

Occupational Segregation on the Playing Field: The Case of Major League Baseball

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Occupational segregation, by race and gender, though less common now than in the past, continues to be the norm rather than the exception in the sport industry. The purpose of this study was twofold. First, occupational segregation on the baseball playing field, often referred to as stacking, was discussed in light of human capital and social closure theories. Second, an attempt was made to replicate and extend a multivariate analysis of stacking by Margolis and Piliavin (1999) that challenges the dominant social science paradigm for explaining stacking. The present study uses more recent data than the Margolis and Piliavin study, as well as multinomial logistic regression analysis. The results reveal that stacking persists in Major League Baseball. They also reveal that the effect of race/ethnicity on assignments to playing positions is reduced when one controls for skills and physical characteristics such as speed and power hitting. The implications of this finding for sport management are examined.

A close look at the sport industry reveals undeniable patterns of minority segregation. Although minorities are overrepresented as players, they continue to be underrepresented as coaches, athletic directors, general managers, team owners, and in other positions of leadership and control (Lapchick, 2001, 2003). Not only does occupational segregation persist at the level of management, but similar patterns are reflected on the playing field, a phenomenon known as stacking. Stacking is said to exist when minority athletes are overrepresented at some playing

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positions and underrepresented in others. Studies of baseball, for instance, have found that African Americans are underrepresented in central positions such as pitcher, catcher, and infielder, and overrepresented in what might be considered peripheral positions such as outfielder (Hill & Spellman, 1984; Lavoie & Leonard, 1994; Margolis & Piliavin, 1999; Medoff, 1986; Smith & Leonard, 1997). Gonzales (1996) found Latinos to be overrepresented at second base and shortstop. The stacking pattern has been found in other sports as well (Eitzen & Furst, 1989; Hallinan, 1991; Lavoie, 1989; Loy & McElvogue, 1970; Maguire, 1988).

Drawing on a rich source of salary and performance data, most research (e.g., Christiano, 1988; Hill & Spellman, 1984; Kahn, 1991; Scully, 1989; Singh, Sack, & Dick, 2003) has found no salary discrimination by race and ethnicity in Major League Baseball. Nonetheless, there is reason to believe that positional segregation by race and ethnicity, or stacking, does have an indirect disparate negative impact on minorities. For instance, a number of studies (Grusky, 1963; Rimer, 1996; Scully, 1989) have found that Major League Baseball managers tend to be former infielders, positions in which Blacks have been historically underrepresented. Thus, stacking might create a "glass ceiling" in baseball not unlike that faced by women and minorities in other work settings (Maume, 1999; Tienda & Stier, 1996; Tomaskovic-Devey, 1993). Scully (1989) has argued that underrepresentation in infield positions keeps minority athletes away from the center of decision making where players develop managerial skills needed for career advancement.

Thirty years of research on stacking have yielded scores of empirical studies and a variety of disparate theoretical insights (see Smith & Leonard, 1997). For the most part, these studies have not used multivariate statistical analyses and have treated stacking as a phenomenon peculiar to sport teams rather than as a type of segregation that one finds in a wide variety of industries and work settings in America. Perhaps the main conceptual flaw in extant literature (e.g., Loy & McElvogue, 1970; Shropshire, 1996; Smith & Henderson, 2000; Smith & Leonard, 1997) is the assumption that the mere existence of positional segregation is evidence of discrimination by management. Given these deficiencies in previous research, the purpose of this study is twofold. First, we will discuss stacking in light of two opposing theories often used to explain occupational segregation in the workplace. Second, we will replicate a multivariate analysis of stacking by Margolis and Piliavin (1999), which challenges the dominant social science paradigm for explaining stacking. This study extends Margolis and Piliavin by using a more recent data set and multinomial logistic regression analysis.

Literature Review

Opposing Theories of Occupational Segregation

Occupational segregation by race and gender persists in the workplace. Jobs that have high prestige and decision-making power over other workers and provide career ladders and management-skill training are more likely to be filled by White men than by women and minorities (Kaufman, 2002; King, 1992; Tomaskovic-Devey, 1993). Theories that attempt to explain occupational

segregation tend to fall into two broad categories. On the one hand are "social closure" theories that view segregation as the result of discrimination by employers and discriminatory practices embedded in social institutions. On the other hand are "human capital" theories that focus on the skills and motivations of labor-market entrants to explain labor force inequalities. This latter approach emphasizes what can be called the supply side of the labor market (Becker, 1975; Polachek & Siebert, 1993).

