

Biases and Heuristics in Team Member Selection Decisions

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ABSTRACT

Although team composition as an antecedent to team performance has been studied extensively, team composition as a dependent variable has been relatively neglected. Recent studies on team member selection assume that a group or an organization is conducting the process and propose elaborate models that include numerous factors along two dimensions: taskwork and teamwork. However, when individual decision makers are forming teams, they adopt a simpler heuristic approach that is based on their relational ties to potential team members. The extent of this relational bias, i.e., the proportion of the team to which they have prior relational ties, is explored in this dissertation.

In cases where the decision maker was the team leader, the relational bias was 50% for top-flight professional soccer players choosing their ideal teammates, and 34% for National Football League (NFL) head coaches choosing their coaching staff members. Even in cases where the decision maker was only the selector and not the team leader, the relational bias in the soccer player dataset was 31%. Whether the decision maker was a leader or only a selector was a statistically significant predictor of relational bias. These findings not only support the traditional

leadership theories that the leader-member relationship is a central dimension of leadership, but also suggest that relational ties might be important even at the team formation stage.

The NFL head coaches dataset provides evidence that team leaders' role interdependence is a statistically significant predictor of relational bias not only to the team as a whole, but also to the part of the team structure on which the leaders are more dependent (termed *backing-up subunit*).

Content analysis of soccer players' reports of their selections indicates that taskwork-related rationales were primary (58.2% of the total), followed by tie-related rationales (23%) and teamwork-related rationales (18.8%). Further, team spirit, a subcategory of teamwork-related rationales, comprised only 4.1% of the total rationales provided. The results suggest that when individual decision makers are forming teams, they utilize a three-dimensional (rather than two-dimensional) approach that includes consideration of factors related to taskwork, teamwork, and the decision makers' ties to potential team members.

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DEDICATION

I dedicate this dissertation to the memory of my dad, who passed away almost 10 years ago on August 26, 1998. If he were still with us, he would, in his usual good-humored, self-deprecating manner, have had a field day wisecracking about now being the only one in the family without the “Dr.” prefix.

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1.0 INTRODUCTION

People often play a direct or indirect role in choosing their team members (Hinds, Carley, Krackhardt, & Wholey, 2000). Sometimes people select themselves to a group or committee, and at other times, the subject of this dissertation, people select others to form a team. Examples of the latter could be academics deciding whom to invite onto a research project team, or senior management appointing employees to a new product development team.

Recently there has been a focus on selection in team settings and team formation, particularly in the industrial-organizational psychology and entrepreneurship research domains. Scholars in the former tradition attempt to extend the personnel selection approach to selection in team settings. They propose comprehensive models, utilizing techniques, such as structured interviews and situational judgment tests, that evaluate a number of factors, including personality attributes and knowledge, skills, abilities, and other factors (KSAOs) along the two dimensions of taskwork and teamwork. This approach requires adequate time, resources, and skills in using the selection tools and techniques, and by implication should be suitable in traditional organizational contexts when intra-organizational teams are being formed. Scholars in the latter tradition find that entrepreneurs tend to form teams that include friends and family, often without consideration of members' capabilities to successfully launch a new business (Kamm & Nurick, 1993; Kamm, Shuman, Seeger, & Nurick, 1990).

Therefore the approach taken by entrepreneurs in practice appears to be at odds with the somewhat scientific approach suggested by the industrial-organizational psychologists. This dissertation addresses this issue. It proposes that because making decisions about who to put on a project or team is difficult and one of the biggest challenges facing a team leader (Reagans, Zuckerman, & McEvily, 2004), he or she adopts a simplified heuristic approach based on relational ties. This dissertation explores the decision maker's relational approach with regard to who is selected onto the team and what factors underlie those selections.

Individuals charged with forming a team typically develop a consideration set of potential team members by one or both of the following approaches: (1) an *unbiased* or open search (Aldrich, Carter, & Ruef, 2002), which implies casting the net as widely as possible; and (2) a *relationally biased* search based on *familiarity* (Aldrich et al., 2002; Hinds et al., 2000), involving a search from among those who are relationally tied to the decision maker, e.g., friends, family members, and former colleagues. The race for the Democratic Party nomination in the 2008 American Presidential election provides good examples of these two approaches to team formation. On one hand, Hillary Clinton's campaign staff comprised those who had worked with her from her days as First Lady 15 years previously (Romano, 2007), which is an example of a relationally biased search process. On the other hand, Barack Obama appears to have adopted more of an open search process to team formation, because only two out of the 18 members of his campaign staff were identified as having worked with him before (Sweet, 2007). The extent to which individuals select team members with whom they have prior relational ties is the overarching question explored in Study 1.

In Study 2, I attempt to understand the factors that are salient or primary to decision makers when they are forming their teams. The literature on teams in general, and team formation in

particular, considers only two dimensions: taskwork and teamwork. However, in cases where the decision maker is an individual, a third dimension comes into play. This third dimension is the individual's egocentrism, and is evidenced by the consideration of factors such as his or her relational ties or preferences, which may sometimes be idiosyncratic. Because the majority of these egocentric factors or rationales are accounted for by the decision maker's relational ties, this factor is labeled *tie related*, and, coupled with the taskwork-related and teamwork-related factors, provides a more appropriate model of team formation as a result of individual decision making.

These two studies attempt to respond to the call for more research on team composition as a dependent variable. Although team composition as an antecedent to team performance has been studied extensively, team composition as a dependent variable has been relatively neglected. Scholars across a range of disciplines, such as organizational behavior (Williams & O'Reilly, 1998), social psychology (Levine & Moreland, 1998; Moreland & Levine, 2003), industrial-organizational psychology (Morgeson, Reider, & Campion, 2005), entrepreneurship (Forbes, Borchert, Zellmer-Bruhn, & Sapienza, 2006), organization theory (Liang, 1994), and strategic management (Conger & Lawler, 2001), have called for more research into the drivers of team composition.

As teams become the basic building block for many contemporary business organizations (Lawler, Mohrman, & Ledford, 1995) and team leaders are given more power to select their team members, the research questions raised in this dissertation should increase in relevance.

2.0 THEORY DEVELOPMENT

Organizational behavior team research has largely focused on behavior in existing work teams, ignoring team formation (Forbes et al., 2006). Social psychologists Moreland and Levine state that team composition *as a consequence* has received less attention as an analytical perspective than has team composition *as a cause* or *as a context* (Levine & Moreland, 1998; Moreland & Levine, 2003). Although industrial-organizational psychologists have conducted vast research on personnel selection, there is relatively little empirical research on how to select individuals in team-based settings (Morgeson et al., 2005). Even in the entrepreneurship literature, theory specific to the process of entrepreneurial team formation is scant (Forbes et al., 2006). In the strategy area, Conger and Lawler (2001) claim that the selection of board members has often been informal, and that only recently have firms started using more formal processes for selecting their directors. According to Liang (1994: 13), “we know little about how top management teams are constructed.”

Teams and team-based organization structures are becoming increasingly prevalent, as evidenced by three trends. First, in traditional organizations, teams have become the basic unit through which work is carried out (Balkundi & Harrison, 2006; Gerard, 1995), and designing work around autonomous or semi-autonomous teams has become a fact of organizational life (Cascio, 1995; Hackman, 1990; Manz & Sims, 1993; Morgeson et al., 2005). Organizations are adopting new structural forms built around groups (Jehn, Northcraft, & Neale, 1999), and large,

permanent corporations are being transformed into flexible, temporary teams or networks of individuals (Mowshowitz, 1997). Second, advances in telecommunications technology are enabling globalization of operations and more fragmented organizational structures (Wong, DeSanctis, & Staudenmayer, 2007). Some scholars believe that project, virtual, or network organizations in which the organization is essentially an *ad hoc* team are now emerging as the logical form of organizing in general (Black & Edwards, 2000; DeFillippi & Arthur, 1998). Third, in recent years many organizations have begun life as an entrepreneurial team. The presence of entrepreneurial teams is a prominent economic reality, especially in high-tech industries (Chowdhury, 2005; Lechler, 2001).

There are, broadly, two ways in which teams are formed: (1) either team members select themselves to the team, i.e., self-selection, or (2) team members are selected for a team by a decision maker, who may also be the team leader.

Team formation in the former category has been extensively studied in the sociology and the social networks literature (Hinds et al., 2000; Ruef, Aldrich, & Carter, 2003). Ruef et al. (2003) identify five general mechanisms that may influence team formation: (1) *homophily*, i.e., selection based on similarity of ascriptive characteristics, such as gender, ethnicity, and the like (e.g., Hinds et al., 2000; McPherson, Smith-Lovin, & Cook, 2001); (2) *functionality*, i.e., the extent to which team members possess the achieved competencies to help ensure the success of a collectivity (e.g., Bales, 1953; Liang, 1994; Slater, 1955); (3) *status expectations*, i.e., the greater capacity of high-status individuals to attract other team members compared to low-status individuals; (4) *network constraint*, which implies that team formation occurs within a pre-existing network of strong and weak ties that constrains the founding team's choice of members; and (5) *ecological constraint*, which emphasizes the importance of spatial proximity and

environmental distribution of potential group members. Of these five mechanisms, the network constraint mechanism (Ruef et al., 2003), sometimes called *familiarity* (Hinds et al., 2000), involves social or relational ties, and has the most relevance to this dissertation.

Team formation in the second category may be further divided into two categories, based on whether the decision maker, is (1) an individual, or (2) a group or an organization. Instances of the first case are typically non-organizational situations such as an entrepreneur forming his or her team, or an independent filmmaker selecting cast and crew. Instances of the second case are typically intra-organizational situations in which senior management selects employees to form, say, a new product development team or a task force.

2.1 TEAM FORMATION : ORGANIZATIONAL DECISION MAKING

Industrial-organizational psychology scholars (e.g., Morgeson et al., 2005) have focused on team formation within traditional organizations. They approach team member selection from the personnel selection perspective and focus on the evaluation of an individual's personality and KSAOs to predict effectiveness in team settings, sometimes called *contextual performance* (Morgeson et al., 2005).

According to Morgeson et al. (2005: 586), "Research on contextual performance has suggested that personality characteristics are likely to be particularly good predictors of contextual performance (Borman & Motowidlo, 1993; Motowidlo & Van Scotter, 1994; Van Scotter & Motowidlo, 1996)." Meta-analytic research studies have found that personality characteristics such as conscientiousness, extraversion, agreeableness, and emotional stability are positively related to different aspects of contextual performance (Hogan & Holland, 2003;

Hough, 1992; Hertz & Donovan, 2000; Organ & Ryan, 1995; Peeters, Van Tuijl, Rutte, & Reyman, 2006).

Another research stream has focused on knowledge, skills, and abilities, rather than on personality, as predictors of performance in team settings. One of the earliest efforts in this direction was by Stevens and Campion (1994), who developed a Knowledge, Skills, and Ability (KSA) Requirements for Teamwork model. The KSA for teamwork model encompasses two categories: (1) interpersonal KSAs, and (2) self-management KSAs. Based on this model, Stevens and Campion (1999) subsequently developed a selection test for teamwork settings.

In recent years, these two research streams on team member selection, namely, personality and KSAOs, have merged, resulting in comprehensive selection models. In the context of specialized military teams, Goodwin (1999) examined the relationship of 15 predictor variables to overall mission success. His variables included four personality characteristics (which he classified as teamwork-generic), five taskwork-generic abilities (e.g., cognitive and spatial ability, physical strength and stamina), three teamwork-specific aspects (effort/persistence, interpersonal skills, and leadership), and three taskwork-specific skills (e.g., small-unit tactical skills, land navigation skills). In a similar vein, Morgeson and colleagues, using data collected in a Midwest mill of a national steel corporation, examined the relationship between contextual performance and predictors such as personality variables, social skills, and teamwork knowledge (Morgeson et al., 2005).

Implicit in all the aforementioned approaches from the industrial-organizational psychology tradition is that these teams are being formed within an organizational context, and the organization (be it the military or a national steel corporation) has the time, resources, and skills in utilizing selection tools and techniques to conduct such evaluations. In fact, Morgeson et al.

(2005) examined whether three of the most commonly used selection techniques for hiring into traditional settings, i.e., a structured interview, a personality test, and a situational judgment test, would be effective for hiring individuals into team settings. They found that social skills as measured by a structured interview, four personality characteristics as measured by the personality test, and teamwork knowledge as measured by a situational judgment test all predicted contextual performance.

2.2 TEAM FORMATION: INDIVIDUAL DECISION MAKING

When individual decision makers form teams in non-organizational contexts (e.g., entrepreneurial teams), they usually have neither the resources nor the opportunity to conduct the type of evaluations of potential team members that are proposed by the industrial-organizational psychologists. As Lechler (2001: 263) notes, “People who are founding and developing new ventures are confronted with a great variety of challenges deriving mainly from business and technological uncertainty.” Further, unlike the organizational context, the consideration set of potential team members is not defined by organizational boundaries. Thus it is not surprising that entrepreneurial collaboration is often embedded in existing social and personal relationships with friends, work colleagues, family, or sexual partners (Birley, 1985; Larson & Starr, 1993; Quince, 2001). According to Kamm and colleagues, many entrepreneurial teams consist of friends, relatives, or associates from former employers or educational institutions, indicating that they emerge from existing relationships, often without consideration of members’ capabilities to successfully launch a new business (Kamm et al., 1990; Kamm & Nurick, 1993).

The position advanced in this dissertation is that the phenomenon observed by the entrepreneurship scholars, namely, the seemingly suboptimal selection of team members who have relational ties to the decision maker, is merely a specific instance of a general heuristic-oriented approach taken by individual decision makers when tasked with forming teams. The comparison between team formation through organizational decision making and through individual decision making is presented in Table 1.

Table 1: Team formation: Organizational decision making versus individual decision making

	Team Formation as a result of	
	<i>Organizational Decision Making</i>	<i>Individual Decision Making</i>
Research domain	Industrial-organizational psychology	Entrepreneurship, Leadership
Context	Traditional organizations	New organizations/ start-ups, new organizational forms
Types of teams	Intra-organizational project teams, task forces, committees	Entrepreneurial teams, project organizations, network organizations
Decision making entity	Usually a group of senior managers or executives	Usually an individual e.g. entrepreneur, project team leader
Consideration set of potential team members	Usually defined by organizational boundaries	Usually not well defined
Search process	Structured process	Unstructured process
Dimensions considered	Taskwork, Teamwork	Task orientation, People or Relational Orientation
Factors considered	Individuals' personalities, knowledge, skills, abilities, other characteristics	Ability to contribute to team goal, ties to decision maker
Evaluation process	Usually formal, systematic, involving techniques such as structured interviews, personality tests, situational judgment tests	Usually informal, intuitive, and may or may not involve an interview
Resources available to conduct selection process	Usually abundant (e.g., time, training in selection tools/techniques)	Usually scarce
Cognitive load on individual decision maker	Low	High
Need to adopt heuristics processing	Low	High

From Table 1, it appears that team formation through individual decision making is a *complex task* (c.f. Hogarth & Einhorn, 1992). Individuals, however, are “cognitive misers” (Taylor, 1991; Krackhardt & Kilduff, 1999), who, under circumstances of “unavailability or indeterminacy of important information” (Taylor, 1991: 195), select short cuts or heuristics to fill in the blanks in knowledge (Krackhardt & Kilduff, 1999). Drawing from the sociology and social networks literature (Hinds et al., 2000; Ruef et al., 2003), individual decision makers might

simplify their team formation process by only considering those who are similar to them (homophily mechanism), or by searching for talent in their spatial proximity (ecological constraint mechanism), or by searching within their social network (network constraint or familiarity mechanism). Although scholars have found empirical support for all these mechanisms, as well as others (such as functionality or status expectations), in this dissertation the focus is on the relational approach, which is akin to the network constraint or familiarity mechanism.

The leadership literature provides the basis for the focus on the relational approach to team formation. When an individual decision maker is tasked with forming his or her team, he or she is *ipso facto* the leader of the team. That the individual entrepreneur is termed the lead entrepreneur after the entrepreneurial team is formed signifies the leadership role that he or she plays or is expected to play with regard to the team. Relational or people orientation has long been considered a fundamental dimension of leadership (e.g., Blake & Mouton, 1964; Katz & Kahn, 1952). According to Uhl-Bien (2006), traditional research on leadership examines behavioral styles that are relationship oriented (Likert, 1961). And again, the dominant models in the leadership literature focus on the leader-follower dyadic relationship (Klein, Ziegert, Knight, & Xiao, 2006).

