Minority Football Coaches' Diminished Careers: Why Is the 'Pipeline' Clogged?

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Minority Football Coaches' Diminished Careers: Why is the "Pipeline" Clogged?*

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Objectives. Research on minority representation and career trajectories in higher education represents a substantial body of evidence in the field; however, the empirical evidence fails to address a crucial area: intercollegiate athletics. This study aims to address the gap in the empirical work and study the career trajectories and representation of African-Americans and Latinos in NCAA FBS football coaching positions. *Methods.* A pipeline argument is often utilized to explain the underrepresentation of minorities in certain careers and industries. This pipeline argument is erroneous in this instance because of the number of minority players in college football that make up the "future coach career pool." We develop a position hierarchy in which previous assistant coaching positions are seen as stepping stones to an ultimate head coaching position. *Results.* We find that white and minorities coaches have different career trajectories and position hierarchies that ultimately lead to the underrepresentation of minorities at the head coaching ranks. *Conclusions.* Evidence suggests sharp differences in the likelihood of certain player positions and, in turn (and likely related), certain coaching positions to achieving head coach. The career utility hierarchy developed here seems to have some validity and, most important for present purposes, shows some considerable difference in the career stepping stones of, respectively, whites and minorities.

Despite decades of social and economic progress, sometimes dramatic and more often incremental, one finds few professions or lucrative occupations in which African-Americans and Latinos are well represented (Cohn, 2000). Researchers find evidence of both access discrimination and treatment discrimination (Greenhaus et al., 1990) in a wide variety of professional contexts, ranging from the physicians' postings in hospitals (Krieger and Sidney, 1996), to minorities' advancement in law firms (Johnson, 1997), to admittance into the priesthood (White and White, 1995).

Professional football is one of a handful of employment realms where one could make plausible claims to color blind hiring practices (Hine, 2003).[1]

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[1]In rare cases, sports and the military have worked in concert to promote desegregation. In 1942, four years before baseball's Jackie Robinson broke the color barrier, African-Americans

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Economic self-interest discourages discrimination in the hiring of professional athletes. But the National Football League has also made progress hiring minority coaches. As this article is being written, there are seven African-American head coaches among the 32 National Football League teams (NCAA, 2010). At 21.9 percent the number of African-American head coaches exceeds the percentage (13.6 percent) of African-Americans in the U.S. population in 2010 (Rastogi, Johnson, Hoeffel, and Drewery, 2011). One might argue that the percentage is well below the percentage (65 percent) of African-Americans *playing* professional football (Leeds and von Allmen, 2005). Nonetheless, one would be hard pressed to find many occupational fields with such a large percentage of African Americans in leadership positions.

In college football, the percentage of African-American head coaches is lower. As this article is being written, the 120 Football Bowl Subdivision (FBS) universities include ten (8.3 percent) African-American head coaches and one Latino head coach. There are several explanations as to why the percentage of African-American head coaches remains small, especially in relation to the percentage of African-American players. The current article focuses on one just one possible explanation—the effects path dependency on career trajectories. African-Americans are more likely to play certain positions (e.g., running back, wide receiver), which plausibly affects the initial assistant coaching positions African-Americans are offered, which, in turn, possibly affects perceptions of African-Americans' assistant coaching experience and the relevance of that experience to the requirements of head coach positions.

The core hypothesis of the article is that position channeling early in their playing careers leads whites and African-Americans respectively to gravitate to different positions (for example, with whites being overrepresented at quarterback and African-Americans being overrepresented at wide receiver). According to the channeling hypothesis, these early playing career outcomes have long-term, generally unanticipated consequences. For example, when choosing a linebacker coach it is more likely that someone who has played linebacker will fill the position. Similarly, someone who has played wide receiver will more often fill a wide receiver coaching position. The rub, however, is that the most common preceding step to becoming a head coach is to be an offensive or a defensive coordinator and some position coaches (e.g., quarterback coach, linebacker coach) are much more likely to be in demand for coordinators than are others (e.g., wide receiver coach, running backs coach). Thus, it is hypothesized, a cascading set of career outcomes tends to militate against African-Americans' elevation to head coach: African-Americans are more likely than whites to play positions such as running back and wide receiver and, as a direct consequence, are more likely to

were playing football alongside whites at the Great Lakes Naval Officer Training Camp (Stillwell, 1993).

coach these positions than others (such as linebacker or quarterback). These initial assistant coach positions, in turn, may give African-Americans a less select route to being a coordinator, and this lesser likelihood of achieving the coordinator position reduces their likelihood of obtaining a head coaching position.

There is no claim, of course, that the channeling hypothesis is the only or the best explanation to the low percentage of African-American head coaches, only that it is an explanation that has not been systematically explored. If the explanation is correct then channeling could explain a pernicious and possibly intractable impediment to increasing the percentage of African-American football head coaches. We note that the channeling explanation is not in conflict with any of the better-known explanations (e.g., racism, differences in career options, differences in social capital and mentoring); rather it is complementary.

The authors have developed data on head coaches, assistant coaches, and player positions and provide a tentative test of the core hypothesis by charting career trajectories and determining the apparent importance of various positions to the possibility of being selected as a head coach. However, before describing the data in more detail, the context of race and university athletics, as they pertain to football career trajectories and discrimination, is considered below.

Contemporary "Big Time" College Sports in the Context of Reform

While academic literatures have not entirely ignored college sports or the NCAA (see, for example, Toma and Cross, 1998; Benson, 2000; Mangold, Bean, and Adams, 2003; Gaston and Hu, 2009; Clotfelder, 2011), there are both economic and social forces suggesting even more attention to university athletics is necessary.

Financial trends provide a sobering rationale for doing so. With the top university athletic program budget exceeding $240 million in 2006 (Shughart, 2010) and many program budgets growing at a much faster pace than academic budgets, continued scrutiny to college athletics seems well warranted. Although there has been recent scholarship regarding the tension between academics and intercollegiate athletics (e.g., Colwell, 2010; King, Sexton, and Rhatigan, 2010; Lawrence, Ott, and Hendricks, 2009), most focus on efficiency and accountability of academic versus athletic budgets, including the operations of athletic facilities (Palmero, 2010).

According to the Knight Commission Report (2010), spending on athletics in the 120 FBS universities grew by 37.9 percent during the period 2005–08, whereas academic spending, including costs for instruction, student services and overhead costs, grew by only 20.5 percent. To put it another way, per athlete spending at universities associated with some major athletics conferences has during the same 2005–08 period grown from four times median education spending per student to nearly 11 times (Knight Commission, 2010:5).

In developing its recommendations aimed at (in the title of the report) "Restoring the Balance," the Knight Commission Report notes that some high-profile college programs, particularly in football and basketball, have evolved into elaborate operations that rival professional sports teams in the numbers of coaching and support personnel as well as compensation for those staff. This can also be seen in the *NCAA Division I revenues and expenses report* (Fulks, 2009). The report shows that "[2009] median generated revenues [in the Football Bowl Subdivision] have increased by 23.8 percent since the 2007 fiscal year" (Fulks, 2009:12).