At the heart of social closure theory is the notion that more highly skilled and otherwise advantaged jobs are reserved for White males (Bonacich, 1972; Cockburn, 1988; Murphey, 1988; Weeden, 2002; Williams & Kenison, 1996). According to this "demand side" view, employers intentionally discriminate in hiring, often with the support of White male employees, thereby placing minorities in jobs with low skill requirements relative to their abilities (Moss & Tilly, 1996; Reskin & Padavic, 1999; Tomaskovic-Devey, 1993). Research on racial differences in the labor market reveals that African Americans, for instance, are often found in jobs with significantly lower levels of task complexity than Whites even when factors such as educational background, work experience, and skill level are statistically controlled for (Grodsky & Pager, 2001; Huffman & Cohen, 2004; Kalleberg & Leicht, 1986; Mason, 1997). These exclusionary policies could be motivated by prejudice or merely by the desire to preserve advantage for one's own status group.

By contrast, the human capital theory tends to de-emphasize intentional discrimination by employers and argues that job advantages based on race and gender are the result of differences in the acquisition of human capital characteristics such as education, labor-force experience, and specialized skills (Lundberg & Startz, 1998; Polachek & Siebert, 1993; Tam, 1997). An extreme version of this neoclassical labor-market theory assumes a relatively meritocratic system in which workers are matched with jobs according to their talents and willingness to make human capital investments in education and training. This orthodox view gives little attention to market imperfections such as racial and gender discrimination by employers or unequal opportunities to acquire human capital from birth (Hurst, 1992).

It has been noted (Hurst, 1992; Weeden, 2002) that the orthodox neoclassical view has some similarities with the functional theory of stratification developed by Davis and Moore (1945). According to this view, social inequality serves a useful societal function by motivating people to undergo the training and sacrifice needed to acquire skills and occupations that are critical to the social system. The implication is that as people compete for higher wages in an open market, those who have invested in human capital or have greater native talent are rewarded with high-paying jobs. Society benefits by having competent people in responsible positions (Weeden). This theory assumes a social system constantly straining toward equilibrium.

In this orthodox neoclassical form, human capital theory has little in common with social closure theories, which view inequality as a result of unequal opportunities that are created by and serve the interests of those in power. As Hurst

(1992) points out, however, more moderate versions of human capital theory do recognize “that discrimination exists and that competition is not as free as suggested by the orthodox model” (p. 221). Both the social closure and more moderate human capital positions acknowledge the role of historical discrimination and class advantages in work force inequality. The major difference between the two perspectives is that the human capital position focuses on the legacy of past discrimination, rather than direct discrimination in the present, to account for current inequalities in the labor market (Tomaskovic-Devey, 1993).

This legacy of past discrimination, according to human capital theorists, has left Whites with better schools, better housing, and more opportunities to save, invest, borrow, and further their economic position than minorities (Oliver & Shapiro, 1997). As a result, human capital theorists would argue, minorities often lack the skills, financial resources, and cultural capital to compete in today’s job market (Wilson, 1987). Lundberg and Startz (1998) argue, “when community human capital affects human capital accumulation by individuals, differences between groups can persist indefinitely, even in the absence of current discrimination” (p. 292). The failure of human capital theory to analyze the dynamics of current discrimination by those in power is viewed by social closure adherents and other conflict theorists as its major failing (Figart, 2001; Williams & Kenison, 1996).

Stacking, Social Closure, and Human Capital

The dominant explanation for stacking in social science literature is that it results from intentional discrimination at the individual and institutional levels, thus supporting the social closure argument. One form this argument takes is that managers or others who assign players to positions in professional sports like baseball do so on the basis of the stereotype that Blacks are “naturally athletic,” but lack the mental ability to occupy leadership positions in the infield (Lavoie & Leonard, 1994; Loy & McElvogue, 1970; Smith & Henderson, 2000). Another variant of the intentional discrimination argument is that privileged Whites simply do not want members of lower status groups such as African Americans to occupy positions of leadership and control, regardless of what they think of their abilities. According to those who take this position (Edwards, 1973; Shropshire, 1996; Lapchick, 2003), institutional discrimination against minorities continues to be a reality in the work place. Sport, it is argued, is simply a microcosm of the larger racist and sexist society where powerful White “old boy networks” control major institutions and consciously support policies that exclude minorities from jobs in which decisions are made.