The use of a relational heuristic approach in forming teams is explored in two studies in this dissertation. Study 1 explores the question: to what extent do decision makers use relational ties in forming their teams? The key dependent variable in this study is *relational bias to the team*, or the proportion of the selected team that has a prior relational tie (e.g., family, former colleague, friend) with the decision maker. Study 2 explores the question: to what extent do decision makers' selection rationales betray a relational orientation? In this study, decision makers'

selection rationales are content analyzed and categorized, and the three categories thus formed, i.e., taskwork related, teamwork related, and tie related, constitute the dependent variables.

At one extreme, decision makers could select a majority of their team, if not the entire team, on a relational basis, and at the other extreme, they could form their team with few or none of the members having prior relational ties to them. Research finds that both approaches have their advantages. Beckman (2006) found that firms with founding teams whose members have worked at the same company engaged in exploitation, or efficiency-oriented (March, 1991) behaviors, whereas those whose founding teams had worked at many different companies had unique ideas and contacts that led to exploration or innovation (March, 1991).

Research has identified many benefits of intra-team relational ties. Kroll, Walters, and Le (2007) found that boards of young firms that have recently gone public are best comprised of a majority of the original team members, rather than independent outsiders, because they possess valuable tacit knowledge. The level of *transactive memory* (c.f. Wegner, 1986) was higher for groups whose members were trained together compared to groups whose members were trained individually (Liang, Moreland, & Argote, 1995; Moreland Argote, & Krishnan, 1998). Scholars have argued that repeated interaction among individuals develops interpersonal trust as the values and objectives of the parties become mutually understood and intertwined (Butler, 1991; Saporito, Chen, & Sapienza, 2004; Uzzi, 1999).

Although more relational ties could lead to more trust and cohesiveness, these latter could have negative consequences. According to Langfred (2004), teams that are high in cohesiveness and trust can exert a powerful influence on individuals to conform (Baron, Vandello, & Brunzman, 1996), and such teams are also especially susceptible to group decision biases like “groupthink” (Janis, 1982). Langfred (2004) found that a high level of trust among members of a

work team can make them reluctant to monitor one another. At an individual level, cohesive ties amplify the pressure to reciprocate past favors (Krackhardt, 1999), and breed rigidity (Gargiulo & Benassi, 2003). Examining the relationship between the extent of relational ties within the team and the team's effectiveness and performance is beyond the scope of this dissertation, but is a topic for future research.

In both studies, the relationship between the same three independent variables is examined with regard to the respective dependent variables. The three independent variables are: (1) decision task demand, which operationalizes either a leader condition or a selector condition; (2) individualism-collectivism, an individual differences variable based on national cultural values; and (3) decision maker's role interdependence, specifically, whether the role is more or less independent or critical.

2.3 INDEPENDENT VARIABLES

(a) Decision task demand: Leader versus Selector condition

Although this dissertation analyzes archival data, the first independent variable, decision task demands, is similar to an experimental research design, with a control and experimental group. Decision task demand operationalizes two conditions: (1) decision makers are merely the selectors, and are selecting team members who would perform the task without their involvement; and (2) decision makers are also the leaders of the team, and are choosing teammates. The former is similar to a control condition, whereas the latter is similar to an experimental condition. If forming teams on a relational basis is a characteristic of leadership,

then the decision makers in the latter category should be significantly different compared to those in the former category with regard to dependent variables that measure the relational approach to team formation. In a sense, this variable is analogous to a manipulation check in lab experiments.

In lab experiments, instructions by experimenters can set goals for subjects (Devine, Monteith, Zuwerink, & Elliot, 1991; Neuberg, 1989; Pavelchek, 1989), and different goals stimulate different response patterns of cognition, leading decision makers to approach ill-structured situations with different concerns (Dweck & Leggett, 1988). Indeed, research has found that observational goals, i.e., identification of either “*the* most important problem” or “*all* of the important problems,” had significant effects on how subjects responded (Beyer, Chattopadhyay, George, Glick, Olgilvie, & Pugliese, 1997). Similarly, I expect the different experimental goals of “selecting *your* team” versus “selecting *a* team” to have a significant effect on the extent to which relational ties are used, or are salient, in team formation.

(b) Individualism-Collectivism

There has been growing interest in understanding the influence of culture and cultural differences in how people feel, think, and behave (Brewer & Chen, 2007). Studies with a focus on national-cultural differences assume that these have a strong influence on individual values and worldviews (Markóczy, 2000). Research has found support for cultural differences affecting work-related values, worldviews, beliefs, and behaviors of organizational members (e.g., Geletkanycz, 1997). According to Gibson and Zellmer-Bruhn (2001), cross-cultural research has established that national culture explains between 25% and 50% of variation in attitudes (Gannon et al., 1994), and is also related to decision-making and leadership behaviors (Hofstede,

1980; Schneider & De Meyer, 1991; Shane, 1994). Schneider and De Meyer (1991) found that culture influenced interpretation and response to strategic issues.

Although Hofstede (1980) introduced individualism-collectivism as a cultural-level variable, in recent years several studies (Clugston, Howell, & Dorfman, 2000; Ramamoorthy & Flood, 2002 & 2004; Wagner, 1995) have treated it as an individual difference variable. In fact, according to Eby and Dobbins (1997), collectivistic orientation is an individual difference variable that has received very little attention but may be central to understanding how individuals respond to working in teams and team-based organizations.

Hofstede (2001) identified five independent dimensions of national culture differences, each rooted in a basic problem with which all societies have to cope: (1) *power distance*, which is related to the basic problem of human inequality; (2) *uncertainty avoidance*, which is related to the level of stress in a society in the face of an unknown future; (3) *individualism versus collectivism*, which is related to the integration of individuals into primary groups; (4) *masculinity versus femininity*, which is related to the division of emotional roles between men and women; and (5) *long-term versus short-term orientation*, which is related to the choice of focus for people's efforts: the future or the present.

Of these, the individualism-collectivism dimension is the most relevant for this dissertation, because it reflects the pattern of responses with which individuals relate to their groups (Earley & Gibson, 1998). Individualism is the condition in which personal interests are prioritized over the needs of groups (Wagner, 1995; Wagner & Moch, 1986). "Collectivism is an orientation toward person-group relationships in which such relationships are looked at as being far more permanent and central" (Wagner, 1995: 154). According to Van Dyne and colleagues (Van Dyne, Vandewalle, Kostova, Latham, & Cummings, 2000), researchers have examined

collectivistic tendency as a within-culture individual difference with significant implications for cooperation in groups (e.g., Chatman & Barsade, 1995; Cox, Lobel, & McLeod, 1991; Moorman & Blakely, 1995; Wagner, 1995). With regard to leadership, Gibson (1995) found that behaviors that defined a particular style of leadership differed across individualistic and collectivistic cultures (Gibson & Marcoulides, 1995).

(c) Individual role interdependence

Although the term *role interdependence* was introduced over 50 years ago (Thomas, 1957), it has received little scholarly attention. However, there have been a variety of related concepts in the groups and teams literature that overlap to varying degrees with Thomas' (1957) conceptualization of role interdependence, and will be drawn upon in defining and operationalizing the term and developing the hypotheses. These concepts include individual task interdependence (Van der Vegt & Van de Vliert, 2001), initiated and received task interdependence (Kiggundu, 1983), goal interdependence (Van der Vegt, Van de Vliert, & Oosterhof, 2003), and the individual goal condition in groups research (e.g., Mitchell & Silver 1990).

Work that is assigned to teams is further divided among individuals, and this division of labor creates different roles (Van der Vegt et al., 2003). This division results in different patterns of task interdependence among individual group members occupying different roles and performing differentiated tasks (Brass, 1981; Van der Vegt, Emans, & Van de Vliert, 2001). Because of the division of labor inherent in the flow of work, certain positions within teams may have more influence on team performance (Pearsall & Ellis, 2006: 576). Critical team members occupy roles within the team which involve the control of vital information or resources, and

therefore all other positions are dependent on them (Pearson & Ellis, 2006). Therefore, critical team members have structural sources of power (Brass & Burkhardt, 1993). This creates power asymmetries between critical team members (lower individual role interdependence) and noncritical team members (greater individual role interdependence), and these may result in different perceptions with regard to teamwork and different approaches to team formation.

3.0 RESEARCH DESIGN OVERVIEW

Both datasets in this dissertation utilize archival data that have been compiled from the public domain, in this case the Internet. This is unlike typical research on decision making and biases that is usually conducted in experimental laboratory settings. This approach complements the experimental approach. It addresses to some extent the concern that because most groups research has involved concocted groups in the laboratory, it is not absolutely certain that inferences about natural groups can be based on it (Campion, Medsker, & Higgs, 1993; Guzzo & Shea, 1992).

The research design adopted in this dissertation affords three advantages over the experimental approach. First, unlike in most lab experiments, the measures are unobtrusive; i.e., the subjects were not aware that their selection decisions and rationales would be compiled and analyzed, thereby minimizing, if not eliminating, *demand effects*. Second, in both datasets, the subjects not only are professionals in their respective fields, but also are recognized as having reached the top of their professions. All the soccer players in the first dataset have played for their national team, which is the highest level to which an athlete can aspire. Most of them play professionally in the top European soccer leagues (e.g., the English Premier League, the Spanish La Liga, and the German Bundesliga), and many are household names in countries that follow soccer. The second dataset comprises National Football League (NFL) head coaches. In the American football coaching profession, becoming a head coach in the NFL is the highest

position to which one can aspire. A list of the soccer players and NFL head coaches who comprise dataset 1 and dataset 2 is provided in Appendix A and Appendix B, respectively. It would be well nigh impossible to conduct lab research with such high-profile subjects. Third, the total sample size of 135 decision makers/teams (56 in the first dataset and 79 in the second dataset) is relatively large for groups research conducted in the laboratory.

Both datasets in this dissertation are sports related. Sports have been considered a useful context not only in academic research in general, but also with regard to teams research and team composition in particular. Sports team members play different positions, are interdependent, and must work together closely. Sports are thus a relevant context to study workplace teams (Katz, 2001).

Sports contexts are particularly relevant for studying team composition for four reasons. First, in comparison to organizational settings, teams are well defined. Of the 12 collocated and 12 geographically distributed teams that Mortensen and Hinds (2002) studied, for example, no team was in complete agreement about its own membership. In both datasets, there is no ambiguity about who comprises the team. Second, the composition of sports teams is changed more frequently than in traditional organizational contexts, resulting in larger sample sizes. Third, demographic data about the team members, which are usually difficult to obtain in organizational contexts, are publicly available not only through the team's official Web site, but also through other public Web sites such as www.wikipedia.org. Fourth, because contextual and environmental factors that might affect who wins and who loses are held constant, team composition may control the outcome to a greater extent in sports contexts than it does in other contexts (Jones, 1974). Jones (1974) studied group effectiveness as a function of individual or

subgroup effectiveness in four highly competitive sports (tennis, football, baseball, and basketball) and found strong positive correlations in all four cases.

Although there are differences between sports teams and work teams, Kamm et al. (1990) believe that descriptions of how teams such as political cabinets and athletic teams are assembled are germane to the understanding of how entrepreneurial teams are formed.

Research using sports teams and coaches has been featured in prominent scholarly journals, including the *Academy of Management Journal* (Berman, Down, & Hill, 2002; Latham & Stewart, 1981), *Administrative Science Quarterly* (Adler & Adler, 1988), *American Sociological Review* (Fine, 1979), *Journal of Applied Psychology* (Dirks, 2000; Totterdell, 2000), *Personality and Social Psychology Bulletin* (Hogg & Hardie, 1991; Watson, Chemers, & Preiser, 2001) and *Small Group Research* (Spink, Nickel, Wilson, & Odnokon, 2005; Turman, 2001).

Further, team sports such as soccer and football have become big business (Boon & Sierksma, 2003). Thus, not surprisingly, the practitioner-oriented scholarly literature has also attempted to draw lessons from sports that managers in more traditional organizations can learn from, e.g., *Academy of Management Executive* (Fagenson-Eland, 2001; Katz, 2001) and *Business Strategy Review* (Dell'Osso & Szymanski, 1991). Of particular relevance to the subject of decision making in sports contexts are recently published books like *Moneyball* (Lewis, 2003), and *The Paolantonio Report: The Most Overrated & Underrated Players, Teams, Coaches, and Moments in NFL History* (Paolantonio, 2007).

3.1 SOCCER PLAYER DATASET

The first dataset consists of top-flight soccer players and either their choice of ideal teammates or their selection of their fantasy teams. In the first case, the soccer player making the choices is the *ipso facto* leader of the team, whereas in the second case, the player making the selections is merely the selector of the team and is neither a teammate nor the leader of the team. Although this dataset has been compiled from archival sources, it bears two similarities to an experimental design. First, although the decision makers are professional soccer players in real life, the teams they form are not composed in reality. Thus, the players are unconstrained in their decision making. They can form their teams either with fellow professional players—from those who are currently active or from the past (some of whom may be legends of the sport)—or with friends and family members. They are also not constrained by the availability of their most preferred picks, because the same player can be simultaneously chosen or selected by multiple decision makers. Second, the dataset comprises two subsamples, leaders choosing their teammates and selectors selecting their team members, in which the former functions like the experimental condition and the latter like the control condition, with regard to whether being the designated leader leads to increased relational orientation in team formation.

Although the terms “fantasy sports” and “fantasy leagues” are associated with laypeople playing the role of team selector, in this dataset the decision makers are professional players themselves, who belong to the same talent pool and who are peers or colleagues of those being considered and picked. Thus, unlike laypeople’s choices, these decision makers potentially have relational ties (e.g., membership in the same professional or national soccer team) with those they are considering or including on their teams. The potential for relational ties makes this

team-formation scenario analogous to other organizational situations (e.g., internal labor markets) or non-organizational situations (e.g., professions such as filmmaking).

However, a key disadvantage of the soccer player dataset is that there are no direct financial stakes involved, and decision makers are not penalized if they make obviously suboptimal or idiosyncratic decisions. This concern is somewhat mitigated by the fact that the soccer players are well known and their selections are not only meant to be public, but also meant to be viewed and scrutinized by their fans, whom they would not like to alienate, and therefore there could be indirect financial stakes.

3.2 NFL COACHES DATASET

This dataset comprises the first-year coaching rosters of 79 NFL head coaches. Most studies of sports coaches and coaching deal with the dynamics between the coaches and the players (e.g., Dirks, 2000). In this dissertation, however, it is the head coach and the selection of his coaching staff that are investigated. The sports coaching profession in general, and coaching in the NFL in particular, provides an excellent context in which to study the relational approach to team formation. In a personal phone interview with Ken Whisenhunt, head coach of the Arizona Cardinals, an NFL club, he said, “You hire who you know. If you don’t know them directly, you take the opinion of someone you trust.” (A summary of the interview with Coach Whisenhunt is provided in Appendix C.) According to Dan Rooney, chairman, Pittsburgh Steelers, “sometimes young, new head coaches have to hire people they know from before, because others are not willing to take the risk to join them. They expect new coaches, especially if they are young ... to

get fired quickly, and they don't want to risk their jobs.” (A summary of my interview with Mr. Rooney is provided in Appendix D.)

This dataset was compiled in order to complement the soccer player dataset. Unlike the soccer player dataset, the teams in this dataset have existed, or currently exist, in real life and there are high financial and reputational stakes. The NFL has the highest per-game attendance of any domestic professional sports league in the world, drawing over 67,000 spectators per game for each of its two most recently completed seasons, 2006 and 2007. The television rights to the NFL are the most lucrative and expensive rights not only of any American sport, but also of any American entertainment property.

In the NFL, each of the 32 head coaches is clearly the leader of the core (players and coaches) of his respective organization, and is held responsible for the on-field success or failure of the team. This has resulted in relatively short average tenures for NFL head coaches. According to analysis of league records by Challenger, Gray, and Christmas, Inc., in the 82-year history of the NFL, the average coaching tenure is just 4.3 years or seasons. Further, the length of the average coaching tenure has been decreasing. In the 1980 season, NFL coaches had been with their current teams an average of 4.61 seasons, whereas in 2003, the contingent of head coaches had logged just 2.75 seasons of experience with their respective organizations (Pasquarelli, 2003). Because a newly appointed NFL head coach inherits most of the players and does not have a lot of flexibility in making player roster changes, the key variable that he can manipulate to achieve results is his choice of assistant coaches. This underscores the importance of, and the real financial stakes involved in, his choice of assistants and the formation of his coaching staff.

However, the real-world nature of the NFL head coach dataset has another important difference vis-à-vis the soccer player dataset. Unlike the soccer player dataset, in the NFL dataset, the coaching staff members are not necessarily the decision maker's first choices, but rather those who accepted the position. The data regarding those who were originally selected but were either unable or unwilling to join are not available, and one cannot ascertain how many of the head coaches' selections were also their first choices. Because of this feature of the dataset, its results could be more generalizable to other real-world contexts in which selection is constrained by the willingness and ability of the selectee to join the team.