The present study focuses on an aspect of NCAA football not examined in the Knight Commission Report: head coaching careers. Here, too, one finds crucial economic and social rationales for examination. One indicator of the economic importance of football coaching is that the median salary for a head coaching position in the FBS was $1,238,000 in 2009 (Fulks, 2009). It is not uncommon for head football coaches to earn four or five times the salary of university presidents and it is customary for athletic budgets to be separate from other aspects of the university budgets as well as to live by different rules even during times of recession (Clotfelder, 2011).

The social importance of the racial composition of FBS football coaches goes well beyond even the hundreds of minority assistant coaches who have bumped up against the head coaching glass ceiling. Racial discrimination among head football coaches provides important clues to the tenacity of racial discrimination in many areas of life. Football is one of the few occupational domains where it is easy to put aside market supply arguments and focus on other explanations of discrimination. Head coaches, with rare exceptions, come from the pool of assistant coaches (or previous head coaches) and this pool includes substantial percentages of minorities. Because the pipeline argument (detailed below) can, arguably, be set aside, football coaching provides an excellent crucible to study the mix of factors leading to underrepresentation and job discrimination.[2]

Minority Hiring in Higher Education: The "Pipeline" Argument

Higher education is one of the U.S. social institutions most insistently expressing concern about minority recruitment, retention, and advancement (Agrawal, Vlaicu, and Carrasquillo, 2005; Alon, 2009). Most of the research focuses on hiring faculty members and shows a strong consensus that minorities continue to be underrepresented in virtually every discipline and field of

[2]It is important to note a caveat: The "pipeline" depends not just on demographics but aspirations. In the absence of contrary information, this study assumes that minorities and whites are equally likely to aspire to be coaches.

higher education (Light, 1994; Astin et al., 1997; Turner and Meyers, 2000; Aguirre, 2000; Harvey, 2001).

There are many arguments about the limited success in hiring minorities in faculty positions, including poor mentoring of minority doctoral students, minorities' more limited resources for occupationally relevant social capital and network ties, and the many varieties of discrimination (e.g., Menges and Exum, 1983; Johnsrud and Sadao, 1998; Turner, Meyers, and Cresswell, 1999). However, one of the most common reasons cited for limited success in hiring minority faculty is the "pipeline" argument: that there are few minorities in either the doctoral student or junior faculty "pipeline," or, to put it another way, that there is simply an insufficient number of available minorities to recruit (Widnall, 1988; Maton et al., 2006; Barr, Gonzalez, and Wanat, 2008).

While the pipeline explanation has been heavily criticized as being insufficient (National Science Foundation, 1998; Mazon and Ross, 1990), there is no disagreement about the fact that in many academic fields (White, 1989) relatively few minority doctoral students or faculty are available. Does racism manifest itself in graduate student admissions, or in standard educational achievement tests, or much earlier in the racism of limited expectations? Or is it simply the case that highly educated and talented minorities have many options and that they often choose professions (e.g., physicians, lawyers, finance) more lucrative than university faculty positions?

The Football Pipeline

Discrimination may well play a role in hiring coaches (Kamphoff and Gill, 2008; Lapchick, 2010). But what of the pipeline undersupply argument? NCAA football gives us not one but two very different sets of careers to examine in connection with pipeline arguments. In the case of college football players, the pipeline flows well and there is little evidence that race matters in recruiting or, if it does, it pales in comparison to athletic ability. Indeed minority students are far overrepresented. Whereas less than 20 percent of high school students are minorities (and many fewer university are minorities), 54.9 percent of all football players on FBS football teams are minorities, chiefly but not exclusively African-American (NCAA, 2010). Then the pipeline continues to flow generously into the lucrative world of professional football. According to Conlin and Emerson's (2006) data, 64 percent of the players drafted by NFL teams are nonwhite and nonwhites occupy nearly 75 percent of roster positions.

If collegiate football players provide a picture of an effectively flowing pipeline, college coaching is quite another matter. As mentioned above, the percentage of minority head coaches currently stands at about 13 percent and has never much exceeded that figure. The contrast between outcomes for the college *player* pipeline and the college *coach* pipeline provides an excellent

basis for considering the broadest and most important issues of race and occupational opportunity.

A Brief History of Minorities and Football Coaching Careers

Even the most casual football fans understand that some highly skilled college football players go on to incredibly lucrative professional careers. True, the chances are slim, only about 12 percent, that any given Division IA[3] college player will be drafted into the National Football League, and the NFL is the only professional league paying enormous salaries to any of its players (Hendricks et al., 2003). The dream of NFL wealth is further attenuated by the fact that NFL player incomes are heavily skewed, with just a handful of players making more than $10 million per year while the median income is about $770,000 per year (Breer, 2010).

A related professional dream, one less mythologized and not so lucrative, has much to recommend it: the dream of being a college (or professional) football coach. Indeed, the coaching career is in some respects a much better bet than the NFL career. First, there is a much larger market, with more than 350 Football Championship Subdivision (FCS) colleges and universities employing, in total, more 3,000 coaches. Second, coaching is often a long-term career. While it is true that coaches, too, are subject to uncertainty and that most coaches are fired at some point, most are also rehired. The average tenure at any given university football program may be a short one, but the average career is a long one. It is true, however, that white coaches have a longer coaching tenure on average than black coaches (Sagas and Cunningham, 2005). Coaching also has the advantage that physical jeopardy threatens one's charges rather than oneself.

In recent years, some universities have begun to pay head football coaches amounts equivalent to the second tier of NFL stars. According to *USA Today's* (2009) most recent study of head coaching compensation, 25 college head football coaches earn more than $2 million per year and four coaches make more than $4 million salary. The *average* pay for head football coaches in the 120 FBS teams is $1.36 million (*USA Today,* 2009). When one considers that many head football coaches' salaries are complemented with a wide variety of other income sources, including foundation support, pay for television shows, and fees for personal appearances and advertising, the head coach's compensation at many universities with potent football programs compares favorably to other sports and entertainment compensation.

Data show[4] that minorities represent 38 percent of all FBS coaches, including both assistant coaches and head coaches.[5] While the 38 percent figure is

[3]Division IA is comparable to the current FBS schools as reorganized by the NCAA in 2006.
[4]These are descriptive measures of the data explained below in the data and methods section.
[5]This figure includes all salaried coaching positions in FBS programs, but not unpaid internships or graduate assistantships.

somewhat less than the current percentage of minority players on the rosters of the FBS teams, it nonetheless eclipses minority representation in most professions. However, of the approximately 400 minority coaches in FBS programs, remarkably few are head coaches.