Another variant of the social closure theory is the argument that young athletes avoid some positions because they know from experience that minorities face discrimination in those positions, thus making it irrational for them to expend much effort training for them. Thus, they gravitate to positions in which the likelihood of success is greater. This argument is referred to in the literature on employment discrimination as rational choice theory (Caputo, 2002). Its premise is that

investments in human capital might not be economically rational for those who know that discrimination will bar them from opportunities the human capital investment was supposed to facilitate. Rational choice theory argues that workers continue to face significant discrimination at all levels of employment (Sunstein, 1997).

Human capital theory, by contrast, assumes that the market for player talent in Major League Baseball is relatively efficient and sorts players into positions commensurate with human capital characteristics such as skills acquired before entering the league. If discrimination is a factor, the assumption is that it most likely occurred in the past. Medoff's (1986) economic hypothesis for racial segregation in the assignment of players to positions in sports is a derivation of the human capital model. According to Medoff (1986), Blacks and Whites do not have the same access to facilities, coaching, equipment, training, and instruction during their development years. As a consequence, Blacks will be attracted to those sports in which the costs of acquiring the requisite skills are lowest. If Medoff is correct, stacking in baseball is less the result of intentional discrimination by major league coaches and the leagues than of a lack of opportunity to develop skills needed to play certain positions. According to Medoff, young minority athletes have limited choices because of the lack of resources created by historical discrimination.

Another explanation for occupational segregation in sport teams that is consistent with human capital logic is role-modeling theory (Castine & Roberts, 1974). It is beyond dispute that overt discrimination and racism in the past often barred the entrance of minorities to leadership positions in the workplace, including positions in sport such as quarterback, catcher, pitcher, and point guard (Smith & Henderson, 2000; Tygiel, 1983). As a consequence, it might have become a cultural pattern for minority children to choose playing positions that have less impact on game strategy because these are the positions their dominant role models have played. This role modeling theory implies that even if current discrimination were eliminated, minority children would still strive to develop skill sets and enter positions not unlike those of their role models.

There have been no rigorous empirical studies to test the relative merits of social closure and human capital theories as they apply to occupational segregation in sports. One study that has considerable relevance to this issue, however, is Margolis and Pilavin's (1999) multivariate analysis of stacking in Major League Baseball. As in previous studies, this one found a strong bivariate relationship between race and position played, with African Americans being overrepresented in the outfield. When speed was held constant, however, the relationship between race and position played was reduced significantly. This led the authors to conclude that African Americans were overrepresented in the outfield in part because they are faster than other players. If speed were not a mediating factor, holding it constant would have no effect on the relationship between race and position played. The African American effect remained highly significant even after speed was controlled, but was reduced by one third. The Margolis and Piliavin study does not rule out discrimination, but it does suggest that human capital theory might offer a useful model for solving at least a part of the stacking riddle.

Because the Margolis and Piliavin study poses a challenge to the social closure paradigm that dominates social science discourse regarding stacking, an attempt was made to replicate it using more recent data and more appropriate statistical procedures. In order to accomplish this, the first step taken was to determine whether positional segregation by race/ethnicity occurred in Major League Baseball during the 1999 season. If positional segregation was found, the second step would be to determine whether positions played were related to variables such as height, weight, age, slugging average, and speed of the players. It seems reasonable to expect that some playing positions require different skills and physical characteristics than others. For instance, first basemen are likely to be taller than other infielders, given the extended reach required to catch throws to first. Other positions such as those in the outfield might require more speed. Players at second base and shortstop might be lighter and shorter than other players because of the need for quickness and flexibility at these positions.

If both race/ethnicity and the possession of various skills and physical characteristics are found to be related to positions played, one could argue that positional segregation in baseball might be related to skills and physical characteristics that are closely related to race/ethnicity. To test this argument, the relationship between race/ethnicity and positional segregation was examined by systematically evaluating mediator variables such as speed, power hitting, and various physical traits. If the race effect is significantly reduced when these variables are included, then one can reasonably argue that different types of skills and physical characteristics related to race/ethnicity are important in determining playing positions, thus lending support to human capital theory. If controlling for these variables does not significantly reduce the race effect, then this strengthens the traditional explanation that racial discrimination is the cause of stacking. Our specific hypotheses, based on the findings of Margolis and Piliavin (1999) and previous research findings, are as follows:

Hypothesis 1: The allocation of players to positions in Major League Baseball will exhibit stacking, with Whites being overrepresented at infield positions, Latinos overrepresented at second base and shortstop, and African Americans overrepresented in the outfield.