3.3 SUMMARY

The two datasets afford the opportunity not only to answer different questions, but also to triangulate some findings. Both datasets are utilized to investigate relational bias (Study 1) with regard to the team and to the backing-up subunit. The relationship between individual role interdependence and the two measures of relational bias is examined in both datasets. Because the selection rationales are available only for the soccer player dataset, it is the only one utilized for Study 2.

In both datasets, the decision makers' amount and diversity of experience are not only available, but also controlled for. There are both practical and theoretical reasons for controlling for decision makers' experience. From a practical point of view, it is reasonable to expect that more experienced decision makers would have had more opportunity to form professional ties compared to less experienced decision makers. From a theoretical point of view, decision makers who are more experienced could also have greater expertise compared to those who are less

experienced, and research has found that experts differ significantly from novices with regard to problem solving and decision making (Chi, Feltovich, & Glaser, 1981; Day & Lord, 1992).

4.0 STUDY 1: DECISION MAKERS' RELATIONAL BIAS

4.1 INTRODUCTION

Forming a team in a non-intraorganizational context is a form of nonroutine decision making. In nonroutine decision making, searching for and dealing with new information plays a central role (Janis & Mann, 1977; Schultz-Hardt, Frey, Luthgens, & Moscovici, 2000). An entrepreneur forming his or her entrepreneurial team is a typical example of nonroutine decision making with regard to team member selection.

Entrepreneurship scholars distinguish between two general approaches to team formation: (1) a rational process driven by economic, instrumental considerations, and (2) a boundedly rational process driven by interpersonal attraction, homophily, or social network considerations (Aldrich et al., 2002; Forbes et al., 2006).

The former perspective suggests that founders will engage in an open search, using the fundamental criterion of what a potential team member can add to the venture (Aldrich et al., 2002; Mosakowski, 1998). Sandberg (1992) speculated that founders assemble entrepreneurial teams as a means of “filling the gaps” in their competencies (Forbes et al., 2006). In a similar vein, team formation decision-making models have been proposed whereby the team members are sought based on the perceived needs of the team (Kamm & Nurick, 1993; Larson & Starr, 1993; Ucbasaran, Lockett, Wright, & Westhead, 2003).

The latter perspective is rooted in the social psychological needs of existing team members (Forbes et al., 2006) and posits the operation of mechanisms such as homophily and network constraint. Ruef et al. (2003) found strong support for the homophily mechanism, particularly with regard to similarity of gender, ethnicity, and occupation. Research has also found that when selecting future team members individuals are biased toward others of the same race, and those with whom they have developed strong working relationships in the past (Hinds et al., 2000).

Even though those selected on a relational basis may be as competent as those selected on a more open search basis (Forbes et al., 2006), the entrepreneurship literature appears to suggest that selections through relational ties are departures from rationality. For instance, although Kamm and Nurick (1993) posit an intendedly rational search process, entrepreneurs' responses to the question of how they decided who would make a good new venture partner or team member suggest that interpersonal attraction and not instrumental considerations may be operating. According to Francis and Sandberg (2000), although affective motives may produce resources or team memberships that could not otherwise be attained, friendship as a basis for team selection is deemed inferior to selection based on filling gaps in the team's capabilities (Timmons, 1979). The question of whether those selectees who have relational ties to the decision maker are as competent as those who do not, or those who were available but not selected, is outside the scope of this dissertation, and can be explored in future research. This study explores the extent to which one of the mechanisms in the social psychological perspective, namely, the relational approach, is used by decision makers to form their teams.

4.2 DEPENDENT VARIABLES (DV)

(a) DV1: Relational bias to the team

The term *relational bias* represents an attempt to develop a measure of a decision maker's propensity to select individuals with whom he or she already has a relational tie. A relational tie exists between a decision maker and a selected team member if they are friends, family members, former teammates, or colleagues. The *relational bias to the team* is the proportion of a team that has a prior relational tie with the decision maker. This approach is similar to other studies on team composition that measure the proportion of team members on a particular attribute. For instance, Eby and Dobbins (1997) define *team collectivistic composition* as the proportion of team members with a high collectivistic orientation.

(b) DV2: Relational bias to the backing-up subunit

In this dissertation, *backing-up subunit* is defined as that part or subunit of the team that supports the decision maker's role performance, and on which, therefore, he or she is more dependent upon compared to other parts or subunits of the team.

The backing-up subunit is related to the concept of task interdependence, which is at the core of the definition of teams. Interdependence is often the reason a team is formed in the first place (Campion et al., 1993). Task interdependence is a structural feature of the relationships between team members and stems from tasks within the teams (Van der Vegt et al., 2003). According to Ramamoorthy and Flood (2004), the level of task interdependence may be determined by the way in which people work together (Shea & Guzzo, 1987), and may be determined partly by

technology and partly by the way in which the work is organized (Van Vijeijken, Kleingeld, Van Tuijl, Algera, & Thierry, 2002).

Team tasks can vary in terms of their interdependency, and this has implications for selection and composition (Arthur, Edwards, Bell, & Villado, 2005). There may be greater or lesser task interdependence among team members depending on how the work is organized, and the degree of interdependency may have an effect on the behavior of individuals (Ramamoorthy & Flood, 2004). This implies that the decision makers' task-related background and experience may, first, determine on which part of the team structure they are more dependent (i.e., their *backing-up subunit*), and second, cause them to adopt a different (i.e., more relational) approach to selection for that subunit compared to the rest of the team structure.

The term *backing-up subunit* is derived from the concept of *backing-up behavior* (McIntyre & Salas, 1995; Porter, Hollenbeck, Ilgen, Ellis, West, & Moon, 2003). Backing-up behavior has been defined as “the discretionary provision of resources and task-related effort to another member of one’s team that is intended to help that team member obtain the goals as defined by his or her role when it is apparent that the team member is failing to reach those goals” (Porter et al., 2003: 391). However, in order to effectively engage in backing-up behaviors, team members must be both able and willing to provide assistance (Porter et al., 2003). The ability to back up another team member’s role is constrained by the position of that role in the team structure. If the two roles (the one needing assistance, and the other providing the backing-up behavior) are located in the same subunit of the team structure, it is more likely that the backing-up behavior can be effected, compared to a situation in which the roles are located in different subunits of the team structure. Thus, the conceptualization of the *backing-up subunit* that is developed in this dissertation is the structural counterpart of the backing-up behavior construct.

The *relational bias to the backing-up subunit* is the proportion of the backing-up subunit that has a prior relational tie with the decision maker.

4.3 HYPOTHESIS DEVELOPMENT

(a) Decision task demand: Leader versus Selector condition

I draw on two research streams to develop my hypotheses in this section. The first stream is the leadership literature, which emphasizes the importance of the relationship between the leader and the team members. The second stream is the decision-making literature, in which one of the fundamental issues is the difference between a choice task and a judgment task.

The soccer player dataset affords the opportunity to compare team formation decision making under two conditions: (1) the decision maker is asked to select *a team*, one in which he would have no further role, and (2) the decision maker is asked to select *his teammates*, which not only implies that he would be actively involved in the team, but also cues that he is the leader of the team.

The leadership literature in general, and the team or managerial leadership literature in particular, has traditionally emphasized the fundamental importance of the leader's relationship with the followers or team members. In the managerial leadership literature, two-factor models have dominated (Shipper & Davy, 2002) and the two factors or dimensions are the leader's *task orientation* or *concern for production* and *people orientation* or *concern for people* (e.g., Blake & Mouton, 1964; Katz & Kahn, 1952). The people-orientation dimension emphasizes the relationship between the leader and the team members. The leader-follower dyadic relationship

is the focus of the dominant models in the leadership literature (Klein et al., 2006). According to Uhl-Bien (2006), traditional research on leadership has examined behavioral styles that are relationship oriented (Likert, 1961). If this is indeed a fundamental dimension of leadership, it should be activated at the outset, when the leader is forming the team. Consequently, relational considerations should be more salient to leaders than to selectors, and the former should have higher relational bias to their teams compared to the latter.

Individual decision makers in the selector condition are performing a judgment task, whereas those in the leader condition are choosing teammates, which is a choice task. Understanding the difference between judgment and choice tasks is a central concern of decision-making research (Sood & Forehand, 2005). Research that has investigated the process-oriented differences between choice and judgment has found support for the notion that the former often involves simplifying heuristics, where individuals focus on a subset of the available information, whereas the latter often involves holistic processes, where individuals examine a more complete set of information (Billings & Scherer, 1988; Schkade & Johnson, 1989; Senter & Wedell, 1999; Wedell & Senter, 1997). Compared to choice, judgment is predicted to lead to more information searched and a greater amount of interdimensional search (Billings & Scherer, 1988). This suggests that decision makers in the selector condition would scan a wider consideration set, or, in other words, be less constrained by network or relational ties, compared to those in the leader condition.

H1A: Decision makers in the leader condition would have higher relational bias to their teams compared to those in the selector condition.

In the leader condition, the decision makers are in reality dependent on the backing-up subunit, whereas in the selector condition decision makers are not dependent on the backing-up

subunit, because they are not part of the team. Those in the selector condition may be dependent on the team as a whole, if the team's performance reflects on them and their ability, but they are not especially dependent on the backing-up subunit. Therefore, those in the leader condition are expected to have higher relational bias to their backing-up subunit compared to those in the selector condition.

There is evidence that the impact of relationship conflict may be exacerbated when team members must work closely together in order to be successful (Duffy, Shaw, & Stark, 2000; Gladstein, 1984). In the leader condition, in order to guard against the possibility of relationship conflict with those on whom they are more interdependent, decision makers are more likely to choose based on relational ties. In the selector condition, this would not necessarily be the case, because the decision maker is not expected to be part of the team. Therefore, once again, those in the leader condition are expected to have higher relational bias to the backing-up subunit compared to those in the selector condition.

H1B: Decision makers in the leader condition would have higher relational bias to their backing-up subunits compared to those in the selector condition.

(b) Individualism-Collectivism

Individualism and collectivism are often equated with independent versus interdependent, and separate versus relational self-construals (Brewer & Chen, 2007; Kashima, Yamaguchi, Kim, Choi, Gelfand, & Yuki, 1995). Individual differences in self-construal may contribute to divergent orientations to relationships (Cross & Morris, 2003). Individuals who have defined themselves in terms of close relationships will behave so as to maintain harmonious and close relationships with important others (Cross, Bacon, & Morris, 2000). Cross et al. (2000) found

that individuals who were high on interdependent self-construal were more likely to consider the needs and wishes of close others when making an important decision. This implies that decision makers from more collectivistic cultures, who have greater interdependent self-construal, would have more relational ties in their teams than those from more individualistic cultures.

Whereas people in individualistic cultures tend to strive for autonomy, in collectivistic cultures people are likely to be attached to a few groups, whose goals are all-important, and which are major influences in defining their identity (Watkins et al., 1998). Collectivism in general, and horizontal collectivism in particular, is a cultural pattern in which the individual sees the self as an aspect of ingroups (Singelis, Triandis, Bhawuk, & Gelfand, 1995) such as family, friends, neighbors, and coworkers (Hui, 1988). This implies that individuals from collectivistic cultures would be more likely to consider their ingroups in the process of forming their teams, and their selected teams would have higher relational bias than those from individualistic cultures.

People in individualistic cultures are very good at meeting outsiders, forming new ingroups, and getting along with new people (Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). This suggests that they would be less likely to select on a relational basis. Also, Ramamoorthy and Flood (2004) found that lack of collectivistic orientation was negatively related to team loyalty, implying that individualistic decision makers may be less inclined to select former teammates based on loyalty considerations.

H2A: Decision makers from individualistic cultures would have lower relational bias to their teams compared to those from collectivistic cultures.

Because the decision maker is by definition highly dependent on the backing-up subunit, having trust in the selectees in this unit would be vital. Individualists prefer cognitive bases of

trust such as cues of performance behaviors and accomplishments, whereas collectivists prefer affect-based trust that indicates a social-emotional bond that goes beyond task activities and professional relationships to extra-role and relational goodwill. This suggests that when selecting team members for their backing-up subunit, individualists may select based on skills and abilities, whereas collectivists may select based on relational ties. Two studies by Huff and Kelley (2003, 2005) found that people from collectivistic cultures express less trust in outgroups and thus may select members of their ingroup, such as former coworkers or family members, to positions in their backing-up subunit.

H2B: Decision makers from individualistic cultures would have lower relational bias to their backing-up subunits compared to those who are from collectivistic cultures.

(c) Individual role interdependence

Individuals occupying roles high on initiated task interdependence would experience a high sense of responsibility in relation to those whose jobs are being facilitated (Horsfall & Arensburg, 1966; Kiggundu, 1983). They are therefore likely to adopt a more instrumental approach to team formation, and have lower relational bias to their teams, compared to those with received task interdependence.

Teams or subunits of teams operating under high structural task interdependence tend to experience strong interpersonal attraction (Johnson & Johnson, 1989) and to develop strong interpersonal relationships (Johnson & Johnson, 1980). This implies that decision makers whose roles have been part of subunits with greater interdependence are likely to have strong relational orientation and have a higher relational bias to their teams compared to other decision makers.

Some team-members occupy roles that have greater criticality or task centrality compared to others (Brass, 1984; 522). Critical team members “act as go-betweens, bridging the ‘structural holes’ between disconnected others, facilitating resource flows” (Mehra, Kilduff, & Brass, 2001; 121), and exhibit little overlap with the roles of his or her teammates (Brass, 1985). Decision makers who occupy these types of roles would therefore perceive themselves to be less dependent on their teammates, and would be less concerned with relational aspects of team functioning, and consequently adopt a less relational approach to team formation compared to those who do not occupy critical roles.

H3A: Decision makers whose roles have lower interdependence on team members would have lower relational bias to their teams compared to those whose roles have higher interdependence.

Interdependence has been found to be a key variable in constraining variability in behavior, and in motivating and directing individuals to perform tasks (Fry, Kerr, & Lee, 1986; Liden & Mitchell, 1983). However, scholars have defined interdependence in many ways (e.g., Brass, 1981; Kiggundu, 1981 & 1983; Tjosvold, 1986), and one of the important distinctions they make is between task interdependence and goal interdependence. In the former situation, team members share a common goal, whether or not they actually work together, whereas in the latter situation, team members must actually work together to accomplish the task (Mitchell & Silver, 1990).

Although the team may have high goal interdependence, at the individual level some roles may have more independently measurable performance parameters, resulting in a form of individual goal. For instance, on a new product development team, the R&D scientist’s performance can be independently measured compared to the marketing team member’s

performance. An individual goal might result in the individual developing strategies that focused on maximizing his or her own performance, which may be at the expense of the group performance (Mitchell & Silver, 1990). The research on bargaining, for example, suggests that individual goals lead to less integrative bargaining solutions (Earley & Northcraft, 1989; Huber & Neale, 1987) because the individual goal prompts negotiators to focus on individual gain, rather than dyadic profitability. Extending this argument, decision makers with lower role interdependence would have less loyalty to their partners in the backing-up subunit and would have lower relational bias compared to those with greater role interdependence.

Several studies have reported a positive relationship between task interdependence and cooperation or helping behavior (e.g., Anderson & Williams, 1996; Pearce & Gregersen, 1991; Wageman & Baker, 1997). Higher levels of task interdependence may increase recognition of the need for coordination of effort and the need for helping to solve problems that arise (Anderson & Williams, 1996; Van der Vegt & Van de Vliert, 2005). One mechanism by which decision makers can improve the likelihood of evoking prosocial behaviors from team members on whom they are more interdependent is to select from those with whom they have already worked, and whom they know they can count on.

H3B: Decision makers whose roles have lower interdependence on team members would have lower relational bias in their backing-up subunits compared to those whose roles have higher interdependence.

4.4 DATASET 1: PROFESSIONAL SOCCER PLAYERS

The soccer dataset comprises 56 top-flight professional soccer players, each of whom either chose his ideal teammates or selected his “Fantasy XI” or “Perfect XI.” Because soccer is played with 11 players, in the former case, decision makers made 10 choices; in the latter case, they made 11 selections. The data were obtained from three Internet data sources. The first data source was the official Federation Internationale de Football Association (FIFA) World Cup 2006 Web site. FIFA is the official governing body of world soccer. Adidas, the sports apparel and footwear company, ran a “+10” campaign prior to and during the FIFA World Cup 2006 in which they asked 22 of the world’s leading soccer players to choose their ideal teammates. Both the choices and the rationales were published on the official FIFA World Cup 2006 Web site. The second data source was www.icons.com, which styles itself as “the official website of the world’s leading footballers [soccer players].” It houses the official personal Web sites of around 70 soccer players, many of whom have a “Fantasy XI” Web page on which their selections and the accompanying rationales are published. It provided the selections of 28 players. The third data source was the Internet in general, through which the Fantasy XI selections of six other soccer players were obtained. Four of these players had provided their selections to the leading soccer magazine *FourFourTwo*, which runs a regular feature on its back page called “My Perfect XI,” which details a soccer personality’s favorite team, sometimes within certain criteria (e.g., players who have played for Liverpool clubs).