The NCAA has taken some steps to increase the likelihood of minorities being chosen as head football coaches. For example, the NCAA has worked with the Black Coaches Association to produce an annual "hiring report card." Since the report card procedure was put in place in 2004, African-Americans have been 30 percent of the interview pool for head football coach vacancies (NCAA, 2010). The NCAA reports that 76 percent of FBS schools interviewed at least one minority candidate for head coaching positions between 2004 and 2007 (Nichols, 2008). Nevertheless, the actual hiring of minority head coaches has changed little.[6]

Explanations for Minority Underrepresentation among College Football Coaches

In considering the gross underrepresentation of minorities in college coaching, a number of hypotheses have been put forward and at least some of these have been put to test.

Aspiration and Attrition: Do minorities have less sustained interest in coaching careers? Certainly, minorities are interested in coaching; indeed, minorities occupied more than 28 percent all NCAA Division I-A assistant football coaching positions in 2002 (DeHass, 2003). However, the shortfall is in head coaches and it is at least possible that minorities are less interested in head coaching positions (Cunningham, 2004). One reason to expect that minorities would be less interested in head coaching positions is that they may have already been subject to discrimination and unwilling to pursue more visible positions where discrimination could prove even more pernicious. A study now more than 25 years old (Latimer and Mathes, 1985) found that less than half of the African American assistant coaches wished to become head coaches. In a more recent study, Cunningham (2004) found that African American student athletes processed less interest in becoming coaches than do white athletes.

Related to the differential aspiration hypothesis is an attrition hypothesis. While there are few, if any, longitudinal studies of coaching entry and exit patterns, one study (Cunningham, Sagas, and Ashley, 2001) studies NCAA

[6]These disappointing results have led some to suggest that the FBS develop a rule similar to the NFL's "Rooney Rule." The Rooney Rule, put in place in 2003 and mandating that a percentage of interviewees for NFL head coaching positions be minorities, seems to have had results (Maravent, 2006). A higher percentage of NFL coaches are minorities, including some who have had considerable success as either a Superbowl team or as an elected "Coach of the Year." However, the NCAA notes that it has no authority to make a rule similar to the Rooney Rule; hiring decisions are locally controlled.

assistant basketball coaches' intention to leave and found somewhat higher rates among African-American coaches than among whites. A more recent and comprehensive study (Cunningham, Bruening, and Straub, 2006), examining assistant football and assistant basketball coaches, found no significant differences in white and minority coaches' interest in becoming a head coach or in their intention to apply for such a position. Overall, we suggest that if either aspiration or attrition plays any part of the explanation of the minority head coach deficit, it is a very small part.

Is a legacy of discrimination affecting current hiring practice? Another hypothesis about the low percentage of minority coaches seems more credible, but has not heretofore been systematically advanced or tested in the published literature. Minorities were not fully welcomed to college football until the late 1960s.[7]

Possible evidence of discrimination: compared to whites, minorities have, on average, briefer tenures in college football coaching (Sagas and Cunningham, 2005). With the exception of a few coaches at HBCUs,[8] there are no minority coaches at the tail of the distribution, no Joe Paternos or Bobby Bowdens, both of whom have had more than 60 years' coaching experience, but also few with as much as 20 years' coaching experience.

Is it something about football? Perhaps there is something about the context of the game of football, its social structure, impact on universities, or visibility, that militates against the choice of minority coaches? A comparison of the two most attended and watched NCAA sports, basketball and football, may be instructive.

A first point to note is that basketball, like football, has not hired minority head coaches in percentages close to the number of minority players. Basketball is dominated by African-American players, making up more than 60.4 percent of the rosters of 346 Division I-A teams (Bray, 2003). Compared to football, there are, of course, many more minority head coaches, in part by virtue of the many more available positions. Data (DeHass, 2003) show that 25.7 percent of basketball head coaches are minorities and 30 percent of assistant head basketball coaches (NCAA, 2009). In short, while minorities still lag in basketball (at least in proportion to the number of minority players), the gap is not so large as it is in football.

What explains the lesser access of minorities to head coaching positions in football? One study (Cunningham, Bruening, and Straub, 2006),

[7]During the 1966 season, Jerry LeVias of Southern Methodist University became the first African American to play football in the Southwest Conference. In 1967, the University of Kentucky's Nat Northington became the first African American to play football for an SEC university.

[8]There was one African-American coach with more experience, and with more wins, than either Paterno or Bowden, the two football coaches with the most FSB and Division I-A wins. Eddie Robinson was head coach at Division I-AA Grambling State (Louisiana) from 1941 to 1997. During that period, he won more games than any other coach. However, he was never offered an interview with any Division I-A or FBS program (Hughes and Wright, 2003).

perhaps the best available research on college coaches' career aspirations, sheds light on minority assistant coaches' interest in head coaching positions. The authors conducted interviews with 41 assistant football coaches and 16 men's basketball coaches and obtained survey results from 215 assistant football coaches and 114 assistant basketball coaches. The Cunningham and colleagues' study finds that minority football assistants are significantly more likely to view race as a barrier to obtaining a head coaching position.

Regional concentration of the sports may be related. Compared to football, there are more universities playing competitive basketball in the Northeastern United States, an area where sports programs have for many decades been integrated. Many of these are at relatively small colleges or universities (e.g., St. John's University, University of Rhode Island, Siena, St. Francis), ones that either have no football program or have small ones that are no part of the highly visible FBS group.

Another possible reason for greater evidence of minority head coaches in basketball, compared to football, is the fan base. Television viewing rates of the respective sports differ according to minority status (Aldrich, Arcidiacono, and Vigdor, 2005) and this is as true of sports viewing as other programming. For example, African Americans comprise (on a per capita basis) a much larger proportion of the basketball television audience than they do of the football television audience. If higher percentages of minorities watch basketball it may be the case that those hiring coaches would take this point into account, either strategically or subconsciously.

Is whom you know more important than what you know? While we have no data to investigate the role of networks in the hiring of coaches, there is every reason to believe this is a major factor and there is some reason to believe that it is a factor in discrimination. It is well documented (Rees, 1966; Montgomery, 1991) that in nearly every field, including higher education (Burris, 2004), people tend to hire people they know and they tend to hire people referred by those they know and trust. This phenomenon is as true among minorities as it is among whites (Fernandez and Fernandez-Mateo, 2006).

The Channeling Hypothesis

Each of the explanations of the minority head-coaching gap discussed above may have some validity, but the focus of the current article is on a different, complementary explanation, the channeling hypothesis. The idea of channeling is not specific to athletics. In a wide variety of occupations, minority advancement can be hindered by certain jobs being viewed as appropriate for minorities (the "occupational ghetto") whereas others are reserved for whites (Beck et al., 1980; Pomer, 1986; Maume, 1999).