Hypothesis 2: Physical characteristics and skills will be related to positions played.

Hypothesis 3: The race effect will be reduced once the skill variables and physical characteristics are included in the regressions.

Method

Sample and Data

The population of players included in this study included all hitters, including designated hitters, comprising the opening day rosters of the 30 professional baseball teams in the 1999 major-league season. Pitchers were omitted from the

population because their performance data are significantly different from nonpitchers. Players who saw very little playing time, such as pinch hitters and runners, or players brought up from the minor leagues on a part-time basis, were also omitted by restricting the sample to players with 50 or more at bats. The final sample size once pitchers and partial players were omitted was 299. Player position, performance, and personal-attributes data were obtained from the 1998 and 1999 Major League Handbook (James, 1999). All data were double-checked for accuracy against those posted by other sources, such as *Sports Illustrated* and *Associated Press*. Data on race/ethnicity were obtained primarily from the complete set of Topps Baseball cards for the 1999 season and the web sites of the various teams.

Dependent Variable

The dependent variable was player position. Four positions were categorized and the coding followed largely from previous research (Margolis & Piliavin, 1999). The catcher position was coded as 1. Second base and shortstop were coded as 2; first and third base as 3; and outfield as 4. For players playing more than one position and the designated hitter, the coding was determined by the position they played most frequently. This four-category variable was adequate for the preliminary analysis, which consisted of a contingency table and bivariate analysis. The categorical nature of this coding scheme, however, made it less appropriate in the regression analysis.

Because ordinal scales are often treated as continuous variables in regression analysis, second base, shortstop, first base, and third base were combined into a single category, thus creating three playing positions, catcher, infielder, and outfielder. The logic here was that catchers and pitchers are at the center of interaction on the playing field. Catchers often call the pitches, and catchers and pitchers have the greatest contact with the manager. Infielders often interact with each other and, to a lesser extent, with outfielders when the ball is in play, and they come to the pitchers mound when the manager is on the field. Outfielders seldom interact with each other to make a play and have little or no interaction with managers while on the field. Although this is not a continuous measure, it does approximate an ordinal scale. This analysis also used multinomial logistic regression, which is better suited for categorical dependent variables.

Independent Variables

Race/Ethnicity. Race and ethnicity were determined through two methods. First, the coach and two senior players of a college baseball team coded the players into the three categories suggested by the authors. Based on previous research (Margolis & Piliavin, 1999), an African American player was defined as a player with a relatively dark complexion and a non-Spanish surname who was neither born in nor currently resided in a Spanish-speaking country. A player was defined as Latino if he had a Spanish surname or was either born in or resided in a Spanish-speaking country. Players not classified as African American or Latino

were classified as Whites because there were no Asian or Asian Americans in the data set. To increase the accuracy of the coding, the classifications were also assessed by the authors using 1999 Topps baseball cards and the web sites of the various teams. With the exception of two players, the classifications using the two methods resulted in the same results. The two players were subsequently deleted from the sample. In the regression analysis, race/ethnicity was dummy coded into two variables: African Americans and Latinos. On the African American variable, African Americans were coded 1 and Whites and Latinos were coded 0. On the Latino variable, Latino was coded 1 and Whites and African Americans were coded 0. In the logistic regression, dummy coding was not necessary.

Player Skills. Two player skills that are critical to the game of baseball are speed and power hitting. As in previous research (Margolis & Piliavin, 1999), a proxy for speed was used: the stealing-attempt percentage from first base. That is, the number of attempts per 100 opportunities to steal second base. Margolis and Piliavin found that speed was second in importance only to race in explaining positional segregation. Power hitting was measured by a player's slugging average, which was computed by dividing the total bases a hitter obtained by that hitter's number of official at-bats. Home runs were also initially included, but this variable was dropped because of its high intercorrelation with slugging average. As in previous research, 1998 data were used to predict 1999 positions because the previous year's performance is the best benchmark in assessing the current placement (Holbrook & Shultz, 1996). Previous year's performance is also highly correlated with career performance (Scully, 1989).