There were three criteria for inclusion in the dataset. First, they had to be soccer players. The Adidas promotion included the selections of Joseph “Sepp” Blatter, the FIFA president, but these data were excluded because he had never played professional soccer. Second, they had to have represented their country. This resulted in the exclusion of 33 soccer players’ Fantasy XI

selections that were available from www.icons.com. Although, these players were professionals, because they had not played at the highest level they were unlikely to have relational ties with other top-flight players, and their approach to team formation was more akin to that of laypersons participating in fantasy leagues. Third, their choices should not have been constrained by a specific criterion. For instance, three “My Perfect XI” selections of soccer players who had represented their country, Graeme Sharpe, Michael Owen, and Ian Rush, obtained from *FourFourTwo* magazine, had to be excluded because their selections were constrained to those with or against whom they had played. The list of soccer players who comprise this dataset is provided in Appendix A, and includes players of 26 different nationalities.

(a) Operationalization of variables

Relational bias to team: Relational bias to the team is measured as the proportion of the team that has a relational tie to the decision maker. In this dataset, a relational tie is identified if the decision maker and the selectee are members of the same family (e.g., brother, father), or have played on the same team, either for club or for country.

Relational bias to backing-up subunit: In soccer the playing positions or roles are strikers (or forwards), midfielders, and defenders (including goal-keeper). From the literature and my discussion with Pitt Men’s Soccer Coach Joe Luxbacher, it appears that there is general consensus that the backing-up subunit for strikers is the midfielder unit. For defenders, it is the defender unit (defenders and goal-keeper). However, the backing-up subunit for midfielders is not clearly defined, and could vary by formation. In the “diamond” formation (4-1-2-1-2), the two central midfielders are positioned forward (attacking midfielder) and back (defensive midfielder), to form a diamond shape with the left and right midfielders (winger-midfielders). In

this case, the backing-up subunit for the attacking midfielder is the defensive midfielder and the winger-midfielders. However, in the standard 4-4-2 formation, the two central midfielders form a straight line (rather than a diamond) with their left and right midfielders, and the central defenders are their backing-up subunit. In order to minimize complexity of coding and interpretation, I have computed the relational bias metrics of the backing-up subunit of decision makers who are midfielders by considering the rest of the midfielder unit and 50% of the defender unit as their backing-up subunit.

Leader v/s Selector Condition: Decision-makers in the leader condition have been coded 1, and decision makers in the selector condition have been coded 0.

Individualism-Collectivism: Typically, individualism-collectivism has been measured through questionnaire surveys. However, this dissertation uses archival data, and operationalizes individualism-collectivism as an individual difference variable, using national culture as a proxy.

The two most widely used classifications of nations on cultural dimensions are by Hofstede (1980), who originated this line of research, and Project Global Leadership and Organizational Behavior Effectiveness (GLOBE), a research program focusing on culture and leadership in 61 nations (House, Javidan, Hanges, & Dorfman, 2002). I have used the latter as my basis for operationalizing the individualism-collectivism dimension for two reasons. First, it is considered one of the most influential studies investigating cultural variations in terms of which leadership traits are effective (Gelfand, Erez, & Aycan, 2007), and second, it is clearly focused on leaders and leadership, which are central to this dissertation.

Project GLOBE (unlike Hofstede's taxonomy) measures two different forms of collectivism, namely, societal collectivism and ingroup collectivism. Ingroup collectivism reflects the degree to which individuals express pride, loyalty, and cohesiveness in their organizations or families

(House et al., 2002). Societal collectivism reflects the degree to which organizational and societal institutional practices encourage and reward the collective distribution of resources and collective action (House et al., 2002).

From a theoretical point of view, the operationalization of individualism-collectivism that is most relevant to the dependent variable, *relational bias*, is ingroup collectivism. I have therefore operationalized individualism-collectivism by using the country-level measures of ingroup collectivism. In some cases, the nationality of the team leader was not included in the 61 nations surveyed by Project GLOBE. In these cases, I have used the closest neighboring country for which a measure was available as a proxy.

Individual role interdependence: There is general agreement among soccer experts that the midfielder role is the most critical and least role interdependent among soccer positions. According to Jeffrey (1935), the half-back line is the most important part of the team. Midfielders connect the defensive unit with the forward line, and exemplify the definition of critical team members who “act as go-betweens, bridging the ‘structural holes’ between disconnected others” (Mehra, Kilduff, & Brass, 2001). Individual role interdependence was operationalized by coding midfielders as 1, and non-midfielders as 0.

Amount of experience: Amount of experience was operationalized as the number of years of professional club playing experience the decision maker had.

Diversity of experience: Diversity of experience was operationalized as the number of professional clubs for which the decision maker had played.

(b) Results

Table 2 summarizes the descriptive statistics and correlation coefficients for the variables in the study.

Table 2: Descriptive statistics and correlation coefficients – Soccer player dataset

	Mean	s.d.	1	2	3	4	5	6	7
Control Variables									
1 Amount of experience	13.13	4.41							
2 Diversity of experience	4.09	2.13	.59**						
Independent Variables									
3 Leader v/s Selector Condition	.41	.50	-.34*	-.40**					
4 Individualism-Collectivism	5.50	.33	-.15	-.32*	-.03				
5 Individual role interdependence	.52	.50	-.14	-.08	.15	-.07			
Dependent Variables									
6 Relational bias (RB) to team	.38	.31	.06	.04	.32*	-.17	-.02		
7 RB to backing-up subunit	.32	.30	.16	-.01	.36**	-.15	.06	.71**	

* $p < .05$
 ** $p < .01$

Decision makers, on average, have relational ties to 38% of their team members. Decision makers in the leader condition, on average, had relational ties to 50% of their team, whereas those in the selector condition had relational ties to 31% of their team. Of the three independent variables, only leader versus selector condition variable, is significantly positively correlated with both dependent variables: relational bias to the team ($r = .32, p < .05$) and relational bias to the backing-up unit ($r = .36, p < .01$). This result lends support to hypotheses 1A and 1B, which predicted that leaders would manifest significantly higher relational bias to both the team and the backing-up subunit compared to selectors.

Individualism-collectivism was not significantly correlated with either of the dependent variables, indicating a lack of support for hypotheses 2A and 2B, which predicted that decision makers from more collectivistic cultures would manifest significantly higher relational bias to both team and to backing-up subunit compared to those from more individualistic cultures.

Individual role interdependence was not significantly correlated with either of the dependent variables, indicating lack of support for hypotheses 3A and 3B, which predicted that decision

makers with greater role interdependence would manifest higher relational bias to the team and to the backing-up subunit compared to those with lower role interdependence.

The two dependent variables, relational bias to team and relational bias to backing-up subunit, are highly correlated ($r = .71, p < .01$), as expected, because the latter measure forms part of the former measure.

Regression Analysis

A hierarchical regression analysis was conducted, entering the control variables (amount of experience and diversity of experience) in the first step, and the independent variables (leader-selector, individualism-collectivism, individual role interdependence) in the second step. Standardized regression coefficients and changes in explained variance were examined. The regression models are presented in Table 3.

Table 3: Regression models – Soccer player dataset

		Relational bias to team		Relational bias to backing up subunit	
		Model 1	Model 2	Model 1	Model 2
Control Variables					
1	Amount of Experience	.06	.12	.26	.34
2	Diversity of Experience	.01	.09	-.16	-.06
Independent Variables					
3	Leader v/s Selector		.41**		.45**
4	Collectivism		-.12		-.10
5	Role Interdependence (Midfielders = 1)		-.07		.03
Total R-square		.00	.17	.04	.24
R-square change			.17*		.20**

* $p < .05$

** $p < .01$

With regard to relational bias to the team, the change in r-squared was significant ($\Delta r^2 = .17, p < .05$) when the second block of variables (independent variables) was entered. Of the three independent variables, only one, leader versus selector condition, was significantly related to the dependent variable ($\beta = .41, p < .01$). Thus hypothesis 1A, which predicted that leaders would have higher relational bias to the team compared to selectors was supported.

With regard to relational bias to the team, the change in r-squared was significant ($\Delta r^2 = .20$, $p < .01$) when the second block of variables (independent variables) was entered. Of the three independent variables, only one, leader versus selector condition, was significantly related to the dependent variable ($\beta = .45$, $p < .01$). Thus hypothesis 1B, which predicted that leaders would have higher relational bias to the backing-up subunit compared to selectors was supported.

Because the two control variables, amount of experience and diversity of experience, were highly correlated ($r = .59$, $p < .01$), the hierarchical regression models were rerun separately, entering only one of them each time. Both models returned almost identical results; however, in the models in which the control variables were entered singly the incremental r-squared was significant at $p < .05$, whereas in the model which included both control variables the incremental r-squared was significant at $p < .01$, meaning that the latter model is more fully supported.

Also, regression models were run using alternative operationalizations of the individualism-collectivism and individual role interdependence variables. Substituting Hofstede's (2001) measure of individualism in place of the Project GLOBE measure of ingroup collectivism generated similar results. With regard to individual role interdependence, the case could be made that the performance of attacking players in soccer could be measured independently in terms of goals scored and assists, and hence it is they, rather than the midfielders, who have the lowest role interdependence. Accordingly, the models were run with strikers and attacking midfielders dummy coded as 1, and the other playing positions as 0, but once again, the results were not statistically significant, and were almost identical to those obtained with the original operationalization.

(c) **Conclusions and Discussion**

The results suggest that decision makers use relational ties as a general heuristic when forming teams. Even in unconstrained “fantasy” situations, rather than populate the team purely based on competence — for instance, if they only selected the legends of the sport, or those who were widely considered to currently be the best in the world — they made some selections based on relational ties. The mean relational bias to the team was 31% for those in the selector condition and was significantly higher for those in the leader condition (50%), suggesting that the general heuristic with regard to relational ties is adopted even more strongly by those in a leadership role. This finding is in line with traditional leadership research that relational or people orientation is a fundamental dimension of leadership.

The results also suggest that the leader-selector manipulation was strong enough to overcome the mitigating effect of the decision makers’ expertise. Billings and Scherer (1988) quote Bettman (1982) that in cases where decision makers possess sufficient knowledge of the decision task, there may be no difference between judgment and choice. Some scholars (e.g., Ungson, Braunstein, & Hall, 1981) argue that extensive experience with a variety of complex decisions produces high-quality decision-making performances in executives that are relatively free from bias (Schwenk, 1984).

4.5 DATASET 2: NFL HEAD COACHES

In order to create a dataset that would be comparable to the soccer dataset, I decided to use a newly appointed head coach’s initial (first-year) coaching roster as representative of his approach

to team formation. I have accordingly recreated the initial coaching rosters of 79 NFL head coaches. In this study, the coaching staff includes assistant coaches involved in offense, defense, special teams, and strength and conditioning. A list of the head coaches, teams, and the year for which the coaching roster has been compiled is provided in Appendix B.

The dataset comprises not only the coaching roster, but also the entire National Collegiate Athletic Association (NCAA) and professional playing and coaching career history of each member of the roster. This information was culled from the Internet from a variety of Web sites, including the official NFL Web site, individual teams' Web sites, NCAA college Web sites, fan sites, fan blogs, sports database Web sites (e.g., *armchairgm.com*, *profootballdatabase.com*), press archive sites (e.g., *New York Times* archives), social networking sites (e.g., *linkedin.com*, *zoominfobusinesspeople.com*) and other Web sites (e.g., the Fellowship of Christian Athletes). In some cases, an individual coach's career history had to be pieced together from several individual Web extracts.

This dataset affords the opportunity to test hypotheses regarding the relationship between individual role interdependence and relational bias, to the team (H3A), and to the backing-up subunit (H3B).

(a) Operationalization of variables

Relational bias: A relational tie exists between an NFL head coach and a member of his coaching staff if they have been members of the same organization in the past, e.g., both individuals were members of the same coaching staff in the past, or one individual was a player and the other was a coach in the past.

These relational ties were identified by searching the career history database that was created as part of this dissertation and locating instances where there were matches of organization and tenure between members of the same coaching staff. This approach to identifying relational ties is more conservative than is the norm in the sports media. For instance, the *Pittsburgh Tribune-Review* identifies two more relational ties than I do in Pittsburgh Steelers Head Coach Mike Tomlin's coaching staff. (A copy of the article is provided in Appendix E.) One tie, accounted for by geographical proximity, is between Quarterbacks Coach Ken Anderson and Mike Tomlin, because they were both based in Cincinnati at the same time, the former with the Cincinnati Bengals and the latter with the University of Cincinnati. The other tie they identify is an indirect or second-order tie, in which Special Teams Coach Bob Ligashevsky met Coach Tomlin through a mutual friend. Thus, based on the media report, the relational bias for Coach Tomlin is 7 out of 16, or 43.75%, but based on my approach, it is 5 out of 16, or 31.25%. Although the more conservative approach has been adopted in order to maintain consistency across all head coaches in the dataset, it is important to note that the computation of relational bias is an underestimate of the actual relational bias.

Backing-up subunits: Jones (1974) states that in football, the offensive and defensive squads are highly specialized in their respective functions, and they play as units. Head coaches are typically well known for their expertise either on offense or on defense. For instance, Bill Walsh is identified with the "West Coast Offense" and Buddy Ryan with the "46 Defense." Thus the term *backing-up subunit* could be interpreted in three ways: (1) it could be the subunit that reflects the head coach's expertise; e.g., if the head coach was a former offensive coordinator, offense is his backing-up subunit, and vice versa for defense; (2) it could be the subunit opposite to the one in which the head coach is the expert; e.g., if the head coach was a former offensive

coordinator, he could need support or backup in terms of defense; and (3) similar to soccer, where the defense is always backing up the offense, irrespective of the background of the head coach, the defensive coaching staff could always be considered the backing-up subunit. In this dissertation, I have interpreted the term *backing-up subunit* in the first manner. The backing-up subunit for head coaches with a background in defense is the defensive coaching unit, and for those with a background in offense it is the offensive coaching unit.

Individual role interdependence: Within sports teams, the team's offensive and defensive systems are designed in such a way that formal roles are clearly specified for each member (Bray, 1998). In American football, the defensive unit is considered to be less about individuals and more about coordinated action, whereas some of the roles on the offensive unit, such as quarterback, running back, and wide receiver, are considered to be more about the individual, or more role independent. This appears to be because players in these roles or positions can score points, and thus have an individual goal condition in a team setting (Mitchell & Silver, 1990). Typically, the highest salaries in the league are paid to quarterbacks, running backs, wide receivers, and left tackles, all of which are positions in the offensive unit.

Individual role interdependence is a dichotomous variable, coded 1 if the head coach has a defensive background and 0 if he does not.

Conference: The 32 teams in the NFL are equally divided between two conferences, the American Football Conference (AFC) and the National Football Conference (NFC). Each team attempts to emerge as the winner in the conference to which it belongs, enabling it to compete in the Super Bowl, which is the ultimate prize every season. Further, there are widely held opinions among sportscasters and those who follow the sport with regard to one conference or the other. An example of one such opinion is that the AFC has been the more competitive conference over

the last several years, and whichever team wins the AFC conference will go on to beat its NFC rival in the Super Bowl. Based on these considerations, conference has been controlled for, with head coaches of AFC teams coded 1, and NFC teams coded 0.

Race: Race has been controlled for, with non-Caucasian coaches coded 1, and Caucasian coaches coded 0.

Promotion from within: This variable controls for whether the newly appointed head coach is an external hire (coded 0), or promoted from within (coded 1).

Professional playing experience: This variable controls for whether the head coach had played professionally in the NFL prior to joining the coaching ranks (coded 1) or otherwise (coded 0).

Amount of experience: Amount of experience was operationalized as the head coach's total number of years of NFL coaching experience (including as an assistant coach).

Diversity of experience: Diversity of experience was operationalized as the number of professional clubs at which the head coach has worked, either as an assistant coach or as a head coach.

(b) Results

The sample comprised 79 head coaches, of whom 38 (48%) coached AFC teams, 10 (12.65%) were of non-Caucasian ethnicity (9 African-American, 1 Hispanic-American), 13 (16.46%) were promoted from within, 25 (31.65%) were former NFL players, and 36 (45.57%) were from a defensive background. In this sample, the average number of organizations at which a head coach had coached prior to being appointed was 5.72 (3.23 colleges, 2.49 NFL teams). The average number of years of professional coaching experience was 13.67.

Table 4 summarizes the descriptive statistics and correlation coefficients for the dependent and independent variables.