In summary, the reasoning behind the channeling hypothesis is as follows:

1. In high school football, minorities (especially African-Americans) tend to play positions requiring a higher degree of raw athletic talent as opposed to learned craft skills or strategy.
2. In college football, minorities tend to play the positions they played in high school; most often positions requiring a higher degree of raw athletic talent as opposed to learned craft skills or strategy.[9]
3. College assistant football coaches tend, especially at the outset of their careers, to coach the positions they played.
4. Coordinators tend to be recruited from assistant coaches who coach positions (e.g., quarterback, offensive line, linebacker) requiring a higher proportion of learned craft skills and strategy, and are least likely to be recruited from assistant coaches who coach positions requiring a higher proportion of athletic skill (e.g., defensive line, cornerback, wide receiver).
5. Offensive and defensive coordinators are the most common assistant coaching positions leading to head coaching positions.
6. Since fewer minorities are coordinators, fewer become head coaches.

The implications of channeling are complex and possibly profound, but we should begin by noting that any evidence of channeling is not *necessarily* evidence of discrimination. The fact that, say, an African-American plays running back in high school could be a result of coaches' stereotyping, but, of course, players are not always pawns and likely have some role in position selection. Thus, the position played could relate to social-cultural dynamics that lead minorities (or white players) to prefer certain positions to others. The highly controversial argument, one that the present data do not permit us to make visible, is that African-Americans tend to play certain positions (and, more generally, tend to numerically dominate football, track and field, and basketball) because of superior physical abilities. However, the best available evidence (see Hunter, 1998, for a critical overview) indicates that race-based physical differences do *not* appear to provide a valid explanation.

As one might expect, given the needs for an expansive longitudinal database, no empirical research has focused on the channeling explanation of coaching careers. However, there is at least some discussion of channeling and one study provides evidence about *perceptions* of channeling. In responses to a survey conducted by Hill (2002), and summarized in a later study by Hill (2006), minority coaches perceive they are being channeled into particular coaching positions. (At the time of the research Fitzgerald Hill, who is African-American, was head football coach at San Jose University.) In Hill's

[9]Position changes from high school to college are not unprecedented. One of the most common switches is from quarterback to wide receiver (i.e., a strategy position to a position based more on speed and agility). While there is no systematic evidence on this topic, it is possible that African-Americans are more likely than whites to be switched from quarterback in high school to some other position in college.

survey of university coaches (white and minority) a questionnaire item was included asking whether respondents agreed that, "Black coaches are likely to be assigned to coach skill-positions[10] or noncentral positions (receivers, running backs, outside linebackers, defensive line)." Among all respondents, 82 percent agreed and 7 percent were unsure. Among white coaches, 29 percent agreed with this statement. Thus, there is at least a strong *perception* of channeling and tokenism and these perceptions differ by race.[11]

Data and Methods

The present analysis uses the career histories of head coaches from all 120 NCAA FBS programs as well as a sample of assistant coaches from those programs.[12] Panel data gathered by the authors include career histories for each of the head coaches' coaching jobs between 1964 and 2010. The attributes of the 120 head coaches vary considerably with salary ranging from a low of $170,000[13] to $4,303,000 per year with a median of $1,255,540. Minimum time in coaching ranged from 10 to 60 years with 27 years as the median. Age ranged from 34 to 83 years with 51 years as the median.

The data for assistant coaches are based on a stratified sample. The target population for the sample is the 2,470 assistant coaches in NCAA FBS and FCS football in 2010.[14] A stratified sample of assistant coaches is employed not only because of the fact that the assistant coach population is much larger than the head coach population but also due to the need to ensure comparable percentages of minority and white coaches. Data were gathered for a set of 50 randomly selected minority assistant coaches and 50 randomly selected white assistant coaches. There is less variance among the assistant coaches than one finds in the head coaching group. The coaching tenure ranges from 2 to 44 years with a mean of 18 and the age ranges from 29 to 70 with a median of 43. Due to limited availability, salary data were not obtained.

Data collection began in May 2009 and concluded in May 2010. Career history data for head coaches were obtained from the official websites of the 120 FBS teams. Not all of the websites were complete with respect to coaches'

[10]The term "skill position" is generally used to refer to those positions in football that rely more on *physical* skill than strategy.

[11]In this same study (Hill, 2002), participants were asked to respond to this item: "On occasions when black coaches are interviewed for head coaching positions at predominantly white institutions, they typically are 'token' interviews." Among black respondents, 78% agreed and 16% were unsure. Among white respondents, 25% agreed, but more (29%) were unsure.

[12]Data collection ended in 2010, thus the data are for individuals who were incumbents in 2010. About 15% of head coaching incumbents have changed between 2010 and June 2012.

[13]Reported salary information is not always sufficient to understand earnings. Coaches sometimes take money in deferred compensation packages, from nonuniversity sources, from media ties and so forth. Few of the FBS head coaches have a total compensation package of less than $1 million per year.

[14]Assistant coaches from the FCS often move to the FBS as a vertical advancement. It is therefore useful to examine the careers of these assistant coaches as well.

employment histories. In cases of incomplete data, the authors obtained data from the website of the coaches' previous teams or from alternative sites such as the website Rivals.com.

The career history data for the head coaches include information about every previous position coaching title and team affiliation for each of the coaches, as well as the years occupying those positions. In addition to data about coaching careers, the researchers also gathered data about the head coach's year of college graduation (or, in a few cases, year the coach left college without graduating), the coach's alma mater, and whether the coach had experience in professional football (either playing or coaching). Data were gathered about the head coach's playing position in college football (if he played in college, which most had), as well as date of birth, coaching tenure, and, most important for present purposes, the coach's race.[15]

"Career Utility" for Assistant Coaching Jobs and for Playing Positions

The channeling hypothesis suggests that certain assistant coaching positions and certain player positions present advantages for becoming a head coach. Testing this hypothesis requires a calculation of the utility of player positions and assistant coach positions as a career step. For each of the set of possible steps (e.g., all assistant coaches positions and all playing positions by category), the authors sought empirically to derive these "career utilities."