Physical Characteristics. Three physical characteristics were used: height (inches), weight (pounds), and age (years). These attributes might be related to a player's position. Some positions, such as first base, might require taller players because of the "span" needed to receive throws. Shorter players with less weight might occupy second base and shortstop, where greater flexibility is required. Older players might be in positions that do not require as much running speed as others, such as catcher and first base. Height, weight, and age were all measured as continuous variables.

Analysis

Descriptive statistics were first used to examine the distribution of the data. Cross-tabs, chi-square tests, and analyses of variance were used to analyze the relationships among the independent variable (race/ethnicity), the dependent variable (position played), and the control variables (height, speed, slugging, age, and weight). Finally, multivariate analyses were used to identify the effects of race/ethnicity, as well as the effects of mediating variables, on position played. A hierarchical regression of position played on race and all control variables was run initially in order to replicate Margolis and Piliavin's analysis. Finally, a multinomial logistic regression analysis of position played by race, speed, slugging average, and other control variables was carried out.

Results

Table 1 shows players' position by race/ethnicity. It is evident that stacking exists. Consistent with three decades' research in this area, African Americans are disproportionately overrepresented in the outfield. Although 71% of African American players are in the outfield, this is true of only 36% of Latino and 25% of White players. Whites dominate the catcher position, which is arguably the most central position in terms of proximity to decision making. Latinos are somewhat overrepresented at shortstop and second base. Whites are much more likely than Latinos and African Americans to occupy the infield positions of first and third base. These differences are statistically significant ($\chi^2[6] = 59.95, p < .0001$). In addition, a hierarchical log linear customized model revealed statistical significance for the respective cells in question (for example, Whites and catching, African Americans and outfield, Latinos at second base and short stop, and Whites at first and third). Thus, there is overwhelming support for Hypothesis 1.

Hypothesis 2 predicted that some variables such as speed, slugging, height, weight, and age would be related to position played. ANOVAs revealed that weight ($F[3,290] = 23.90, p < .001$), slugging average ($F[3,290] = 4.31, p < .01$), and speed ($F[3,290] = 22.23, p < .001$) are significantly related to position. On average, shortstops and second basemen weigh less and have much lower slugging averages than players in other positions; outfielders are faster and have higher slugging averages than infielders. In general, the faster and more powerfully the player hits, the more likely he will be playing the outfield. Consistent with the argument put forth by Margolis and Piliavin (1999), we found that various playing positions in baseball are occupied by players with specific kinds of skills and physical characteristics, thus lending support to Hypothesis 2.

Table 1 Players' Position by Race/Ethnicity

Position	Race							
	White		Latino		African American		Total	
Catcher	(32)	21.6%	(8)	10.7%	(1)	1.3%	(41)	13.7%
2nd base/shortstop	(29)	19.6%	(25)	33.3%	(13)	17.1%	(67)	22.4%
1st base/3rd base	(50)	33.8%	(15)	20.0%	(8)	10.5%	(73)	24.4%
Outfield	(37)	25.0%	(27)	36.0%	(54)	71.1%	(118)	39.5%
Total	(148)	100%	(75)	100%	(76)	100%	(299)	100%

Note. Likelihood ratio chi square = 63.96; $df = 6; p < .0001$. Pearson chi square = 59.96; $df = 6; p < .0001$.

ANOVAs were also run to determine if race/ethnicity is related to any of the control variables. The finding was that height ($F[2,291] = 3.05, p < .05$), age ($F[2,291] = 6.82, p < .001$), weight ($F[2,291] = 8.95, p < .001$), and speed ($F[2,291] = 26.43, p < .001$) are all related to race/ethnicity. Slugging is not related to race/ethnicity. In general, Latinos are shorter, lighter, and younger than Whites and African Americans. African Americans are by far the fastest of the three groups when speed is measured by percentage of steal attempts from first base. Although the White players in the sample attempted to steal second base only 8 times out of every 100 opportunities to steal, African Americans made 17 attempts per hundred. Latinos were somewhere in between with 11 attempts. What these findings indicate is that some of the skills and physical characteristics related to playing positions in baseball are also related to race/ethnicity. The question that remains is whether race/ethnicity has an effect on position played when skills and physical characteristics are held constant.