Table 4: Descriptive statistics and correlation coefficients – NFL head coach dataset

	Mean	s.d	1	2	3	4	5	6	7	8	9	10
Control Variables												
1 Conference	.48	.50										
2 Race	.14	.35	.06									
3 Promoted from within	.16	.37	.19	-.08								
4 Professional playing background	.33	.47	-.02	.19	.13							
5 Diversity of experience	5.72	2.66	-.06	-.14	-.07	-.57**						
6 Amount of experience	13.67	7.55	.10	.12	.03	.09	.06					
Independent Variable												
7 Individual role interdependence	.46	.50	.17	.21	.07	-.11	.17	.14				
Dependent Variables												
8 Relational bias to team	.35	.22	.09	-.04	.50**	.05	.04	.01	.06			
9 Relational bias to offensive subunit	.39	.26	.06	-.02	.45**	.06	.06	.07	-.06	.84**		
10 Relational bias to defensive subunit	.34	.27	.08	-.05	.38**	.05	-.02	-.03	.28*	.73**	.43**	

* $p < .05$

** $p < .01$

The mean relational bias to the team is 35%, meaning that on average, an NFL head coach has relational ties to around one-third of his coaching staff. The mean relational bias to the offensive and defensive subunit is 39% and 34 %, respectively.

The professional playing background variable is significantly negatively correlated with the diversity of experience variable ($r = -.57, p < .01$). This reflects the fact that most head coaches who were formerly NFL players joined the NFL coaching ranks directly as assistant coaches, compared to the rest, who typically spent several years coaching at various colleges before breaking into the professional coaching ranks.

The *promotion from within* variable is significantly positively correlated with all three dependent variables: relational bias to the team ($r = .50, p < .01$), relational bias to the offensive subunit ($r = .45, p < .01$), and relational bias to the defensive subunit ($r = .38, p < .01$). This reflects that fact that there is much less turnover among the coaching staff in cases of promotion than in cases where the head coach is an external hire. Consequently, the number of relational ties between the promoted head coach and members of the coaching staff is very high, resulting

in higher relational bias to the team as a whole, and to the subunits of the team, compared to cases where the head coach was an external hire.

The three dependent variables are highly intercorrelated, as is to be expected. Relational bias to team is significantly positively correlated with relational bias to offensive subunit ($r = .84, p < .01$) and with relational bias to defensive subunit ($r = .73, p < .01$). This is expected because the relational bias to the offensive and defensive subunits together account for the majority of the relational bias to the team (except for the relational ties between the head coach and the other two smaller subunits, namely, special teams and strength and conditioning). The relational bias to the offensive and defensive subunits are also significantly positively correlated to each other ($r = .43, p < .01$), which could be reflective of a head coach's propensity to form teams on a relational basis across all subunits.

The variable of interest, individual role interdependence, with defensive background coded 1, is significantly positively correlated ($r = .28, p < .05$) with relational bias in the defensive subunit. This result lends support to hypothesis 3B, which predicted that decision makers from a more interdependent role background should have higher relational bias to their backing-up subunit compared to decision makers from a more independent role background. The fact that the defensive background variable is negatively (though not significantly) correlated with the relational bias to the offensive subunit is also in line with hypothesis 3B.

Regression Models

Because the sample consisted of a pooled, cross-sectional dataset based on panel data, OLS regression models will not estimate unobserved effects (Wooldridge, 2003). A panel effect model such as fixed effects or random effects would control for unobserved heterogeneity. In this study, a fixed effects model was utilized, grouping the 79 data points into the 32 NFL clubs.

Because the *promotion from within* variable was highly correlated with all three dependent variables, separate models were run, with it excluded (Model 1 in all three cases), and with it included (Model 2 in all three cases).

The regression models are presented in Table 5.

Table 5: Regression models – NFL head coach dataset

	Relational Bias (Team)		Relational Bias (Offense)		Relational Bias (Defense)	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Control Variables						
1 Race	-.13	-.03	-.10	.01	-.20	-.11
2 Professional playing background	.11	.06	.15	.10	.06	.02
3 Promotion from within		.35**		.40**		.34**
4 Diversity of experience	.01	.01	.02	.01	-.01	-.01
5 Amount of experience	-.00	.00	-.00	-.00	-.00	-.00
Independent Variables						
6 Individual role interdependence	.16*	.10 ¹	.07	.00	.33**	.27**
R-squared (within)	.14	.43	.07	.34	.30	.46
R-squared (between)	.07	.00	.06	.00	.01	.01
R-squared (overall)	.01	.23	.01	.20	.11	.22

¹ $p < .10$
 * $p < .05$
 ** $p < .01$

Because the conference dummy variable is fixed for each NFL club, it was dropped from the model. From Table 4B, it can be seen that the *promotion from within* variable is highly significant in all models, and the overall explained variance is higher when it is included than when it is not. However, the individual role interdependence variable is a statistically significant predictor of relational bias to the team ($r = .16, p < .05$) in Model 1 when *promotion from within* is excluded, and is marginally significant ($r = .10, p < .10$) in Model 2 when it is included. Thus, hypothesis 3A, which predicted that decision makers with higher role interdependence would have higher relational bias to their teams compared to those with lower role interdependence, is supported.

The individual role interdependence variable is a statistically significant predictor of relational bias to defensive subunit in both Model 1 ($r = .33, p < .01$) and Model 2 ($r = .27, p <$

.01). Thus, hypothesis 3B, which predicted that decision makers with higher role interdependence would have higher relational bias to their backing-up subunits compared to those with lower role interdependence, is supported.

(c) Alternative operationalizations of dependent variables

The dependent variable, *relational bias to the team*, as operationalized, only measures the proportion of ties between the head coach and his coaching staff. It does not distinguish between the following scenarios: (1) Sean Payton (New Orleans Saints, 2006) has five relational ties to his coaching staff of 17 team members, but they have an additional three ties among themselves; and (2) Dom Capers (Houston Texans, 2002) has five relational ties to his coaching staff of 17 team members, but they have an additional nine ties among themselves. It is important to distinguish between such scenarios because in the former case, the relational ties within the team appear to be driven by the head coach, whereas in the latter case, they appear to be driven by other team members.

In order to explore this aspect, I created two additional dependent variables. The first dependent variable, *proportion of total ties*, measured the extent to which the head coach accounted for the total number of intra-team ties. In the two aforementioned cases, this resulted in a metric of 0.63 for Sean Payton and 0.31 for Dom Capers, which indicated the relational bias of each head coach relative to the overall relational ties within the team.

The second dependent variable, *proportion of total tenure*, measured the extent to which the head coach accounted for the total number of years of prior overlapping tenure. In the former of the two aforementioned cases, the eight relational ties among all members of Sean Payton's coaching staff accounted for 21 years of overlapping tenure (in various organizations), and

Coach Payton's five ties accounted for 14 years of those 21 years. This resulted in a metric of 0.67 for Coach Payton. In the latter of the two cases, Dom Capers accounted for 28 years of the 62 years of overlapping prior tenure, which resulted in a metric of 0.45.

Whereas the first dependent variable is a ratio of binary ties, the second dependent variable is a ratio of valued ties. A similar fixed effects model was run with each of these dependent variables, but neither were the full models supported, nor were any of the independent variables significant predictors of either of these dependent variables.

(d) Conclusions and Discussion

The results, in general, support both hypotheses tested in this dataset. Decision makers whose role interdependence is higher have higher relational bias to their teams and to their backing-up subunits.

The strong influence of promotion from within on the dependent variables, although not surprising, has interesting implications for team formation, particularly in the strategic management area. When organizations appoint a CEO, an internal appointment may result in essentially the same management team continuing, whereas an external hire may not only reduce the level of relational ties within the team, but also skew it toward his or her own prior professional assignments. Further, whether the CEO comes from, say, a sales background (lower role interdependence) or a marketing background (higher role interdependence) may determine not only the extent to which he or she would hire based on relational ties, but also in which subunits of the management team these hires would be located. Further research could be conducted to test these hypotheses.

The intuition underlying the conceptualization of the alternative dependent variables, proportion of total ties and proportion of total tenure, will be more directly testable through a social network analysis methodology. Social network analysis would provide different measures of centrality, such as degree centrality or betweenness centrality, for each of the members of the coaching staff. This should provide a clearer picture of how central the head coach is within the internal network, and if he is central, what form of centrality he holds. Analysis might also reveal if the team has network components that may or may not be reflective of the organizational subunits (e.g., offense or defense). This line of research appears to be promising, and I intend to pursue it in the future.

4.6 GENERAL CONCLUSIONS

The mean relational bias to the team, in the soccer player dataset (across both decision task demand conditions) was 38.1%, and in the NFL head coaches dataset was 35%. In both datasets, the relational bias measures are underestimates of the actual relational bias because only ties that can be ascertained from archival records, such as family or professional ties, have been counted. Decision makers' relational ties also include their friends, neighbors, and those they may have met informally in either social or professional settings. If it were possible to ascertain these ties as well, the relational bias would increase, and may even account for more than 50% of the team members. This in turn raises the question, is the relational approach the bias from the more rational, instrumental, open search process? Or, is the relational approach the preferred or dominant approach, and the open search process the deviation (or bias), to fill the gaps? Further research needs to investigate this issue.

Although the relational approach is similar to the network constraint approach (Ruef et al., 2003), this study highlights an important difference. Leaders and selectors in the soccer player dataset included team members who had relational ties to them, even though their decision making was not constrained. This implies that the relational approach is a general heuristic, that decision makers adopt because they *want* to, and not because they *have* to, due to network or other constraints.

5.0 STUDY 2: DECISION MAKERS' RATIONALES

5.1 INTRODUCTION

The nascent literature on team member selection suggests that decision makers should take into account problems that are seldom considered when selecting individuals to work by themselves (Jones, Stevens, & Fischer, 2000; Morgeson et al., 2005). The team formation literature, like the teams literature in general, distinguishes between task-related and teamwork-related factors. Taskwork and teamwork are the bases of Goodwin's (1999) typology for classifying knowledge, skills, abilities, and other factors for team staffing. Liang (1994) considers three types of selection schemata, two of which (position based and intelligence based) could be considered task related, and a third (coordination based) that could be considered teamwork related. A similar distinction is made with regard to team member contributions, which are bifurcated into task inputs, i.e., an individual's contributions to task accomplishment, and maintenance inputs, i.e., an individual's contribution to relationships in a team (Gómez, Kirkman, & Shapiro, 2000).

Both these dimensions may be important criteria for individuals charged with forming teams. Some scholars claim that individuals rely on indicators of task-related competence when choosing future group members (Hinds et al., 2000). Other scholars make the case that at the

individual level of analysis, expectations with regard to teamwork behaviors are important (Eby, Meade, Parisi, & Douthitt, 1999).

Teams and groups researchers emphasize the importance of the teamwork dimension with regard to team composition and team performance. According to Moreland, Levine, and Wingert (1996), one of the central questions in team composition is: “will any special chemistry occur?” Salas, Sims, and Burke (2005) state that teamwork is key to ensuring the success of a team. Evidence from small group research suggests that how well individual team members’ ability and expertise are integrated within a team may be more important to team performance than the task-related abilities themselves (Liang, 1994). If chemistry is the most critical aspect for team performance, and it is “rare, valuable, and difficult to manage” (Moreland et al., 1996: 21), decision makers should use it as a primary heuristic in team formation. They could either select entire teams or subteams where chemistry is known to already exist, or use it as a salient criterion in selecting the individuals who will form the team.

Thus, based on the team formation literature, two conclusions emerge. First, decision makers’ selection rationales should be classifiable into only two categories: taskwork related and teamwork related. Second, decision makers should have more teamwork-related rationales than taskwork-related rationales.

However, from Study 1 in this dissertation, it is apparent that when individuals make team member selection decisions to form teams, they are biased toward those to whom they have prior relational ties. Thus it is likely that some of the rationales provided by decision makers may be related to the ties they have with the selectee. Therefore, a third category, i.e., tie-related rationales, is also included.

In Study 2, a content analysis is conducted of the selection rationales of decision makers in the soccer player dataset with a view to: (1) identifying the relative importance of each category, and, (2) examining the relationship of tie-related rationales in particular with the same three independent variables that were considered in Study 1.

5.2 HYPOTHESIS DEVELOPMENT

(a) Decision task demand: Leader versus Selector condition

Once again, I draw upon the distinction between choice and judgment tasks to develop the hypothesis. Individual decision makers in the selector condition are performing a judgment task, whereas those in the leader condition are choosing teammates, which is a choice task. A judgment task involves abstract evaluation, whereas a choice task involves the person. Because choices can signal one's identity to others (Shavitt & Nelson, 2000), they trigger self-referent processing, defined as "any evaluation of an option in conjunction with, or in relation to, the individual's self-concept" (Sood & Forehand, 2005: 145). In the leader condition, there should be more self-referent processing, which makes the leader's prior professional experiences and relationships more salient, resulting in more tie-related rationales.

Research that has investigated the process-oriented differences between choice and judgment has found support for the notion that the former often involves simplifying heuristics, where individuals focus on a subset of the available information, whereas the latter often involves holistic processes, where individuals examine a more complete set of information (Billings & Scherer, 1988; Schkade & Johnson, 1989; Senter & Wedell, 1999; Sood & Forehand, 2005;

Wedell & Senter, 1997). This suggests that decision makers in the selector condition may report rationales across all three categories, thereby focusing less on any one category.

H4: Decision makers in the leader condition would provide more tie-related rationales compared to those in the selector condition.

(b) Individualism-Collectivism

People who have independent self-construals and define themselves as independent of relationships, viewing relationships as much less necessary for self-fulfillment and satisfaction, have less important or frequent thoughts about relationships and relationship partners (Cross & Morris, 2003). This suggests that decision makers from individualistic national cultures would provide fewer tie-related rationales.

When individuals define themselves in terms of a domain, they tend to pay close attention to domain-relevant stimuli and to develop elaborate knowledge structures for that domain (Markus & Wurf, 1987). Thus, individuals who define themselves relationally will have well-developed cognitive-associative networks for the domain of relationships (Collins & Loftus, 1975). Research conducted by Cross and colleagues concluded that highly relational persons and those who had positive associations for relationships were more likely than others to remember relational information about others and to organize information about others in terms of relationships (Cross & Morris, 2003; Cross, Morris, & Gore, 2002). This suggests that decision makers from collectivistic national cultures would provide more tie-related rationales.

H5A: Decision makers from collectivistic cultures would provide more tie-related rationales compared to those from individualistic cultures.

Individualists are expected to rely primarily on themselves (Gómez et al., 2000), to have a low need for affiliation (McClelland & Boyatzis, 1984), and to be less concerned with group harmony or cohesiveness than collectivists (Hofstede, 1980; Triandis et al., 1988). Also, individualists devalue team effort in achievement-related contexts, devalue the importance of teams for personal well-being, and prefer high degrees of personal autonomy and self-sufficiency (Dion & Dion, 1991; Taggar & Haines, 2006; Wagner & Moch, 1986). Kirkman and Shapiro (2001) found that in teams composed of individuals who were, on average, lower in collectivism, *resistance to teams* was greater. These findings suggest that for individualists, teamwork-related aspects would not be particularly salient.

Taggar and Haines (2006) found support for the positive relationship between collectivism and self-efficacy for teamwork, suggesting that collectivists would provide more teamwork-related rationales.

H5B: Decision makers from collectivistic cultures would provide more teamwork-related rationales compared to those from individualistic cultures.

In individualistic cultures, the emphasis is more on task than on people (Triandis et al., 1988). People from individualistic cultures are more likely to value contributions to task accomplishment than are people from collectivistic cultures (Gómez et al., 2000; Kim, Park, & Suzuki, 1990). In fact, individualists may prioritize task achievement at the expense of relationships, whereas collectivists may place more emphasis on harmonious relationships at the expense of task accomplishment (Chen, Chen, & Meindl, 1998). This suggests that decision makers from more individualistic cultures would provide more taskwork-related rationales compared to those from more collectivistic cultures.

H5C: Decision makers from individualistic cultures would provide more taskwork-related rationales compared to those from collectivistic cultures.

(c) Individual role interdependence

Van der Vegt, Emans, and Van de Vliert (2001) found that low goal interdependence within members of highly task-interdependent teams explained negative affective outcomes at the individual rather than team level. This suggests that decision makers who have higher goal or role interdependence would behave differently from those who have lower interdependence with regard to those with whom they are highly task interdependent. As discussed earlier, individuals with lower goal interdependence would focus on their individual goals, sometimes at the expense of group performance. Compared to those with higher goal interdependence, they would be less group oriented and therefore would have lower tie-related rationales.

H6: Decision makers whose roles have higher interdependence on team members would provide more tie-related rationales compared to those whose roles have lower interdependence.

