbiased, we should expect nothing in this model to be significant, except for this last predictor. Indeed, the model fit is much better in this last model. But even when controlling for

employees' average performance review score, the final score is associated with some predictors. Most important to our core question is that employees who came into the company via a referral attain significantly higher final scores even while controlling for all the observed and unobserved employee characteristics captured by the average performance score, on which the final score is based. When a manager is required to rate two employees with the same average score, he or she is likely to round the referred employee up and round the nonreferred employee down. In addition, high commission is associated with lower final scores, level of seniority is associated with lower final scores, workers outside North America and Europe tend to get higher scores, and salespersons (the omitted category of role) get higher scores than others.

Discussion and Conclusions

Scholars of social networks and workplace inequality largely agree that workers who arrive with referrals have better career outcomes. Yet they are mainly divided on the question of the mechanisms leading to this effect. It may be that the referral process creates a better match. Or, perhaps, workers with prior social ties benefit from ongoing social support on the job. Practitioners tend to agree that referrals produce better workers, leading to a growing popularity in employee referral programs, particularly in high-skill jobs—jobs where indicators of performance are typically vague and the costs of evaluation error are higher.

In this article, we have offered another answer to the question of social ties and performance at work, asking whether the presence of ties creates in-group favoritism and biases unrelated to workers' performance. Joining broader efforts to develop relational models of organizations and inequality and building on insights from network theory and cognitive psychology, we argue that network membership can create similar in-group effects as do gender, race, or other demographic categories. We assess this possibility using unique data on a multistaged performance evaluation process in a multinational firm.

Our results, while obtained for a limited *N* and on a single case study, suggest a relational pattern of inequality that has yet to be systematically theorized or accounted for in sociological work yet: Workers who arrive to a firm via a referral are not necessarily more productive than others. They are also not more likely to receive a high performance score based on detailed evaluation questionnaires, as the better-match and social-enrichment explanations for referral advantage would suggest (Castilla, 2005). Our findings instead reveal that referrals are significantly more likely to receive a higher *final* performance score, the score most consequential for bonus and other career outcomes, while controlling for observed and unobserved employee characteristics captured by the average performance score, on which the final score is based. Notably, this is also the score that depends most on informal, nonstandardized, managerial discretion. Following Castilla (2008), we can describe these results as evidence of a *network-based performance reward bias*, wherein for the same average performance score, workers with prior network ties receive a higher consequential ranking. Notably, these effects may operate indirectly, regardless of whether the rater is the referrer, due to reputation or indirect relations.

Unlike Castilla's (2008) study on performance reward bias, as well as the lion's share of the research on bias in performance evaluation, our study expands the inquiry to examine network-based, rather than demography-based, bias. This marks a significant contribution to research on relational sources of workplace inequality in formalized organizations. Formalization, including formal performance evaluations, has been long viewed by scholars, practitioners, and lawmakers as a mechanism for reducing nepotism and bias in managerial decision making (Bielby, 2000; Dobbin, 2009; Edelman, Krieger, Eliason, Albiston, & Mellema, 2011; Reskin, 2000). Scholars have shown, however, that gender and racial biases creep into performance evaluations (Castilla, 2012; Roth et al., 2003). This study explicitly extends the sociological understanding of the mechanisms leading to nonmeritocratic inequality at work by conceiving of bias in performance evaluations beyond demographic bias per se. While understanding the specific mechanism for the observed referral effect requires further investigation, our results point to network membership as a source of in-group favoritism. This should not be surprising, given what we know about homophily and informal cliques in the organizations. Studies have established that social networks at the workplace are self-reinforcing in informal ways (but see Rubineau & Fernandez, in press). This self-reinforcing pattern, as our analyses demonstrate, is replicated in formal evaluation systems through evaluative advantage. Given that networks are often relatively homogenous in terms of gender and race, such in-group network favoritism may mask gender and racial biases as well (Levanon, 2011; Lin, 1999; McDonald, 2011).

Notably, we find evidence of bias only in the most informal stage of the evaluation processes. Had such a referral advantage emerged between the first, productivity measure, and the second, average performance measure, it would have been easier to explain it as a real advantage on unobservable properties identified by managers. Yet the main difference between the average score and the final score is not in what they were designed to measure or on who measures. The average performance score is calculated based on a formal written questionnaire, which infuses standardization and accountability to the process, and these seem to do the job of preventing bias (Castilla, 2008; Reskin, 2000; Tetlock, 1985). The final stage, where we do find evidence for network bias, is explicitly based on managerial discretion. Top management allows managerial discretion at this stage to correct the formalized evaluation process that failed to create the required distinction between high and low performers. This is yet another example in which managerial discretion cannot be entirely erased from formalized decision making (Perrow, 1986). Of course, managerial discretion is sometimes needed. Our findings, however, clearly show that if employers are to guard against unwanted bias they should supplement discretion with a review, searching for systematic patterns indicative of bias. When decision makers make decisions on a case-by-case basis, they cannot detect patterns of bias; a review of their decisions could correct for that (Brooks & Purdie-Vaughns, 2007).

For network research, this study contributes to our understanding of the mechanisms leading to the established referral advantage at work. For both an economic and a socioeconomic analysis of organizations and inequality, our findings suggest that social relations affect one's career outcomes not only by providing access for more opportunities

(i.e., Granovetter, 1973), knowledge and training (Gronlund, 2012), or even social support (McGuire, 2007), all of which indeed may create more productive workers (Castilla, 2005). Rather, social relations at work may also foster insiders-versus-outsiders divisions (McDonald, 2011), rewarding the former. In this way, social groups can accumulate or exclude others from voice and power in organizations. Such network favoritism hampers organizations' efficiency and can also create a sense of injustice and unfairness among workers even when a highly formalized, meritocratic system of rewards is in place (Castilla, 2008). For some jobs, efficiency in recruitment costs may justify an overreliance on existing social networks. For others, restricting the pool of candidates could seriously damage a firm's competitive advantage. Future research should further engage with the gap between productivity and its assessment.

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Notes

1. Note that quantitative performance measures, such as number of calls per hour, could also be affected by external factors, for example, harassment by coworkers, disparate treatment by managers, or otherwise a counterproductive work environment. See Roscigno (2007).
2. The final score's mean should be 3, because managers are forced to fit a five-category distribution. It is slightly above 3 because of managers' practice to give the lowest scores to employees they know will soon leave their local roster anyway, for example, after layoff, before relocation, or during maternity leave, so the lowest category actually has less than 20% of employees.

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