As Table 2 shows, the race/ethnicity effect on position played is significantly reduced once the performance variables are included in the regressions,

Table 2 Hierarchical Regression Results for Variables Predicting Player Position

Variable	<i>B</i>	<i>SE B</i>	<i>b</i>
Step 1			
African American	.66	.09	.42*
Latino	.22	.09	.14**
Step 2			
African American	.68	.09	.44*
Latino	.23	.09	.14**
height	.02	.02	.07
age	-.06	.01	-.04
weight	-.04	.00	-.01
Step 3			
African American	.54	.09	.34 [†]
Latino	.16	.09	.05
height	.01	.02	.05
age	-.05	.01	-.03
weight	-.06	.00	-.02
slugging	1.29	.42	.18**
speed	1.50	.43	.21 [†]

Note. $R^2 = .16$ for Step 1, $.17$ for Step 2, and $.23$ for Step 3. The model did not violate any of the assumptions necessary for linear regressions, and it was free from heteroskedasticity, etc.

* $p < .001$. ** $p < .01$. [†] $p < .05$

thus lending some support to Hypothesis 3. At Step 1, the African American effect (standardized beta value) is .42 ($p < .001$), but this is reduced to .34 ($p < .001$) at Step 3. The Latino effect is also reduced as control variables are added. Note as well that adjusted R-square is increased from .15 to .21 when slugging average and speed have been entered into the regression at Step 2. Although the African American effect was reduced with the introduction of control variables, it still has the highest standardized beta value at Step 3 in the regression, followed by speed and then by slugging average. These findings are very similar to those of Margolis and Piliavin (1999).

Because the Margolis and Piliavin study can be criticized for using a categorical dependent variable in its regression analysis, a multinomial logistic regression was used that does not require a continuous dependent variable. First likelihood ratio tests were run that control for all other variables because each individual variable is removed and replaced in the model. The results of this main-effects model were that race, speed, and slugging were the only significant predictors of position played, with race having the highest chi-square value ($\chi^2[4] = 34.12, p < .0001$) followed by speed ($\chi^2[2] = 22.11, p < .0001$), and slugging ($\chi^2[2] = 7.85, p < .02$). Models were then built to determine the any interactions and the possible reduction of race effects when the control variables speed and slugging average were introduced.

Table 3 presents the odds of being in one playing position or another by race. The relevant statistic for interpreting this table is the odds ratio. For instance, the odds of being in the outfield rather than catching if a player is African American are 46.9 times higher than the odds of being in the outfield rather than catching if the player is White. The difference in odds for African Americans being in the infield rather than catching compared with Whites is also significant. Being Latino is a significant predictor of being in the outfield versus catching, but it is not significant in the infield/catcher comparison. The Wald statistic and its associated p -value indicate level of significance.

In Table 4, the variables speed and slugging average are added to the model. When these two variables are controlled, the African American effect decreases considerably for the catcher/outfielder comparison but remains statistically significant. In Table 3 the odds ratio for African Americans is 46.9. In Table 4 it falls to 29.7, and the parameter estimate falls from 3.8 to 3.4. With the addition of speed and slugging to the model, the Latino effect ceases to be significant. The results are similar for the infield/catcher comparison. Table 4 shows that when speed and slugging are entered into the model, the odds ratio for African American ceases to be statistically significant. Speed, on the other hand, is highly significant, suggesting that infielders are faster runners than catchers regardless of whether they are African American or White.

Table 4 also shows that the odds of being in the outfield rather than in the infield are significantly greater for African Americans than for Whites, even when speed and slugging are held constant. Although slugging is a highly significant predictor of whether players are placed in the infield or outfield, speed is not statistically significant. The use of a multinomial logistical regression reveals that

Table 3 Logit Regressions for Positional Differences

	B	SE	Wald	df	Sig.	OR	95% CI for OR	
							Lower	Upper
Outfield/ catcher								
intercept	0.145	0.241	0.362	1	0.548			
African American	3.844	1.038	13.721	1	0.000	46.7	6.1	357.0
Latino	1.071	0.469	5.208	1	0.022	2.9	1.2	7.3
White	0.000	.	.	0	.	.	.	.
Infield/ catcher								
intercept	0.904	0.210	18.600	1	0.000	.	.	.
African American	2.141	1.045	4.199	1	0.040	8.5	1.1	65.9
Latino	0.706	0.440	2.568	1	0.109	2.0	0.9	4.8
White	0.000	.	.	0	.	.	.	.

Note. Sig. = significance; OR = odds ratio; CI = confidence interval.