5.3 METHODOLOGY

The rationales provided by the decision makers in the soccer player dataset with regard to each of their selection choices have been content analyzed. Whereas the use of self-reported rationales for decisions as data is not common in the organizational behavior (see Isenberg, 1986 for an exception) and related literature, it has been used in the marketing literature (e.g., Cripps

& Meyer, 1994; Kivetz & Simonson, 2002). Nisbett and Wilson (1977) conclude that people may have little ability to report accurately on their cognitive processes. However, the studies from which this conclusion was drawn typically put naïve subjects in novel situations. In this case, the subjects are being asked to give rationales for decisions in a task they are familiar with, and hence this concern is mitigated.

In order to develop a coding scheme for the selection rationales, I undertook the following six steps. First, I reviewed the literature on soccer, and interviewed Joe Luxbacher, head coach of the University of Pittsburgh men's soccer team, to develop a list of factors that are important for selecting soccer players. The factors that are considered important include: physical attributes and conditioning, soccer skills, personality, and soccer intelligence. Second, I mapped these factors onto Goodwin's (1999) four-cell typology of staffing and composition predictors in team situations: teamwork-specific, teamwork-generic, taskwork-specific, and taskwork-generic. This typology was developed in a military context, and included factors such as physical strength and stamina, which are particularly relevant to a soccer context. Third, because Goodwin's (1999) typology, like other classifications of team selection factors, only considered the taskwork and teamwork dimensions, I added a third category to include leader- or ego-related factors. This category included the following subcategories: (1) explicit mention of professional relationship to selectee, (2) explicit mention of common ties between decision maker and selectee, which could involve common nationality or common organization, (3) any other rationale that does not fall into any of the other categories. Fourth, a draft, initial coding scheme, based on the integration of the soccer literature and Goodwin's (1999) typology, with the addition of the tie-related rationales, was created. This draft coding scheme is presented in Appendix F. Fifth, in order to test the coding scheme, I coded the entire content myself and also had an independent

coder code a sample of the content. This revealed two shortcomings of the coding scheme: (1) it was too detailed and made the coding extremely laborious, and (2) even though both personality and team spirit are categorized under the teamwork-generic category, the latter is more explicitly related to teamwork compared to the former, and coding them separately would provide more meaningful data. Sixth, a new, simpler coding scheme was developed and used for the content analysis. The final coding scheme is presented in Appendix G.

The entire content was coded by two independent coders who were unaware of the study's predictions. The inter-coder reliability, as measured by the unweighted Cohen's Kappa, was 87.7%, and disagreements were resolved by discussion.

5.4 RESULTS

The dataset for the content analysis comprised 52 individuals, because selection rationales for four individuals (Geoff Hurst, Rodney Marsh, Pavel Nedved, and Petr Cech) were unavailable. A total of 979 selection rationales were coded. The breakdown of the rationales into the six categories is provided in Table 6.

Table 6: Breakdown of selection rationales by category

	Taskwork-related	Teamwork-related	Tie-related	Total
Generic	82 (8.4%)	95 (9.7%)		177 (18.1%)
Specific	488 (49.8%)	89 (9.1%)		577 (58.9%)
Total	570 (58.2%)	184 (18.8%)	225 (23%)	979

Of the total rationales, 58.2% were taskwork related, 23% were tie related, and 18.8% were teamwork related. Of the 95 teamwork-generic rationales, 55 (58%) were personality related and 40 (42%) were team spirit related, comprising 5.7% and 4.1% of the total rationales,

respectively. That the rationales were heavily skewed toward the taskwork-specific category suggests that decision makers in team settings are not very different from those selecting for individual positions. Not only did the teamwork-related category account for the lowest number of rationales, the team spirit-related rationales accounted for only 4.1% of the total. These results are even more surprising because the decision makers are professional soccer players, and soccer is a quintessential team sport, in which teamwork and team spirit are of paramount importance.

Table 7 provides the descriptive statistics and correlations among the control variables, independent variables, and dependent variables at the broad category level, i.e., taskwork related, teamwork related, and tie related.

Table 7: Descriptive statistics and correlation coefficients

	Mean	s.d.	1	2	3	4	5	6	7	8
Control Variables										
1	Amount of experience	12.98	4.44							
2	Diversity of experience	4.04	2.17	.59**						
Independent Variables										
3	Leader v/s Selector Condition	.44	.50	-.33*	-.39**					
4	Individualism-Collectivism	5.49	.34	-.15	-.32*	-.00				
5	Individual role interdependence	.54	.50	-.14	-.04	.13	-.06			
Dependent Variables										
6	Taskwork-related rationales	10.96	2.45	.34*	.31*	-.69**	.09	.09		
7	Teamwork-related rationales	3.54	2.43	.15	.18	.46**	-.05	-.00	.39**	
8	Tie-related rationales	4.33	2.71	.12	.04	.14	.10	.03	-.41**	-.16

* $p < .05$

** $p < .01$

Of the three independent variables, only the decision task demand variable, which operationalized the leader versus selector conditions, is significantly correlated with two of the dependent variables, taskwork-related rationales ($r = -.69, p < .01$) and teamwork-related rationales ($r = .46, p < .01$). However, the relationship with tie-related rationales is not significant, indicating lack of support for hypothesis 4.

Two of the dependent variables, teamwork- and tie-related rationales, are significantly negatively correlated with each other, suggesting that perhaps the two underlying constructs are orthogonal to each other. Further research is needed to understand the relationship between them.

A hierarchical regression analysis was conducted, entering the control variables (amount of experience and diversity of experience) in the first step, and the independent variables (leader-selector, individualism-collectivism, individual role interdependence) in the second step. Standardized regression coefficients and changes in explained variance were examined. The regression models are presented in Table 8.

Table 8: Regression models.

		Taskwork-related rationales		Teamwork-related rationales		Tie-related rationales	
		Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Control Variables							
1	Amount of experience	.24	.14	.07	.01	.14	.17
2	Diversity of experience	.17	.02	.14	-.03	-.05	.07
Independent Variables							
3	Leader v/s Selector Condition		-.64**		-.47**		.22
4	Individualism-Collectivism		.11		-.06		.16
5	Individual role independence		.01		.06		.04
Total R-square		.13	.50	.04	.22	.01	.07
R-square change			.37**		.18*		.06

* $p < .05$

** $p < .01$

With regard to taskwork-related rationales, the change in r-squared was highly significant ($\Delta r^2 = .37, p < .01$) when the second block of variables (independent variables) was entered. Of the three independent variables, only one, leader versus selector condition, was a significant predictor of taskwork-related rationales ($\beta = -.64, p < .01$). With regard to teamwork-related rationales, the change in r-squared was significant ($\Delta r^2 = .18, p < .05$) when the second block of variables (independent variables) was entered. Of the three independent variables, only one, leader versus selector condition, was a significant predictor of teamwork-related rationales ($\beta = -.47, p < .01$). Thus neither hypothesis H5B, which predicted that decision makers from more collectivistic cultures would provide more teamwork-related rationales (compared to those from

individualistic cultures), nor hypothesis H5C, which predicted that decision makers from individualistic cultures would provide more taskwork-related rationales (compared to those from collectivistic cultures), was supported.

With regard to tie-related rationales, neither the incremental variance explained nor any of the independent variables were significant. Thus, hypotheses H4, H5A, and H6, which predicted that tie-related rationales would be higher for leaders (compared to selectors), collectivistic decision makers (compared to individualistic decision makers), and more role interdependent decision makers (compared to less role interdependent decision makers), respectively, were not supported.

5.5 CONCLUSIONS AND DISCUSSION

If the rationales provided by the decision makers are representative of the factors that they considered while selecting team members, then it appears that they consider taskwork-related and tie-related factors ahead of teamwork-related factors. That teamwork-related rationales or factors appears to be the least salient or important of the three categories is surprising considering the lip service paid to it in the scholarly literature on teams in general, and in the general literature and discussions on sports teams in particular.

In keeping with the overall thrust of this dissertation with regard to the relational heuristics in team formation, the lack of support for tie-related rationales is surprising, particularly with regard to the leader-selector condition variable. The leader-selector condition variable was a significant predictor of relational bias in Study 1, leading one to expect a similar relationship with tie-related rationales. One explanation for this result is that overall level of tie-related

rationales is lower (23%) compared to relational bias (31% to 50%), and therefore there is insufficient power to detect differences. Another explanation is that reported rationales as a dependent variable are not as directly indicative of relational orientation compared to selection decisions.

The finding that selection rationales are skewed toward taskwork is surprising, and could be an artifact of the dataset. Although sports teams have many similarities to work teams, there is an important difference that may have impacted the ability to draw meaningful conclusions in this study. In sports, the skills and abilities required of team members are not only more clearly defined, but also more observable than are those required of team members in organizational situations. This could have resulted in an over-focus on skills and abilities at the expense of more intangible factors. A total of 58.9% of the rationales were specific to playing soccer (i.e., taskwork specific or teamwork specific), and only 18.1% were generic. Similar research in either the laboratory or a field setting may help clarify this issue.

One of the intriguing aspects of this study was the relative lack of teamwork- and team spirit-related rationales. As mentioned earlier, a decision maker may attempt to ensure teamwork or chemistry on his or her team in two ways: (1) by selecting team members on an individual basis whose personality and other characteristics would facilitate teamwork, or (2) by selecting team members in groups or combinations among whom chemistry or cohesion already exists.

I had a coder review the entire content and identify all cases in which decision makers explicitly selected team members in groups of two or more. Appendix H provides the list of all these instances. Out of the 549 selections made by the decision makers in this study, 42 (7.65%) selections have been made on this basis. Except for two cases, one in which Lionel Messi selected his entire under-20 World Cup team (10 choices), and the other in which Hasan

Kachloul selected four German players in combination, the combination selections were at the dyadic partnership level. This further underscores the notion that decision makers in this dataset appear to be mostly focused on the individual level, occasionally at the dyadic level, and very rarely at the subunit or team level.

6.0 LIMITATIONS AND FURTHER RESEARCH

Both datasets in this dissertation can and will be expanded in future work. This will result in larger sample sizes and perhaps statistically significant results for some of the relationships that currently are only directionally supported. The back page feature of the popular soccer magazine *FourFourTwo* may yield more data points for the soccer player dataset. The NFL dataset is amenable to expansion in two directions: prospective and retrospective. First, every year, there is a turnover among NFL head coaches, resulting in the appointment of new head coaches, who in turn select their first-year coaching staff. Second, all NFL clubs have a printed media guide which contains a section entitled, “All Time Coaches,” which lists all the head coaches and assistant coaches that have been employed by that club, their tenure of employment, and the job title(s) they held during their tenure. Based on these lists, coaching rosters for head coaches can be recreated, and if the career data for the individual coaches on the roster are obtainable, then the relational ties between the head coach and his assistants can be identified, and the dataset can be expanded.

Both datasets in this dissertation include only male decision makers. Eagly (1987) suggests that it is useful to think of gender differences in terms of two qualities: communal (selfless and concerned with others), and agentic (self-assertive and motivated to control). Various studies (e.g., Rosner, 1990, Werner & LaRussa, 1985) have demonstrated that, in general, females are more often characterized by communal qualities, whereas males are more often characterized by

agentic qualities. This suggests that female decision makers would have greater relational orientation in team formation compared to male decision makers; this could be tested in future research.

Only direct or first-order ties have been considered in this dissertation. During the past decade, there has been a dramatic increase in research on how social networks are formed and change (e.g., Arrow, 1997; Carley, 1991; Doreian & Stokman, 1997; Fararo & Skvoretz, 1986; Friedkin & Johnsen, 2003; Lazer, 2001; Stokman & Baveling, 1998). A more comprehensive study is needed to identify the role played by indirect ties, through which friends of friends or friends of family members may be selected to the team. The centrality, or otherwise, of the head coach in the network of prior relational ties among all members of his team needs to be explored in future research. According to Hinds et al. (2000: 246), familiarity alone was not adequate to generate a future work tie, but rather depended upon whether the previous experience was successful and whether the prior tie was a strong one. The relevance of tie strength and success of previous collaborations needs to be investigated in future research.

The focus in this dissertation was on studying decisions rather than decision-making processes. The processes were a “black box” and need to be investigated through other methodologies in future research. For instance, in this study, analysis of the rationales cannot determine whether the factors considered preceded the selection decisions, or the selection decisions were made first, and then justified by the rationales. A laboratory experiment using a technique such as protocol analysis could clarify this issue. These issues also need to be explored in other contexts such as entrepreneurial teams, project organizations, and intra-organizational teams.

In recent times, there has been a resurgence of personality theories of leadership. Cannella and Monroe (1997) suggest personality theories as one of three alternative perspectives to the two dominant perspectives on top managers (agency theory and strategic leadership theory). Chatterjee and Hambrick (2007) have recently proposed a narcissistic model of leadership. This dissertation belongs to this stream, but does not operationalize personality variables directly. Further research that either directly or unobtrusively (e.g., Chatterjee & Hambrick, 2007) measures personality variables would be useful to develop a more nuanced model of team leaders' approach to member selections.

Because the biases and heuristics explored in this dissertation are manifestations of cognitive miserliness, a promising line of research would be to examine the relationship between intelligence (Sternberg, 1997) or cognitive complexity or cognitive capacity (Hooijberg, Hunt, & Dodge, 1997) and relational bias in team formation. Individual complexity refers to how attentive or sensitive individuals are to information from their surrounding environments and the extent to which they require information when making decisions (e.g., Tetlock, 1985). Dyson and Preston (2006) found that low-complexity individuals drew almost exclusively from their own generational and cultural context, whereas high-complexity individuals drew from a wider range of sources. Their results suggest that high-complexity individuals would be less biased in their decision making and could be tested in future research.

A relational or biased approach to team formation could result in two types of errors. A form of Type I error could occur when individuals who should be selected are rejected. Also, a form of Type II error could occur when individuals who should be rejected are selected. Although it was not possible to confirm the extent to which these errors have occurred in the datasets analyzed, there was anecdotal evidence of some instances of Type II error in both datasets. In the

soccer dataset, Nakamura chose his personal press officer and manager as his goal-keeper, even though “in truth, he is not a great goalkeeper, but he is a good friend.” Both Kaka and Schweinsteiger chose their brothers, and Kaka chose his father, even though, unlike the rest of their choices, these individuals had never played first-division soccer. In the NFL dataset, when Art Shell was appointed the head coach of the Oakland Raiders for the 2006 season, he hired as his offensive coordinator Tom Walsh, who had been his colleague for 12 years, from 1982 to 1994. Walsh had neither coached in the NFL since 1994, nor coached at any level of the game since 1999, and in fact had spent the previous several years operating a bed-and-breakfast ranch. Walsh was demoted from his offensive coordinator role midway through the season, and both he and Shell were fired, along with most of their colleagues, at the end of the season. These instances illustrate the propensity to prioritize relational ties in both fantasy and real-life teams. The extent to which Type II errors could be taking place in team member selections, and their impact on team processes and performance, needs to be investigated in the future.

6.1 CONTRIBUTION AND IMPLICATIONS

Although recent research has examined the role of social networks or familiarity as mechanisms of team formation (e.g., Hinds et al., 2000; Ruef et al., 2003), it has not distinguished between teams that are formed through self-selection and those that are formed through a search and selection process undertaken by an individual. This dissertation focused on the latter, and analyzed archival data of teams formed by individuals to identify the extent to which relational ties and factors were evident in their selected teams and selection rationales, respectively. The use of archival data to study decision making complements the experimental

approach that has traditionally been used in this domain. This dissertation introduces a new variable, *backing-up subunit*, that is the structural counterpart of the backing-up behaviors construct (Porter et al., 2003). It also brings renewed focus to the conceptualization of role interdependence (Thomas, 1957) that has been relatively neglected.

The overall conclusion is that leaders' relational ties play an important role in team formation, be they fantasy teams or real-life teams. The mean relational bias to the team was 50% among leaders in the soccer dataset and 34% in the NFL head coach dataset. Even when decision makers were not leaders, but rather selectors in a fantasy context, where they could select anyone they wished, even from the past, their relational bias was 31%. These results suggest that relational ties are a general heuristic decision makers use in forming teams, and resort to even more when they are leaders. These findings need to be tested in other contexts.

Further, in real-life situations, team leaders' role interdependence appears to influence their relational approach to team formation. NFL head coaches who had greater individual role interdependence (e.g., they were from a defensive background) had significantly higher relational bias both to their team and to their backing-up subunit, compared to those with lower role interdependence. If this result is validated by research in other contexts, it would imply that role interdependence is a factor that needs to be considered when selecting team leaders.

(a) Teams Research

Although sports teams bear many similarities to work teams, there are also differences that may affect generalizability of findings. The findings particularly with regard to the extent of relational bias and its relationship with individual role interdependence need to be examined in organizational contexts.

Moreland (1987) opines that a better understanding of group formation could help to clarify many other phenomena that occur in small groups. Future research could examine the relationship between relational bias and team processes, particularly in the early stages of group formation, and team performance.