Related Approaches

Two quite different sets of studies served as the inspiration for the approach used by the authors. First, political scientists have developed means to identify the utility of congressional committee assignments (for an overview see Groseclose and Stewart, 1998), a backward mapping of career moves from one committee to another more desirable one. Assessments of utility are based on moves from committee to committee, moves that are in large measure based on seniority and individual preferences. The method closest to the approach employed here is Munger and Torrent's net transfer dominance approach (1993), but, in reality, the present data are insufficiently robust to permit an exact replication of the most common approaches to assessing utility of committee assignments. However, in some ways the coaching careers are more straightforward inasmuch as the head coach is clearly the top of the hierarchy

[15]Some of the data (in no case more than 5 percent) were unavailable. In most cases the playing data proved most problematic, with some histories simply stating that the coach was "a four year letterman" for a particular team, but with the position not indicated. In such cases, playing position was excluded from analysis.

but in Congress a few of the very top committees seem equally attractive, depending on idiosyncratic preferences.[16]

The second inspiration for the current approach, again one that is instructive but is necessarily different from the approach used here, comes from labor economics. Our approach most closely resembles that of Baker and colleagues (1994), a study in which the authors developed levels of a firm hierarchy by assigning titles to these levels and then calculating the importance of titles in career progression. However, while the Baker and colleagues study is perhaps the earliest using an approach similar to ours, subsequent studies similarly model career progression in business sectors (e.g., Gibbons and Waldman, 1999; Treble et al., 2001). Our "firm" is the NCAA football industry and, unlike the labor economic studies, there is a fixed endpoint career, the head coaching job.[17]

Measuring Career Utility

For the football coach career utility tables we began with the data about head coaches' career trajectories. For each of the head coaches we gathered data about all the assistant coaching positions occupied prior to their becoming head coaches, including the years during which they occupied a particular assistant coaching position.[18] Thus, for example, we determined if they had ever been a linebacker coach and, if so, at what stage in their career. Some who had been linebacker coaches may have assumed the position before being offensive coordinators but after being defensive line coaches. Others may have been linebacker coaches immediately preceding being head coaches. Still others may have never been linebacker coaches at all.

Some assistant coaching positions are more likely than others to lead to head coaching jobs. Thus, as we shall demonstrate below, the most common penultimate career step is being offensive coordinator. By contrast, it is quite uncommon (though not unprecedented) for the wide receiver coach position to be the step immediately prior to being head coach. An important question,

[16] For example, while most would find the Ways and Means or the Rules Committee highly attractive, in some instances, the Agricultural Committee might be a top destination for those from farm states.

[17] One could, of course, argue that some FBS positions are more desirable than others. However, such calculations are not straightforward since they involve not only records, history, and salary factors but also a variety of idiosyncratic issues such as regional and family attachments. Moreover, since our chief concern is with race and head coaching appointments, we are not concerned at this points with the relationship of race to perceived quality of head coaching appointment (and, indeed, from knowledge of history we expect that there is no relationship).

[18] Some of the coaches had concurrent titles, meaning that they simultaneously played multiple roles on the coaching staff. For instance some offensive coordinators also were quarterback coaches. The authors kept a record of these concurrent titles, but only considered the higher position (for example offensive coordinator rather than quarterback coach) for the calculations explained below.

visited in the findings, is "what was the position occupied immediately before becoming a head coach?"

In considering the career utility of various steps toward becoming head coach it is not enough to examine only the most recent position before attaining head coach. A related question: "how important is it for obtaining a head coach position that any particular assistant coach position be occupied *at some point*?" Answering this question required going back further in careers than just the job immediately prior to the head coach job. The researchers decided to examine the five most recent assistant coaching positions occupied before obtaining a position as head coach. That number of observations served well because coaches tend to become head coaches after five assistant coaches or less. Those having more than five assistant positions very rarely become head coaches at any point in their careers but are rather lifetime assistant coaches.

The career utility evaluations are derived from determining empirically, *whether* coaches occupied a particular assistant coaching position and, if so, *at what career stage* (i.e., how many steps were taken between that particular position and the head coach position?). For example, the data show that head coaches are more likely to have at some point been quarterback coaches than to have been defensive line coaches.

The researchers examined up to 10 career steps for coaches, leading ultimately to becoming head coach in the current position. The identification of 10 levels is essentially arbitrary (five could have been chosen or some other number), but the use of 10 levels permits the demonstration of greater variance in career sequences. The 10 steps represent a set of those that may have been occupied prior to obtaining the head coach position. Recall, we examine only the five most previous jobs for the head coaches, but those five jobs may have included a great many possibilities, as many as there are types of assistant coaching jobs. Thus, our ten steps are drawn from all the data for all coaches and grouped according to the likely order (reflected in the aggregate data) in each step in the career trajectory.

Some coaches take uncharacteristic routes to head coach but the step table can be thought of as reflecting tendencies (such as, for example, the fact that a great many coaches are offensive or defensive coordinators before becoming head coaches). Table 1 provides the 10 levels along with the empirical observation of the number of head coaches, according to race, who at some point occupied a position at each of the respective levels. However, the levels are based not on the number who ever occupied the respective positions but on the most likely sequence in careers. Thus, for example, Level 6, occupied by linebacker, offensive line, and tight end coaches, is more numerous than Level 7, quarterback coaches, indicating that more head coaches once occupied the Level 6 position. But this is simply because the Level 6 position typically includes five to ten coaches on any given team whereas there is only one quarterback coach. The quarterback coach is a "higher level" because it is more commonly associated with ultimately becoming a head coach. It should

TABLE 1

Empirically Observed Valuation of Coaching Positions Leading to *Current* FBS Head Coaching Position

Valuation Hierarchy (Highest to Lowest)	Coaching Position Type	Valuation Points, All Head Coaches
Level 10 (void)*	Head coach, FBS or NFL	
Level 9	Head coach, other college	436
	Head coach, other professional	
Level 8	Offensive coordinator	655
	Defensive coordinator	
	Assistant head coach	
Level 7	Quarterback coach, FBS or NFL	102
Level 6	LB, OL, TE coach FBS or NFL	178
Level 5	DB, RB, WR coach FBS or NFL	222
Level 4	Collegiate assistant, not FBS	9
	Professional assistant, not NFL	
Level 3	High school coach	68
Level 2	Student assistant or intern	20
Level 1	None of the above	

*Given the assumptions above, there is no calculation for FBS head coach or NFL head coach. These are assumed to be equivalent "top of the food chain" positions and, thus, movement from one to the next is for presented purposes stipulated to be a lateral (and thus unscored) "entry" move. Similarly, moves *from* FBS or NFL coach to any other position are assumed to be nonvoluntary and the beginning of a new career chain and, thus, are unscored as "exits."

also be noted that the coaching positions in the various levels are grouped together because each of the positions has about an equal chance (controlling for numbers occupying the position) of being a step in the hierarchy toward attaining a head coach position. Of course, there are exceptions in which coaches skip levels or have a nonlinear career trajectory, but the career utility hierarchy reflected in Table 2 gives an accurate in-aggregate picture of the levels or steps taken by head coaches to achieve the ultimate coaching position.