Table 4 Logit Regressions for Positional Differences and Speed and Slugging

	<i>B</i>	<i>SE</i>	Wald	<i>df</i>	Sig.	OR	95% CI for OR	
							Lower	Upper
Outfield/catcher								
intercept	-0.781	1.112	0.493	1	0.4824			
slugging	0.056	0.023	5.795	1	0.0161	1.1	1.0	1.1
African American	3.391	1.055	10.325	1	0.0013	29.7	3.8	235.1
Latino	0.878	0.496	3.142	1	0.0763	2.4	0.9	6.4
White	0.000	.	.	0	.	.	.	.
speed ≥ 7%	2.003	0.535	14.020	1	0.0002	7.4	2.6	21.2
speed < 7%	0.000	.	.	0	.	.	.	.
Infield/catcher								
intercept	1.412	1.040	1.844	1	0.1744			
Slugging	0.016	0.022	0.538	1	0.4631	1.0	1.0	1.1
African American	1.796	1.058	2.884	1	0.0895	6.0	0.8	47.9
Latino	0.599	0.453	1.752	1	0.1857	1.8	0.7	4.4
White	0.000	.	.	0	.	.	.	.
speed ≥ 7%	1.505	0.513	8.591	1	0.0034	4.5	1.6	12.3
speed < 7%	0.000	.	.	0	.	.	.	.
Outfield/infield								
intercept	-2.193	0.688	10.169	1	0.0014			
slugging	0.039	0.014	7.510	1	0.0061	1.0	1.0	1.1
African American	1.595	0.340	21.983	1	0.0000	4.9	2.5	9.6
Latino	0.279	0.329	0.720	1	0.3962	1.3	0.7	2.5
White	0.000	.	.	0	.	.	.	.
speed ≥ 7%	0.499	0.279	3.194	1	0.0739	1.6	1.0	2.8
speed < 7%	0.000	.	.	0	.	.	.	.

Note. Sig. = significance; OR = odds ratio; CI = confidence interval.

controlling speed and slugging mediates the African American effect when comparing players in the outfield and catcher position, but that speed is far less significant in reducing that effect when comparing outfielders and infielders. This finding was missed by Margolis and Piliavin (1999) because they treated position played as a continuous rather than as a categorical variable in their regression analysis.

Discussion

In general, the findings of this study are consistent with Margolis and Piliavin (1999). The findings indicate that African Americans are overrepresented in the outfield over and above what can be explained by the fact that they are faster than other MLB players. This might mean, as social closure theorists have argued, that managers are assigning disproportionate numbers of African Americans to the outfield because of racial prejudice or for other reasons that have little to do with the skills players bring to the league. Role modeling and conscious decisions by African Americans to avoid positions in which they perceive discrimination to be taking place might also be at work here.

This study found that speed was the second most important variable influencing stacking. Regardless of whether athletes are African American or White, faster players are far more likely to be in the outfield than slower ones. In other words, this study found that the strong African American effect on playing position is in part mediated by speed. African Americans are overrepresented in the outfield in part because, at least in our sample of 1999 players, they are faster than Whites. This finding lends some support to the human capital argument that management might be placing players where they fit best based on relevant skills and physical attributes. Even though this finding does not discount the possibility of substantial discrimination in Major League Baseball, it does add another perspective to the stacking debate.

One explanation for why African American baseball players in our sample are faster and more likely to occupy outfield positions than Whites is that African Americans, because of their generally lower socioeconomic backgrounds, might have fewer opportunities than Whites to develop skills crucial to success in the infield, especially in the positions of catcher and pitcher. Because these skills are honed from an early age through practice and extensive involvement in the game, athletes with access to facilities, quality coaching, and competitive youth-development leagues will be more likely to occupy infield positions at the professional level than those without these experiences. As a result, African American players are more likely than others to find themselves in positions where speed can make up for lack of specialized skills. African Americans with average speed are less likely to make it to the major leagues than White players with average speed. Thus, the average speed of African Americans in Major League Baseball tends to be inflated.

This “unequal skill development” theory is consistent with Medoff’s (1986) economic hypothesis that minorities will avoid positions such as catching and pitch-

ing in which the costs of skill acquisition are beyond the means of children whose families are still feeling the effects of past discrimination. There is considerable impressionistic data to support the argument that African American youth have limited access to the specialized training needed to succeed in Major League Baseball. According to Verducci (2003), baseball requires bats, balls, gloves, and large (usually expensive) fields—none of which are as available to inner city Blacks as to White youth in the suburbs. Suburban parents often pay considerable amounts of money for their sons to attend showcase camps and to take private lessons in the off-season. According to Verducci, “the young African American without access to this kind of intensive training is hopelessly behind the learning curve.” (p. 6).