One of the surprising findings from Study 2 was that teamwork-related rationales were not as frequently cited as taskwork-related rationales and tie-related rationales. On one hand, this could be merely be an artifact of the research design. On the other hand, it could imply that teamwork is not as salient a factor in team formation as scholars might expect it to be. And if so, the reasons for this relative lack of salience need to be explored. An explanation that could be investigated is whether teamwork and related terms such as cohesion and chemistry are too amorphous for decision makers to consider. Decision makers' propensity to select team members in combinations to leverage the chemistry that already exists is another avenue for future research. Finally, research could examine whether adopting a more teamwork-salient approach to team formation has beneficial results in terms of team performance.

(b) Leadership

According to the leader-member exchange (LMX) perspective, leaders differentiate among those that they lead, favoring some but not others with trust, opportunity, and decision-making latitude (Dansereau, Graen, & Haga, 1975; Sparrowe & Liden, 2005). The trusted subordinates are referred to as the leader's ingroup, in contrast to those whose relationship with the leader placed them in the outgroup (Sparrowe & Liden, 2005). One implication of this dissertation is that those team members with relational ties to the leader are likely to be in his or her ingroup, and future research could examine whether this is true.

The leader's relational bias to the selected team could be a signal of his or her leadership style. To return to the political vignette used in the Introduction, with regard to the 2008 U.S. Presidential elections, Democratic Presidential nominee Barack Obama has said that his approach to choosing his running mate would be a signal of his leadership style. Leadership style is one of the oldest and most enduring aspects of the leadership literature (Blau & Scott, 1962; Fiedler, 1967; Likert, 1961). One of the typical ways of parsing leadership styles is in terms of a continuum moving from "autocratic" or "boss centered" at one end to "democratic" or "employee centered" at the other (Delbecq, 1964). In a similar vein, Schreiber and Carley (2006), following Tannenbaum and Schmidt (1958), define leadership style by how decisions are made in the organization, i.e., directive or participative. Hill (1973) delineates four styles defined by varying emphasis on task and interpersonal orientations. Future research could identify leaders' *member selection styles*, and examine whether they are related to their leadership styles. For instance, if a team leader selects the same team members for project after project, it may imply that he or she values their contribution, and involves them in decision making, implying a more participative leadership style. Conversely, a team leader with a more directive leadership style may only require the team members to perform their roles, and may therefore adopt a more open search process based on skills and competencies and less influenced by relational ties.

The attempt to delineate *member selection styles* is similar to research on cognitive styles. Tetlock's (2000) found that cognitive style was one of two consistent predictors of how managers interpreted decisions at three levels of analysis. Cognitive style has been defined as an individual's preferred and habitual approach to organizing, representing, and processing information (Streufert & Nogami, 1989). It is widely recognized as an important determinant of individual behavior in the psychology literature (Sadler-Smith & Badger, 1998). To what extent

leaders have a member selection style and its relationship with their cognitive style are areas for future exploration.

(c) Strategic Management

With regard to strategic management, the finding that internal promotees to leadership positions are significantly higher in terms of relational bias compared to external hires has implications for CEO appointment. Tushman and Rosenkopf (1996: 940-941) suggest that “New CEOs who do not simultaneously initiate changes in their teams will be dependent on their team’s current competence, procedures, and cognitive frames” (e.g., Ancona, 1989; Wiersema & Bantel, 1992).

The key advantages of making a sweeping change in the executive team are that it can shift the team’s competence base and increase its heterogeneity of experiences which form the basis for experimentation (O’Reilly & Flatt, 1989; Grinyer & McKiernan, 1990). However, considering that the mean relational bias was 50% in the leader condition of the soccer dataset, and 34% in the NFL head coach dataset, and these are underestimates because of the approach taken in this dissertation, the extent of heterogeneity of experience may not be as high as scholars might expect. More direct testing of the extent of relational bias in new CEOs’ executive teams and its impact on strategy is needed (see Beckman, 2006 for a paper in this domain). If indeed new CEOs have a high degree of relational bias to their executive teams, then the driver for making the sweeping changes may not be a strategic decision to encourage exploration (March, 1991) and experimentation, but rather a political move on the part of the CEO. As Greiner and Bhambri (1989) point out, CEOs who do not initiate executive team change may be held hostage to the team’s existing political equilibrium.

(d) Entrepreneurship

Although the importance of the individuals who create organizations has long been appreciated, scholarship that focuses on the entrepreneurial team is just developing (Forbes et al., 2006). According to Simon, Houghton, and Aquino (1999), entrepreneurs may be particularly prone to biases (Busenitz & Barney, 1997; Shaver & Scott, 1991) because they unintentionally simplify their information processing to diminish the stress and ambiguity associated with the decision to start ventures (Duhaime & Schwenk, 1985; Hansen & Allen, 1992). Although the importance of relational ties to the formation of entrepreneurial teams is well established (e.g., Francis & Sandberg, 2000; Kamm & Nurick, 1993), this dissertation suggests that the background of the entrepreneur, particularly with regard to individual role interdependence, is an important factor. This dissertation suggests that entrepreneurs who have typically had greater role interdependence in their past will have higher relational bias both to their teams and to their backing-up subunits. The questions that need to be explored include what would be appropriate operationalizations of individual role interdependence and backing-up subunits in an entrepreneurial context, whether similar results would be obtained, and what would be the implications of the findings for new venture performance.

Cognition in entrepreneurship has been studied under a variety of terms, such as “entrepreneurial intentions” (Bird, 1988), “entrepreneurial intuition” (Mitchell, Friga, & Mitchell, 2005), and “owner-managers’ cognitive style” (Brigham, De Castro, & Shepherd, 2007). Future research could examine the relationship between the aforementioned constructs and the entrepreneur’s relational bias to team formation.

APPENDIX A: LIST OF SOCCER PLAYERS IN DATASET 1

Sr.No.	PI_name	Nationality	Sr_No	PI_name	Nationality
1	Franz Beckenbauer	Germany	29	Radhi Jaidi	Tunisia
2	Alessandro Nesta	Italy	30	Mario Melchiot	Netherlands
3	Michel Ballack	Germany	31	Michael Reiziger	Netherlands
4	Bastian Schweinsteiger	Germany	32	Jaap Stam	Netherlands
5	David Beckham	England	33	Ramon Vega	Switzerland
6	Steven Gerrard	England	34	Marc Bircham	Canada
7	Mark van Bommel	Netherlands	35	George Boateng	Netherlands
8	Arjen Robben	Netherlands	36	Ronald de Boer	Netherlands
9	Patrick Vieira	France	37	Giovanni van Bronckhorst	Netherlands
10	Zinedine Zidane	France	38	Phillip Cocu	Netherlands
11	Kaka	Brazil	39	Ryan Giggs	Wales
12	Juan Roman Riquelme	Argentina	40	Alf-Inge Haaland	Norway
13	Xavi	Spain	41	Don Hutchison	Scotland
14	Xabi Alonso	Spain	42	Hassan Kachloul	Morocco
15	Shunshuke Nakamura	Japan	43	Richard Langley	Jamaica
16	Tranquillo Barnetta	Switzerland	44	Marc Overmars	Netherlands
17	Raul	Spain	45	Steven Reid	Ireland
18	Henrik Larsson	Sweden	46	Gary Speed	Wales
19	Lionel Messi	Argentina	47	Joseph-Desire Job	Cameroon
20	Lukas Podolski	Germany	48	Patrick Kluivert	Netherlands
21	Simao Sabrosa	Portugal	49	Lomana LuaLua	Congo
22	David Trezeguet	France	50	Shaun Maloney	Scotland
23	Jerzy Dudek	Poland	51	Pavel Nedved	Czech Rep
24	Dean Kiely	Ireland	52	Petr Cech	Czech Rep
25	Antti Niemi	Finland	53	Gheorghe Hagi	Romania
26	Winston Bogarde	Netherlands	54	Jamie Carragher	England
27	Frank de Boer	Netherlands	55	Geoff Hurst	England
28	Vegard Heggem	Norway	56	Rodney Marsh	England

APPENDIX B: LIST OF NFL HEAD COACHES IN DATASET 2

Sr.No.	Head Coach	Club	Year	Sr.No.	Head Coach	Club	Year
1	Al Groh	New York Jets	2000	41	Jimmie Johnson	Dallas Cowboys	1989
2	Andy Reid	Philadelphia Eagles	1999	42	Joe Gibbs	Washington Redskins	2004
3	Art Shell	Oakland Raiders	2006	43	John Fox	Carolina Panthers	2002
4	Barry Switzer	Dallas Cowboys	1994	44	John Harbaugh	Baltimore Ravens	2008
5	Bill Belichick	New England Patriots	2000	45	Jon Gruden	Tampa Bay Buccaneers	2002
6	Bill Callahan	Oakland Raiders	2002	46	Ken Whisenhunt	Arizona Cardinals	2007
7	Bill Cowher	Pittsburgh Steelers	1992	47	Kevin Gilbride	San Diego Chargers	1997
8	Bill Parcells	Dallas Cowboys	2003	48	Lane Kiffin	Oakland Raiders	2007
9	Bobby Petrino	Atlanta Falcons	2007	49	Lovie Smith	Chicago Bears	2004
10	Bobby Ross	Detroit Lions	1997	50	Marty Mornhinweg	Detroit Lions	2001
11	Brad Childress	Minnesota Vikings	2006	51	Marty Schottenheimer	San Diego Chargers	2002
12	Brian Billick	Baltimore Ravens	1999	52	Marvin Lewis	Cincinnati Bengals	2003
13	Bruce Coslet	Cincinnati Bengals	1997	53	Mike Ditka	New Orleans Saints	1997
14	Butch Davis	Cleveland Browns	2001	54	Mike Holmgren	Seattle Seahawks	1999
15	Cam Cameron	Miami Dolphins	2007	55	Mike McCarthy	Green Bay Packers	2006
16	Chan Gailey	Dallas Cowboys	1998	56	Mike Mularkey	Buffalo Bills	2004
17	Chris Palmer	Cleveland Browns	1999	57	Mike Nolan	San Francisco 49ers	2005
18	Dan Reeves	Atlanta Falcons	1997	58	Mike Riley	San Diego Chargers	1999
19	Dave Campo	Dallas Cowboys	2000	59	Mike Shanahan	Denver Broncos	1995
20	Dave McGinnis	Arizona Cardinals	2001	60	Mike Sherman	Green Bay Packers	2000
21	Dave Shula	Cincinnati Bengals	1992	61	Mike Smith	Atlanta Falcons	2008
22	Dennis Erickson	Seattle Seahawks	1995	62	Mike Tice	Minnesota Vikings	2002
23	Dennis Green	Arizona Cardinals	2004	63	Mike Tomlin	Pittsburgh Steelers	2007
24	Dick Jauron	Buffalo Bills	2006	64	Mike White	Oakland Raiders	1995
25	Dick LeBeau	Cincinnati Bengals	2001	65	Nick Saban	Miami Dolphins	2005
26	Dick Vermeil	Kansas City Chiefs	2001	66	Norv Turner	San Diego Chargers	2007
27	Dom Capers	Houston Texans	2002	67	Pete Carroll	New England Patriots	1997
28	Eric Mangini	New York Jets	2006	68	Ray Rhodes	Green Bay Packers	1999
29	Gary Kubiak	Houston Texans	2006	69	Rod Marinelli	Detroit Lions	2006
30	George Seifert	Carolina Panthers	1999	70	Romeo Crennel	Cleveland Browns	2005
31	Gregg Williams	Buffalo Bills	2001	71	Scott Linehan	Saint Louis Rams	2006
32	Gunther Cunningham	Kansas City Chiefs	1999	72	Sean Payton	New Orleans Saints	2006
33	Herm Edwards	Kansas City Chiefs	2006	73	Steve Mariucci	Detroit Lions	2003
34	Jack Del Rio	Jacksonville Jaguars	2003	74	Steve Spurrier	Washington Redskins	2002
35	Jeff Fisher	Tennessee Titans	1995	75	Tom Coughlin	New York Giants	2004
36	Jim E. Mora	Indianapolis Colts	1998	76	Tom Flores	Seattle Seahawks	1992
37	Jim Fassel	New York Giants	1997	77	Tony Dungy	Indianapolis Colts	2002
38	Jim Haslett	New Orleans Saints	2000	78	Tony Sparano	Miami Dolphins	2008
39	Jim Mora Jr.	Atlanta Falcons	2004	79	Wade Phillips	Dallas Cowboys	2007
40	Jim Zorn	Washington Redskins	2008				

APPENDIX C: INTERVIEW SUMMARY – COACH KEN WHISENHUNT

This telephone interview was conducted by Jonathan Pinto and Richard Herko, April 8, 2008, 3.10–3.30 p.m. Mr. Whisenhunt’s responses are summarized.

How he went about filling up his coaching staff:

Over his years as a player and assistant coach, he had been making a list of people he thought would make good coaches or who were already position coaches that he would hire if he became head coach. By the time he interviewed for a head coaching job, he had a list that was three people deep for every position.

He hired the offensive and defensive coordinators first and then hired the rest of the coaching staff in conjunction with them.

There are two types of assistant coaches: (1) those who are under contract, and (2) free agents, whose contracts are expired, or have been fired; there is usually competition to get them.

This list of prospective coaches was important because it was a factor in his selection as head coach. The Arizona Cardinals management wanted to see whom he would bring in as assistant coaches and the quality of his coaching staff.

The factors that led him to put coaches on this short list were the coaches’ ability to communicate and to be a good teacher. If a particular coach was not available because he was under contract, then Whisenhunt would go to the next person on his depth chart. He got someone from his depth chart for all his coaching staff positions.

“You hire who you know.” If you don’t know them directly, you take the opinion of someone you trust. For instance, Whisenhunt would take the counsel of Dan Henning for a recommendation of a position coach. Henning drafted him out of college, was his head coach with the Atlanta Falcons, and knows him and his coaching style.

What other factors would contribute to a coach making the short list or being hired:

Background is a factor—both playing and coaching background. Just like in any other profession, your background says a lot about you.

Events like the “Combine” (where the NFL owners and coaches evaluate the NCAA players) are very much like interviews, because you get to meet other coaches and talk with them.

The importance of the “coaching scheme”:

This is very important for him. For instance, he wanted to hire a wide receivers coach from Philadelphia, but that person was specialized in the West Coast-style offense, which is not

what Whisenhunt favors. He felt that he would have to spend too much time to help the position coach learn his scheme.

How important creativity and flexibility are to him, particularly since he is known throughout the American football world for his “gadget plays”:

Flexibility is very important to him because coaches have to adapt their schemes to the players that they have. With the Pittsburgh Steelers, the offensive coaches had to customize their tactics to suit the talents of Hines Ward, the Steelers veteran wide receiver.

He felt that all coaches were creative and the gadget plays were not particular to him.

What influence the general manager or the owners had over his coaching staff decisions:

While that sometimes happens with other organizations, in this case he had complete authority. In fact, the GM and the owners did not even interview the candidates. They might have seen or met them, but did not formally interview them.

He did allow that other teams handle this situation very differently and he was aware of teams where the owner or the GM had input into the hiring of individual coaches.

Whether he got a capped budget for his coaching staff or a fixed number of positions:

He got approval for a fixed number of positions, and then the compensation for each assistant coach was individually negotiated.

The extent to which head coaches release their assistants for jobs:

By NFL rules, no one can stop someone from being interviewed for a head coaching job. And usually, if the assistant coach is advancing in his career, the head coach will not stand in the way, e.g., for a coordinator position. But if it is a lateral move, the organization may block the process. For instance, he wanted to hire the tight ends coach from the Pittsburgh Steelers, but the Steelers refused permission since it was a lateral move. Typically, assistant coaches are on a two-year contract.

Whether he keeps updating his short list of assistant coaches:

Yes, not so much to upgrade his coaching staff, but to prepare for inevitable turnover. One of his assistants was being interviewed for the Miami Dolphins head coaching job, so he always has to be prepared.

Whether other coaches have a similar short list approach to hiring:

Probably everyone who is in the running for a head coach job has a similar list. He could not think of anyone who did not have such an approach, though, just like there is variation in “schemes,” there must be some variety in approaches.

APPENDIX D: MEETING SUMMARY - DAN ROONEY

The interview was conducted by Jonathan Pinto, March 4, 2008, 11.45 a.m.–1 p.m., Pittsburgh Steelers Training Facility, 3400 South Water Street, Pittsburgh, PA 15203.