Table 1 also provides "valuation points." To generate values for the career utility hierarchy for the levels of coaching positions, the most recent position was valued higher than earlier positions because (we assumed, ceteris paribus) that the most recent positions should have the most effect on one's current position title. The most recent position, the one immediately preceding appointment as head coach, was valued at "5," the next most recent at "4," then "3," "2," and "1" for the fifth most recent position. For example, Level 8 includes all coaches that held the titles of "Offensive Coordinator," "Defensive Coordinator," or "Assistant Head" coach in their five most recent positions. If 5 individuals held those titles in their most recent position, 5 individuals held those titles in the second most recent position, 5 in the third most recent position, 5 in the fourth most recent position, and 5 in the fifth most recent

TABLE 2

Head Coaches' Playing Positions

	DB	DL	FB	LB	OL	QB	RB	TE	WR	None	Unknown
Black	6 *46.1%*	0	0	2 *15.4%*	0	2 *15.4%*	1 *7.7%*	0	1 *7.7%*	0	1 *7.7%*
White	17 *16.0%*	5 *4.7%*	2	13 *12.3%*	15 *14.4%*	31 29.3%	1 *.9%*	5 *4.7%*	9 *8.5%*	7 *6.7%*	3 *2.8%*
Total (Exp) *n*/22	4 18.0%	4 18.0%	1 4.5%	3 13.6%	5 22.7%	1 4.5%	1 4.5%	1 4.5%	2 9.0%	0	0
Total (Obs) *n*/120	23 *19.3%*	5 *4.2%*	2 *1.7%*	15 *12.6%*	14 *11.8%*	33 *27.3%*	2 *1.7%*	5 *4.2%*	10 *8.4%*	7 *5.8%*	3 *2.5%*

position then Level 8 would receive a valuation score of 75: $((5 \times 5) + (5 \times 4) + (5 \times 3) + (5 \times 2) + (5 \times 1))$. The valuation score therefore contains information about the number of coaches in the level and when the coaches held a title in that level relative to their head coaching title. The level with the highest valuation score indicates individuals in these positions are most likely to achieve a head coaching position in their next career move.

Findings

Findings are presented in two groups. First, data are examined for the population of head coaches in FBS universities. Then data are examined for a sample of assistant coaches. In the first case, the head coaches, the chief concern is to understand the career trajectories, primarily as a function of previous playing and coaching, focusing especially on differences between white and minority head coaches. In the case of the assistant coaches the concerns are similar but clearly some of these assistant coaches will have trajectories that will lead to head coaching positions, some will never be head coaches, and a few have been head coaches, have been fired, and are now assistant coaches.

The Role of Playing Experience

When does a coaching career begin? The graduate student assistant coach? Is it the first full-time job? Or does the coaching career actually begin as a player? We are assuming in this study that the coaching career begins with the first formal position, whether or not full time. However, we suggest that the coach's college playing position has a significant role in career paths. And almost all have at some point been college players. Our data show that 94 percent of head coaches and 98 percent of the assistant coaches in the database were themselves college players.[19]

The researchers assume a strong role for path dependency and suggest that one's playing experience relates to one's subsequent coaching trajectory. Channeling, we argue, begins early. Table 2 provides information about head coaches' college playing positions.[20] The table provides information for 120 of

[19]However, many were not players with Division I or FBS teams. The data suggest that while playing experience is important, though not entirely a prerequisite, for attaining a head coach position, playing in a bigger arena provides no particular advantage.

[20]The data are a simplified version of records provided on websites and other sources. Some coaches played more than one position and some of the older coaches played on both defense and offense. In cases of more than one position the researchers chose either the first listed or, when known, the one played most often. The table also collapses much detail. For example, defensive back (DB) includes original data listed as defensive back, corner back, and safety. Other coding: defensive line (DL) includes defensive tackle, defensive end, and nose guard; linebacker (LB) includes all data listed as linebacker (e.g., middle linebacker, outside

the coaches (with the one Asian coach omitted and with the Hispanic coaches included under White).[21]

Even apart from race, the playing positions are not proportionally represented among the coaches. Examining the cells for total expected and total observed, one sees marked discrepancies. The most obvious example is the quarterback position. We would expect, from random chance alone, that only about 4.5 percent of all head coaches would have played quarterback.[22] In fact, some 27 percent of the coaches played quarterback (and the number is conservative in the sense that the 27 percent is for all coaches and several did not play football in college). Moreover, examining the difference between the expected and observed playing positions, the largest positive gain is so large for quarterback that it has the effect of rendering all other positions at deficit. Thus, quarterback is clearly *the* position most associated with contemporary head coach status. Quarterback is so dominant that it is useful to consider the data with quarterback omitted. In doing so, we find that other positions that have positive value include defensive back, linebacker, tight end, and wide receiver. The clear deficit positions are defensive line and running back.

With one exception, the results are in accord with the usual distinction between positions requiring chiefly athletic talent and those requiring more craft, structure, and strategy. Defensive line and running back chiefly rely on physical talents—size, speed and quickness, and agility—with a premium on reaction. By contrast, offensive line positions have planned plays and blocking patterns that are often complex and require an ability to check off (change assignments) at the line of scrimmage. The exception here is wide receiver. Though wide receivers are required to run pass patterns, most assignments are straightforward and habituated and the key elements are speed and hand-to-eye coordination, neither of which can easily be taught. Nonetheless, wide receivers are well represented. That fact provides a segue into considering differences in race.

linebacker); offensive line (OL) includes center, offensive guard, and offensive tackle, but not tight end (TE), which has different responsibilities, including receiving; quarterback (QB) includes only those listed explicitly as quarterback and there was no ambiguity in the data (e.g., none of the coaches was a single wing tailback); fullback (FB) includes only fullback and is not listed as part of running back due to the quite different responsibilities of the respective positions; running back (RB) includes those listed as running back or tailback; wide receiver (WR) includes those listed as wide receiver, split end, and flanker.

[21]This Hispanic coach in question is not listed as of Hispanic descent in self-reported data but rather as "white."

[22]The simple calculation for expected: there are 22 players, 11 on offense and 11 on defense and, thus, the number 22 is used as the denominator and the numerator is the number of positions in a category (e.g., 1 for quarterback, 3 for linebacker). While this simple calculation seems to us useful, it is only a rough index. It is worth bearing in mind that a better (but not readily available denominator) is the number of such positions on a *team* not in the starting lineup. Thus, for example, a team may decide to keep quarterbacks in disproportionately larger number because of the importance of the position or the likelihood of injury. Similarly, some positions are more likely substitutable (e.g., center and guard, cornerback and safety), which may permit keeping a disproportionately smaller number.

Comparing the playing positions of African Americans and whites, we see that the position clearly most dominant among contemporary coaches, quarterback, is, while not underrepresented, not as dominant among African Americans. The dominant position among African Americans is defensive back, a position represented among whites but not among the top three. Interpreting the defensive back position is made difficult by the fact that the category includes two positions that often have a different role on the teams: safety and cornerback.[23] Typically, the safety position is more strategic and in charge of coverage whereas the cornerback positions are manned by those having great speed.

Probably one of the most important reasons why there are so many defensive backs is that so many blacks play defensive back (i.e., large supply) and, moreover, so many coach defensive backs at some point earlier in their careers. Indeed, if we compare the coaches by race, our data show that 18 percent of white coaches have at some point been defensive back coaches, but fully 31 percent of black coaches have at some point been defensive back coaches. It is also worth noting that while the trajectories into head coach positions are quite diverse, none of the contemporary head coaches has as his immediately prior position defensive back coach.