At the same time that interest in baseball has been declining in the Black community, the number of Latino players in Major League Baseball has been on the increase especially in high-skill positions such as shortstop and second base (Gonzales, 1996; Pattanayak & Leonard, 1991). Latinos constituted 28% of Major League Baseball players in 2002, up from 13% in 1990 (Lapchick, 2003). In addition to baseball academies sponsored by sugar refineries in Latin America that provide skill training for children, Major League Baseball also spends millions of dollars annually in scouting and development in the region (Klein, 1993; Verducci, 2003). Access to training facilities and expert instruction that begins at an early age might help explain the overrepresentation of Latinos in infield positions relative to Blacks.

One of the limitations of this study is that it provides no evidence that African Americans are actually less skilled for infield positions than are Whites. It is simply inferred from the finding that African Americans are faster and dominate outfield positions. A true test of the unequal skill development theory would require data on the actual skill-development opportunities open to Major League Players from varying racial and ethnic backgrounds. For instance, knowing the percentage of African American, Latino, and White ballplayers that actually played little league and college baseball would be a good measure of access to facilities and expert instruction. In addition, in-depth interviews with current and former Major League Baseball players concerning how they developed their skills over time would of course provide invaluable insights. Another limitation of this study is that we used a proxy for speed (i.e., the number of attempts per 100 opportunities to steal from first base). A far better measure would be players' actual times for the 40-yard dash or from home plate to first.

Although this study has not resolved the human capital–social closure debate, it does suggest that this is a fertile area for future research in human resource management in sport settings. Recent sport management research has focused on the impact of human and social capital in the hiring process (Barros & Alves, 2003; Cunningham & Sagas, 2002). Future research on stacking should also develop creative ways to examine the dynamics of social closure. Qualitative research might be especially useful in ferreting out discrimination that cross-sectional, quantitative techniques simply cannot discover. Another important area for

future research is the issue of whether position played while in Major League Baseball influences opportunities for advancement to career opportunities as managers, coaches, or other staff positions. In other words, does stacking influence career mobility, and if so, how does this work?

Conclusions

One of the conclusions of this study, and one that has major implications for sport management practice, is that it is often very difficult to identify discrimination in employment merely on the basis of a statistical imbalance. In the case of stacking, we found that positional segregation might be related to the skills players bring to the league, as well as to discrimination by employers, thus making stacking a far more subtle and complicated phenomenon than much previous research has indicated. There might be instances in the sport industry in which networks of White males purposefully exclude minorities for reasons totally unrelated to qualifications. The point is that the discovery of racial, ethnic, and gender segregation in the workplace is merely the starting point for academic research. The real challenge is to develop methodologies to distinguish between situations where discrimination is the cause of segregation and situations where groups are underrepresented because they lack relevant skills.

On the one hand, aggressive enforcement of civil rights laws is the most effective way to eliminate individual and institutional discrimination in sports and in other industries. On the other, providing minorities with the specialized human capital they will need to compete in the marketplace seems like a reasonable strategy for dealing with the legacy of historical discrimination. Major League Baseball, for instance, has opened an urban academy to teach baseball skills to young people in the Los Angeles area (Verducci, 2003). Along with on-field training, some of which will be provided by the major league scouting bureau, there will be classroom instruction and the use of computers to teach the sport. The goal is for each major-league club to have such an academy that would reach children as young as 8 years old.

Another implication of this study for management is that skill deficits at lower levels can be compounded over time to produce a glass ceiling effect (Maume, 1999). In the case of baseball, it can be argued that placement in the outfield might deprive African American players of leadership experience that infielders acquire by regularly interacting with coaches. This lack of exposure to strategic decision making might be a disadvantage for Black players who aspire to become coaches and managers. Some large companies, such as GE, McDonalds, Motorola, and Siemens, are attempting to deal with similar problems in the general workforce by creating their own "company universities" in which lower-level employees are taught the strategic management skills necessary for positions in upper-level management (Gerbman, 2000). Major League Baseball officials might want to think along these lines.

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