We always hire for the long term, while other teams will fire a coach after two or three seasons if the coach does not win it all. Therefore, for us, having a process to select the head coach is very important. Once you hire a head coach, you give him the tools he needs to do the job, and the coaching staff is one of those tools. The head coach has complete authority to choose his coaching staff. I tell the head coach that I am here to help you, if you need my help. He tells us who he wants to call for an interview. We meet with the hires to give our inputs, and we tell him the pluses and minuses that we have heard about the people on the list, what are their assets, and what information he may need to ferret out to address areas of concern. In case we have heard something negative about the person that cannot be fixed (e.g., dishonesty), then we let the head coach know. If it is a negative that can be fixed (e.g., the potential assistant coach has a bad personality), then we tell the head coach that that is something he would have to deal with, if he wound up hiring the person.

When I was looking for a head coach, I compiled a list of potential head coach hires from my knowledge, from what I had heard, and from talking to people. Then I make calls to people on the list and whittle down the list based on whether the person is interested in the job, and other information that can be gleaned through a telephonic interview. You can get a lot of information from a telephonic interview. Sometimes you interview people because an important friend asks you to. So you end up with a short list of five to seven people. Once a short list is prepared, it is important that you meet everyone and not jump to a decision after the first or second person has been interviewed (because sometimes the interviewers themselves get bored with the process). It is important to meet potential head coach hires multiple times before a final decision is made. It is also important to meet the head coach's wife and see the relationship between them. The process we follow is similar to that done in academia when they are hiring a dean.

We don't look for someone with an offensive background or defensive background. He is the head coach of the entire team, and that goes beyond just offense or defense. Sometimes other teams, when they have been losing with a head coach from a defensive background, will hire someone from an offensive background thinking that that will solve the problem.

"The system" is not that important for us. We hired a head coach from a 4-3 system even though we are a 3-4 system, because we expect them to be able to work it out among themselves. And they do. And sometimes you could go 3-4 on third down and 4-3 on first down. What Mike Tomlin said about Xs and Os being overrated is correct, because no one hires based on that. That is basic knowledge that is taken for granted at this level.

What all coaches tend to do, however, is to change the jargon. When a receiver ran a straight route it used to be called a “take-off,” but now they call it something else. Each one has his own jargon. And they keep changing it. They say it is so that the linemen don’t catch on to their play calls.

Some coaches have a long list of plays. But I don’t think having a very long list of plays is useful. Some coaches believe in scripting the first 15 plays. But sometimes the play you scheduled for #15 might have to be play #2 depending on the situation you are faced with. Once I was talking to Bill Walsh, the famous coach, and he said that his scripting never worked against the Steelers. He said everyone ran the routes they were supposed to run, but the quarterback was flat on his back and that was not in the script!

The head coach is an administrator. We sometimes give him someone to help him ensure that people show up on time for meetings and so on, so that he does not get caught up in minutiae. Because he has to be the leader, with the whole pyramidal structure under him.

Sometimes people say that coaches should not have a gruff style (e.g., Vince Lombardi, Chuck Noll), but that is not as important as whether the players respect them or not. When Chuck Noll called his first meeting, he told the team, “I have been watching film of you guys playing, and you are all nice guys, but you are not good at football.” And indeed, some of them were cut shortly thereafter.

The most important thing is that the coach has to be true to himself. If he tries to be something that he is not, the players pick up on it, and it will not work.

Mike Tomlin had to work more with the special teams this past year than is typical, because that unit had not been performing well. But in general, he would work with all the units in rotation, one day special teams, the next day offense, and on the third day defense.

With regard to compensation, we give the head coach the total amount that he can spend on his coaching staff, then it is up to him how he chooses to divide up the pie among his coaching staff. There are performance-linked incentives, of course.

During the season, the coaches work seven days a week. They get a week off, immediately after the end of the season. Then during the off-season, they usually work five days a week. They also get around six weeks off, typically from the middle of June to the end of July, just before training camp. During the pre-season, they study film, but not as much as during the regular season.

Sometimes young, new head coaches have to hire people they know from before, because others are not willing to take the risk to join them. They expect new coaches, especially if they are young, and we have been hiring young head coaches, to get fired quickly, and they don’t want to risk their jobs. It should be different with coaching jobs at the Steelers because they know that we hire for the long term. However, this happened to us one time, many years ago, when Chuck Noll was our head coach. This guy joined us, and then got an offer from someone

else, and left us to go there. Chuck Noll stayed our coach for 20 years, while the guy he joined got fired in four years.

Head coaches don't necessarily hire people from their personal contacts in the unit in which they have a background, such as offense or defense. Like I said, it depends on who is willing to join them. Also, by the time the head coach is hired, around six weeks have already elapsed since the end of the season, and a lot of the assistant coaches are already hired away and not available. Thus, the biggest advantage of hiring a head coach quickly is that he is able to get the pick of the assistants.

But having said that, Mike Tomlin did what you are suggesting might be happening. He kept the defense coaching staff intact and brought in people on offense.

The concept of coaching staff has evolved over time. In the old days, the head coach himself was part time, and had to take up another job (like a day job) in the off-season. Then it evolved to three coaches: head coach, offense, and defense. Then it evolved to 10 coaches and stayed that way for a while: offense (coordinator, running backs, receivers, offensive line, quarterbacks), defense (defensive line, linebackers, and defensive backs), and a special teams coach, plus a head coach. Nowadays, there is even greater specialization, resulting in a coaching staff of around 15-18. For instance, we have two special teams coaches—one for returns, and the other for kicking. We also have a separate tight ends coach from a receivers coach. Plus, you have a weight guy (i.e., strength and conditioning), and some guys who help break down film (assistants or quality control). We have had a coach who has been here for a long time, John Mitchell, who we have given the designation of assistant head coach, to reflect his seniority, but it is the designation "coordinator" that is really important.

Comments from Bob Labriola, Steelers PR head and writer of the "Steelers Digest" on the Steelers Web site (over lunch with Mr. Rooney in the Steelers cafeteria):

[When told by Mr. Rooney about the topic of this dissertation:] Are you studying the head coach's assistant coach selections when they do it right or when they get it wrong? Deciding the best approach to selecting assistants is tricky because sometimes going with the personal contacts is a good idea, and sometimes it is not. Sometimes your brother is the best guy for the job, but if you are just going with someone because of a promise you made to him when you were both cleaning out lockers, then that is leader-related.

Head coaches tend to be very egocentric. They want to go with their own system because of their egos. They tend not to want to adapt to the team they are facing that particular week. Now, Belichick did not have an ego with regard to changing up his tactics from week to week, but he had an ego with regard to his approach, i.e., the spying, despite being told not to do so by the authorities.

APPENDIX E: MEDIA REPORT OF COACH TOMLIN'S RELATIONAL TIES

PITTSBURGH TRIBUNE-REVIEW

Tomlin locks in first staff

By Kevin Gorman

TRIBUNE-REVIEW

Tuesday, January 30, 2007

Mike Tomlin put a personal stamp on his first coaching staff Monday, when the Steelers announced two promotions and the hirings of six assistants, including five who have worked in close proximity with Tomlin.

Bruce Arians was officially promoted from receivers coach to offensive coordinator to replace Ken Whisenhunt, now the head coach of the Arizona Cardinals.

Ray Horton was named defensive backs coach after spending three years as assistant to Darren Perry, who was not retained. Horton coached for the Cincinnati Bengals when Tomlin worked at the University of Cincinnati.

Ken Anderson (quarterbacks), Randy Fichtner (receivers), Bob Ligashesky (special teams), Kirby Wilson (running backs), Larry Zierlein (offensive line) and Amos Jones (assistant special teams) also joined Tomlin's staff, lending a veteran presence to the 34-year-old head coach's first season.

"I think we have put together a staff of good people who are also good football coaches," Tomlin said in a statement. "They are all good communicators who will help make sure our players understand exactly what is expected of them. I look forward to working with them all on a daily basis."

Here is a look at the additions:

- Anderson, 57, spent the past four seasons with the Jacksonville Jaguars, where he was quarterbacks coach. He also handled the receivers for one season (2003). Anderson played 16 seasons for the Cincinnati Bengals and spent 10 as their quarterbacks coach, including five as offensive coordinator. Anderson was the Bengals' offensive coordinator while Tomlin coached at the University of Cincinnati. Anderson replaces Mark Whipple.

- Fichtner, 43, spent the past six seasons as offensive coordinator/quarterbacks coach at the University of Memphis. He was offensive coordinator at Arkansas State in 1997-98, when

Tomlin was an assistant there. Fichtner also coached at Purdue, Michigan, Southern Cal and UNLV.

- Ligashesky, 44, is a McKees Rocks native and Indiana (Pa.) graduate who coached tight ends and was special teams coordinator at Pitt from 2000-03. Ligashesky spent the past two seasons with the St. Louis Rams after a year as assistant special teams coach with Jacksonville. He met Tomlin through Tampa Bay special teams coach Richard Bisaccia, a longtime friend. Ligashesky replaces Kevin Spencer, who joined Whisenhunt's staff.
- Wilson, 45, spent the past three seasons with the Arizona Cardinals. He coached with Tomlin in Tampa Bay (2002-03) after stints with the Washington Redskins and New England Patriots. He replaces Dick Hoak, who retired.
- Zierlein, 61, spent last season with the Buffalo Bills after five seasons with the Cleveland Browns, where Arians was formerly the offensive coordinator. Zierlein also has an extensive college coaching history, coaching at Cincinnati from 1997-2000, when Tomlin was an assistant there, as well as Tulane, Louisiana State and Houston. He replaces Russ Grimm, who joined Whisenhunt's staff.
- Jones, 47, spent the past three seasons coaching special teams/outside linebackers at Mississippi State. He also coached at Cincinnati when Tomlin was there, from 1999-2002, and had stops at James Madison, Alabama, Temple (from 1986-88, when Arians was the Owls' head coach) and as kicking game coordinator at Pitt in 1992.

APPENDIX F: INITIAL CODING FRAMEWORK

- 1) Task Related
 - a) Generic
 - i) Physical predictors, e.g., height, weight, body size (Abbott & Collins, 2004; Williams & Reilly, 2000)
 - ii) Physiological conditioning, e.g., aerobic capacity, anaerobic endurance, speed, stamina, agility, flexibility (Jeffrey, 1935; Coerver, 1983; Luxbacher, 1991; Williams & Reilly, 2000)
 - b) Specific
 - i) Ball control/ Psychomotor skills, e.g., passing, receiving, shooting, heading skills (Abbott & Collins, 2004; Jeffrey, 1935; Coerver, 1983; Luxbacher, 1991)
 - ii) Dominating the opponent, e.g., receiving, dribbling (Coerver, 1983)
 - iii) Creating and using chances, e.g., shooting, heading (Coerver, 1983)
 - iv) Defensive qualities, e.g., sliding tackles (Coerver, 1983)

- 2) Teamwork Related
 - a) Generic
 - i) Personality, e.g., self-confidence, anxiety control, motivation, aggressiveness (Jeffrey, 1935; Williams & Reilly, 2000)
 - ii) Constructive teamwork, e.g., unselfish playing with cooperative effort (Jeffrey, 1935)
 - iii) Sociological predictors, e.g., parental support, education, cultural background (Williams & Reilly, 2000)
 - b) Specific
 - i) Deceptive tactics, e.g., field vision (Jeffrey, 1935)
 - ii) Beating/bypassing opponents (Coerver, 1983)
 - iii) Moving with and without the ball (Coerver, 1983)
 - iv) Perceptual-cognitive/conceptual skills, e.g., attention, anticipation, game intelligence, decision making, creative thinking (Abbott & Collins, 2004; Williams & Reilly, 2000)
 - v) Psychomotor strategies, e.g., principles of attack and defense (Luxbacher, 1991)
 - vi) Psychosocial concepts, i.e., reading the game (Luxbacher, 1991)
 - vii) Psychobehavioral elements, e.g., goal setting, realistic performance evaluation (Abbott & Collins, 2004)

- 3) Leader Related
 - a) Relational ties (e.g., teammate, opponent)
 - b) Affinity ties (e.g., favorite club)
 - c) Miscellaneous (e.g., share a birthday, hairstyle)

APPENDIX G: FINAL CODING SCHEME

1) Task-Related

a) Generic (**TK-GEN**)

- i) Physical Attributes, e.g., height, weight, body size
- ii) Conditioning, e.g., endurance, speed, stamina, agility, flexibility

b) Specific (**TK-SPEC**)

- i) Ball skills, e.g., passing, receiving, shooting, heading skills, dribbling, sliding tackles, free kicks, corner kicks, shot-stopper
- ii) Flair player/ stylish player, Skillful player, Technique
- iii) Best player/ won awards
- iv) His best is yet to come

2) Teamwork-Related

a) Generic (**TW-GEN**)

- i) **PER:** Personality, e.g., self-confidence, anxiety control, motivation, aggressiveness, strength to never give up and never lose hope
- ii) **SPRT:** Team spirit, e.g., unselfish playing with cooperative effort, leader of the team

b) Specific (**TW-SPEC**)

- i) Field vision, ability to see/read the game, moving without the ball, anticipation, game intelligence, decision making, creativity, versatility, defends as well as attacks

3) Tie-Related (**TIE**)

- a) Former teammate, former colleague
- b) Family member
- c) Same nationality
- d) Member of my favorite club,
- e) Met socially
- f) Childhood hero
- g) Miscellaneous (e.g., share a birthday, like hairstyle)

APPENDIX H: TEAM MEMBERS SELECTED IN COMBINATION

Lionel Messi: So I'm going to go for the team I played in that won the U-20 World Cup last year in Holland. . . . [A]t the back, I would have Ezequiel Garay, Gabriel Paletta, Gustavo Cabral and Lautaro Formica. Those four guys make up a great defensive line which is always really solid and very difficult to break through. In midfield, just like in the U-20 tournament, I would have Fernando Gago, Rodrigo Archubi and Pablo Zabaleta, all excellent players.

Juan Roman Riquelme: [A]head of us would be my strikers: Gabriel Batistuta and Claudio Caniggia. I would have them because it was always really beautiful to see the two of them playing together. Batistuta was the best striker of the 90s, no doubt about that. He came from nowhere and scored goals like no other; I admire him a lot. Caniggia, on the other hand, was the sort of player who would maybe only appear at some matches, but he had so many spectacular moments.

Simao Sabrosa: My centre-halves would be the Chelsea pair John Terry and Ricardo Carvalho. They are both good players who complement each other well and, in defensive terms, no-one else can beat them.

Ryan Giggs: *Steve Bruce/Jaap Stam*: I've got to go for Brucey. He would complement Jaap really well in the heart of defence.

Radhi Jaidi: *Thierry Henry/Ziad Jaziri*: A perfect foil for Henry, he [Jaziri] represents the final piece of the jigsaw for my fantasy XI.

Hassan Kachloul: *Harald Schumacher, Franz Beckenbauer, Paul Breitner and Karl-Heinz Rummenigge*: Another German, but all great teams have a great spine and Schumacher, Beckenbauer, Breitner and Rummenigge certainly give mine that.

Dean Kiely: *Robbie Keane/Niall Quinn*: He [Keane]'s a great player and would form a perfect little and large partnership with Niall upfront.

Lomana LuaLua: *Sol Campbell/Rio Ferdinand*: He [Campbell] might not be as composed on the ball as Ferdinand but the pair really complement each other when they play for England. *Zinedine Zidane/Patrick Vieira*: He doesn't attack as much as Zidane but those two would be a great combination. Vieira is a fantastic tackler and does things simply.

Antti Niemi: *Chris Marsden/Wayne Bridge*: His [Marsden's] partnership with Wayne Bridge down the left-hand side for Southampton was different class and I'd like to see it replicated in this team! *Kevin Phillips/James Beattie*: [Phillips is] the perfect foil for James Beattie and together they used to cause havoc for other teams.

Marc Overmars: *Steve Bould/Ronald Koeman*: I think that next to a player like Bouldie it would be great to have Koeman, as it would be a great combination.

Gary Speed: *Ian Wright/Alan Shearer*: Wrighty's always been a great character in the game and he's a natural goalscorer. So by picking Wright and Shearer, that means I've got a quick striker and a slow one up front in my Premiership Fantasy XI.

Jaap Stam: *Adri van Tiggelen/Frank] Rijkaard*: He [van Tiggelen] would complement Rijkaard really well in central defence as Rijkaard could bring the ball out and van Tiggelen would stop the forwards. *Edgar Davids/Roy Keane*: What an awesome midfield Edgar and Roy would make. I wouldn't fancy anyone's chances of getting past them. Edgar is more of a holding, defensive midfielder, so it would give Roy more of a license to push up and support the attackers. *Dennis Bergkamp/Marco van Basten*: Dennis would be the perfect foil for Marco. I would love to see them playing as a partnership—Dennis could thread the ball through for Marco to run on to. I have no idea how defences would stop them.

Ramon Vega: *Raul/Christian Vieri*: He [Vieri] has the ability to score plenty of goals and would be an ideal strike partner to Raul.

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