Perhaps the most striking difference in position is that seven (6 percent) of the current white head coaches have no experience as a college player and the black head coaches include no one without college playing experience. Moreover, in the modern history of college football coaching, no Division I-A or FBS team has even had a black coach who was not a college football player. It is not clear exactly what one makes of this, but some clues may come from the histories of the nonplayer coaches. In one of the cases, the head coach in question was, during his college days, a student manager on the football team. This perhaps indicates an ability to build up both knowledge and social capital. Almost all the coaches who were student managers obtained college degrees and many of them went on to obtain graduate degrees, perhaps augmenting their attractiveness for coaching positions. The few cases where head coaches were neither players nor student managers or assistants are somewhat idiosyncratic. For example, in another case, a nonplaying head football coach was the son of a head coach, again implying access to training and increased social capital.

Head Coaches' Previous Jobs

Let us begin with the implicit hypothesis about the utility of various positions as predictors of obtaining head coach. The utility can be viewed in at least three ways. First, which positions are most often occupied immediately

[23]The data are not sufficiently sensitive to permit distinction between cornerback and safety; while some listed their positions as such, most simply list "defensive back."

before obtaining the *current* position as head coach? Second, which positions are most often occupied immediately before obtaining one's *first* position as and FBS level head coach? The third career utility valuation is a bit more complex. Here we consider all career moves for all coaches. As is the case in studies of congressional committee movement, any given move gives evidence of two utility evaluations, a plus one for the position moved *to* and a minus one for the position moved *from.*[24]

The Final Stepping Stone: The Job Preceding FBS Head Coach Position

Table 3 shows the positions current FBS head coaches occupied before their current head coaching position. As the Table 3 shows, one of the most common routes to an FBS head coaching position is an FBS head coaching position at another institution. Thus, Table 4 shows the position occupied before coaches' *first* head coaching position. In both cases, we can see that the patterns are not highly varied. For current FBS coaches, by far the most common previous positions are head coach (other institution), offensive coordinator, and defensive coordinator. This is true for both white and minority coaches. The story is quite similar for Table 4 (which excludes previous head coaching positions). Again, the best path to a head coaching position is a coordinator position, with offensive coordinator providing a modest edge over defensive coordinator. Here, too, the differences between white and minority coaches are not pronounced.

Coaching Career Trajectories: Differences in Career Ladder by Race

The preceding analysis demonstrates that some coaching positions have more career utility than others. For example, while it is quite common for offensive coordinators' next job to be a head-coaching job, it is very uncommon for a running backs coach's next job to be a head-coaching job. Based on the observations from Table 1 above we break down results according to race. The results are provided in Table 5.

Examining Table 5, we can see marked differences between white and minority coaches. Notably, quarterback coach seems to be the preserve of white coaches. Minority coaches are very likely to have had a stopping point at Level 5—the skill position coaches, but are unlikely to have had a stopping point at Level 6. It is perhaps also noteworthy that only a single minority

[24]It seems that some positions are "advantaged" or "disadvantaged" according to the number of positions available in general in that category. But since negative scores are accorded for leaving the position, then it is only the FBS head coach position that is "advantaged" (we are assuming coaches to not *voluntarily* leave heard coaching positions for assistant coaching positions).

TABLE 3

Coaching Job Immediately Prior to *Current* FBS Head Coaching Position

Previous Position	Count
Head coach	45
Assistant head coach	2
Offensive coordinator	35
Defensive coordinator	23
Assistant coach*	2
Linebackers coach	1
Offensive line coach	2
Running backs coach	3
Tight ends coach	4
Wide receivers coach	2

*Unknown assistant coaching position.

TABLE 4

Coaching Job Immediately Prior to *First* FBS Head Coaching Position

Previous Position	Count
Head coach (at a non-FBS school)	2
Assistant head coach	7
Offensive coordinator	41
Defensive coordinator	36
Quarterbacks coach	4
Assistant coach*	7
Linebackers coach	2
Offensive line coach	2
Defensive line coach	4
Running backs coach	7
Tight ends coach	6
Defensive backs	1
Wide receivers coach	5

*Unknown assistant coaching position.

began as a student intern or student assistant coach, whereas 20 white include such a stop in their coaching trajectory.

Table 6 provides similar information but for the *first* head coach position attained rather than the *current* position. In some respects, Table 6 is more revealing. To a certain extent the focus on current head coach positions is strongly biased by the fact that so many current head coaches have been head coaches at other FBS institutions and, moreover, that so few current minority coaches have had previous head coaching positions. Table 6, focusing on the *first* FBS coaching position, is perturbed to some extent by time and history and the fact that during some periods there were no minority FBS (or

TABLE 5

Empirically Observed Valuation of Coaching Positions Leading to *Current* FBS Head Coaching Position

Valuation Hierarchy (Highest to Lowest)	Coaching Position Type	Valuation Points, All Head Coaches	White Head Coaches	Black Head Coaches
Level 10 (void)*	Head coach, FBS or NFL			
Level 9	Head coach, other college Head Coach, other professional	436	419 (96.1%)	10 (2.3%)
Level 8	Offensive coordinator Defensive coordinator Assistant head coach	655	579 (88.4%)	66 (10.1%)
Level 7	Quarterback coach, FBS or NFL	102	98 (96.1%)	4 (3.9%)
Level 6	LB, OL, TE coach FBS or NFL	178	161 (90.4%)	12 (6.7%)
Level 5	DB, RB, WR coach FBS or NFL	222	149 (67.1%)	73 (32.9%)
Level 4	Collegiate assistant, not FBS Professional assistant, not NFL	9	9 (100.0%)	0 (0%)
Level 3	High school coach	68	68 (100.0%)	0 (0.0%)
Level 2	Student assistant or intern	20	19 (95.0%)	1 (5.0%)
Level 1	None of the above			

*Given the assumptions above, there is no calculation for FBS head coach or NFL head coach. These are assumed to be equivalent "top of the food chain" positions and, thus, movement from one to the next is for presented purposes stipulated to be a lateral (and thus unscored) "entry" move. Similarly, moves *from* FBS or NFL coach to any other position are assumed to be nonvoluntary and the beginning of a new career chain and, thus, are unscored as "exits."

Division I-A) head coaches. But we can see from Table 6 that the results are not dissimilar to those for Table 5. One noteworthy finding: being a high school coach is a fairly common career stop for white coaches but an unprecedented one for minority coaches.

Drawing from the data obtained about the head coaches we can provide some very rough projections about the likelihood of the *current* stock of assistant coaches becoming head coach. Tables 7 and 8 give projections of head coaching positions from the sample of 100 assistant coaches, half white and half minority. Table 7 draws predictions from the last previous position of current head coaches, whereas Table 8 draws predictions from the career utility hierarchy.

TABLE 6

Empirically Observed Valuation of Coaching Positions Leading to *First* FBS Head Coaching Position

Valuation Hierarchy (Highest to Lowest)	Coaching Position Type	Valuation Points, All Head Coaches	White Head Coaches	Black Head Coaches
Level 10 (void)	Head coach, FBS or NFL			
Level 9	Head coach, other college Head coach, other professional	470	405 (86.2%)	60 (12.8%)
Level 8	Offensive coordinator Defensive coordinator Assistant head coach	705	630 (89.4%)	67 (9.5%)
Level 7	Quarterback coach, FBS or NFL	106	101 (95.3%)	5 (4.7%)
Level 6	LB, OL, TE coach FBS or NFL	182	166 (91.2%)	11 (6.0%)
Level 5	DB, RB, WR coach FBS or NFL	266	196 (73.6%)	70 (26.3%)
Level 4	Collegiate assistant, not FBS Professional assistant, not NFL	102	88 (86.3%)	7 (6.8%)
Level 3	High school coach	68	68 (100.0%)	0 (0.0%)
Level 2	Student assistant or intern	52	50 (96.2%)	2 (3.8%)
Level 1	None of the above	137	111 (81.0%)	22 (16.1%)

Table 7 relies on the probability of attaining a head coaching position from *current* head coaches' previous position. The researchers constructed this table by calculating the probability of current head coaches having each of the positions presented in the table immediately prior to their current position. They then multiplied this probability or "power number" by the number of assistant coaches within our sample that were in the current position. The advantage of this approach is that one can compare the probabilities of attaining a head coaching position for the different positions regardless of white or minority status of the coach. The disadvantage of this approach is that it is relatively simplistic because it disregards the career utility hierarchy.

The researchers constructed Table 8 in a similar manner to Table 7; however, the former uses the career utility hierarchy values. All of the utility points were aggregated to determine the percentage of utility for each level in the hierarchy. The benefit of this approach is that we were able to distinguish the probability between white coaches and minorities.

TABLE 7

Assistant Coach Projections to Head Coach From Table 5

Current Position	"Power Number"*	White Assistant Coach Prediction	Minority Assistant Coach Prediction
Cornerbacks coach	0.00%	0	0
Defensive backs coach	0.83%	0.0249	0.0332
Defensive coordinator	30.00%	1.8	0.6
Defensive ends coach	0.00%	0	0
Defensive line coach	3.33%	0.2664	0.0333
Defensive tackles coach	0.00%	0	0
Linebackers coach	1.67%	0.0501	0.0835
Offensive coordinator	34.17%	1.3668	1.3668
Offensive line coach	1.67%	0.1002	0.0334
Quarterbacks coach	3.33%	0.1332	0.0333
Running backs coach	5.83%	0.2332	0.5247
Safeties coach	0.00%	0	0
Secondary coach	0.00%	0	0
Special teams coordinator	0.00%	0	0
Tight ends coach	5.00%	0.2	0.05
Wide receivers coach	4.17%	0.0834	0.2502
Total		4.2582	3.0084

*The probability of moving from *current* position to head coaching position.

TABLE 8

Assistant Coach Projections to Head Coach from Valuation Hierarchy

Position Level	White "Power Number"	Minority "Power Number"	White Assistant Coach Prediction	Minority Assistant Coach Prediction
Level 9	19.40%	2.87%	0	0
Level 8	30.17%	3.21%	3.0172	0.1925
Level 7	5.08%	0.24%	0.2031	.0024
Level 6	8.72%	0.53%	1.1331	0.0042
Level 5	9.39%	3.35%	0.8448	0.6370
Level 1	6.56%	1.05%	1.3122	0.0843
Total	86.93%	11.69%	48.6782	4.9080

The differences between Tables 7 and 8 show some stark differences between predicted career trajectories for the coaches within our sample. Most notably we can see that Table 7 suggests that minority and white coaches have a similar chance in attaining a head coaching position. From our sample, Table 8 predicts four white and three minority assistant coaches reaching a head coaching position.

Table 8 considers both race and current position and predicts that nearly all of the 50 white assistant coaches in our sample will receive a head coaching position. With the same method, only four minority coaches were predicted to reach the head coaching position. These differences indicate how minority status drastically affects the career trajectory of assistant coaches.

If we consider the percentage of whites versus minorities for each coaching position we can consider the two groups in terms of their median power numbers. For whites the median number is 6.5 percent, for minorities it is 0.5 percent. This suggests that, all else equal, the probabilities in this group are much stronger for the entire set of white coaches than for the entire set of minority coaches. This calculation is, of course, extremely limited. However, it is easy enough to see how similar power numbers could be developed for each of the steps in individuals' career trajectories, predicting at any point their likelihood of obtaining head coach status.

Conclusion

The study began by observing that football coaches' careers provide a very good test of the "pipeline" argument inasmuch as there are about the same number of whites as minorities in the first part of the pipeline, college football players.

The findings, quite limited as they are, show that the percentage of minority coaches becoming head coaches indicates considerable underrepresentation. While there are many good explanations available for that underrepresentation, the current study focused on one for which there is some empirical data: the relationship of playing and particular assistant coaching positions to the likelihood of attaining a head coach position. The data show sharp differences in the likelihood of certain player positions and, in turn (and likely related), certain coaching positions to achieving head coach. The career utility hierarchy developed here seems to have some validity and, most important for present purposes, shows some considerable difference in the career stepping stones of, respectively, whites and minorities.

All else is, at this point, speculation. Thus, one cannot be sure that channeling begins even before the college playing days. While it is certainly the case that some college players play different positions in college than they did in high school, it is rarely the case that minorities move from "skill" position to "strategic" positions and it is rare than whites move from "strategic" positions to "skill" positions. One cannot say that the die is cast during the high school playing days, but it seems likely that channeling occurs at any early stage and has long term consequences.

If the evidence for channeling seems strong, the reasons for it are contentious and the present study sheds little if any light on these reasons. Other studies are at least suggestive. For example, one study shows the ability of high school coaches to transmit, often unconsciously, messages about the value of sport

and about race-based likelihood of achieving success in sport, often sharply distorting perceptions of physical abilities. At a much higher level of athletic competition, another study (Mayeda, 2001) shows that sports commentators who are describing and interpreting the actions and accomplishments of Olympic athletes bring very different "back stories" to black athletes than they do to whites. But the reasons for channeling require further investigation.

What can be done about channeling? The first step is simply to document it and show its deleterious effects. This does not imply the need for some sort of affirmative action for quarterbacks or offensive coordinators. While decisions are framed and influenced by social context, coaches and players make autonomous decisions. However, coaches, both white and minority, can benefit from knowing a bit more about the path dependency of careers and about the implications of job choice decisions, even early career decisions, for equality of opportunity.

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