DISCRIMINATE ANALYSIS OF THE

PERSONALITY CHARACTERISTICS OF MAJOR COLLEGE

BASEBALL UMPIRES

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CHAPTER ONE

Introduction

The current training process for college baseball umpires has been primarily concerned with their technical abilities on the field and the umpire's knowledge of playing rules. Ford (1999) declared that sport psychology researchers have paid keen attention to factors that affect the performance of baseball players and umpires on the field (R. Fetchiet, personal communication, November 4, 2009). Yet, the factor of personality characteristics of the college baseball umpire as they ameliorate interaction among players, coaches, fans has been largely neglected in the literature. Dale (1985) stated "studying personality development and traits, one searches for characteristics … which are subject to change from one experience to another" (p.51). The purpose of this study is to examine whether a cluster of personality characteristics and traits is possessed by Big XII Conference baseball umpires which might inform the selection process of potential major college baseball umpires.

Sport officials (i.e., football referees, basketball officials, baseball umpires) manage the contest, interpret rules, and strive in each game to conduct fair and ethical contests. College baseball umpires operate within the rules and norms of the game as arbiters of the contest. Marcie Balch and David Scott reported that game officials are crucial for the smooth functioning of sport at all levels (Balch, 2007). Thus, a primary focus of NCAA conferences is to obtain and retain game officials through careful examination and constant evaluation of the game officials (R. Fetchiet, personal

communication, November 4, 2009). But, to what degree has the examination and evaluation of game officials involved aspects of personality? Perhaps an identification of a cluster of personality characteristics in baseball umpires currently employed by the Big XII Conference could influence the future selection process. Thus, it is important to select an assessment tool to identify personality characteristics and traits of the college baseball umpire.

Nancy Schaubhut described personality as generally measured by a self-reporting assessment that "respondents indicate their feelings or behaviors" (2006, p.1). Paul Costa and Robert McCrae have developed the Revised Neuroticism Extraversion Openness Personality Inventory (Revised NEO Personality Inventory) that provides a reliable measure of the five domains of adult (17 and older) personality (Costa & McCrae, 1985). Costa and McCrae's Revised NEO Personality Inventory provides an effective profile of neuroticism, extraversion, openness, agreeableness, and conscientiousness when global information on personality is considered (Costa, 1985). Due to the fact that all future Big XII and NCAA Division I baseball umpires are adults, the Revised NEO Personality Inventory was selected to measure the five major domains of personality in this study. It is proposed that obtaining a perspective into the potential umpire's personality could be useful during the selection process.

The current selection method of Big XII baseball umpires isolates individuals that possess an effective knowledge of the playing rules, who have mastered the mechanics of baseball officiating on the field, and exhibited qualities to effectively manage each game (R. Fetchiet, personal communication, November 4, 2009). Considering these criteria, the use of a personality assessment of college baseball umpires during the selection process

may be useful as a predictor of who could later become Big XII Conference baseball umpires.

Richard Fetchiet, Big XII Conference Supervisor of Umpires outlined the current selection process for additions to the Big XII umpire staff.

"When I need to select a new umpire for the Big 12 Conference, I generally look for an umpire with background/experience as follows: (1) NCAA Division I Post Season experience -- CWS, Super-Regionals, Regionals; (2) Conference Tournament experience in another high level Division I conference (the post season experience documents high ratings/rankings in the conference or conferences the umpire is currently working); and (3) Professional umpire experience, particularly at the AAA or AA level. After a candidate is identified, I cross-check their background with their current Coordinator or Assignor, other experienced umpires they've worked with, and coaches who may be familiar with their work and ability. (R. Fetchiet, personal communication, November 4, 2009).

The current selection process for the Big XII Conference only recognizes the previous "on-the-field "experience of potential Big XII Conference baseball umpires but fails to take into account personality characteristics as a factor for selection.

Rationale for the Study

Over the years, there has been a clear interest in determining which psychological factors influence, explain and perhaps predict behavior (Friedman & Schustack, 2003). "Personality tests normally measure emotional adjustment and the ability to relate with

others satisfactorily, therefore, they seem quite relevant for use in the business and sport world" (Dale, 1985, p. 2). Increasingly, researchers are investigating how personality traits and characteristics affect sport. Thus, can characteristics of personality indicate and predict the behavior of baseball umpires as they interact with players and coaches on the field?

In the behavioral sciences, personality characteristics are generally assessed utilizing self-report questionnaires on which the subjects delineate their behavioral preferences that yield a measure of personality traits within five major domains of personality (Engler, 2006). Past researchers have developed numerous instruments that have been refined over the years to measure emotional adjustment, and personality traits and characteristics as predictors of human behavior (Butcher & Dahlstrom, 1989; Cattell, Eber & Tatsuoka, 1980; Costa & McCrae, 1992; Gough & Bradley, 1996; McCrae & Costa, 2004; Paunonen & Ashton, 2001; Saggino & Kline, 1996). Therefore, this study will investigate aspects of personality in regard to college baseball umpires in search of a cluster of characteristics and traits that may inform the selection process of potential college baseball umpires.

Statement of the Problem

The central purpose of this study is to identify a cluster of personality characteristics and traits possessed by Big XII Conference baseball umpires to inform the selection process of potential major college baseball umpires. In order to identify a cluster of personality characteristics the study will employ the Revised NEO Personality Inventory to measure the five major domains of personality, namely neuroticism, extraversion, openness, agreeableness, and conscientiousness.

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Research Hypotheses

The following research hypotheses were made and examined during the course of this study.

1. There will be statistical similarities between two groups of college baseball umpires of the five factors of personality scores as measured by the Revised NEO Personality Inventory. (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience).

2. There will be statistical similarities between two groups of college baseball umpires of the specific six independent facets scores of each factor of personality as measured by the Revised NEO Personality Inventory.

3. There are personality styles that will statistically discriminate across the two groups of college baseball umpires as measured by the Revised NEO Personality Inventory.

4. There is a cluster of personality characteristics and traits that can serve as a predictor for future selection of potential college baseball umpires.

Assumptions

The following assumptions were made within the investigation of this study:

1. If scores on the Revised NEO Personality Inventory were above the mean standard score, the probabilities are that the person will be one who was functioning effectively both socially and intellectually.

2. It is assumed that each individual will fully complete the Revised NEO Personality Inventory did so without any attempt at faking or alteration.

3. It is assumed that the Big XII Conference Supervisor of Umpires will not use unfair and unethical selection procedures to select conference umpires.

Definition of Terms

The <u>Neuroticism Extraversion Openness Personality Inventory-Revised</u> (Revised NEO Personality Inventory). The Revised NEO Personality Inventory is 260-item measure of the Five Factor Model: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. The Revised NEO Personality Inventory is a concise measure of the 5 major domains of personality as well as the 6 facets that define each domain. Together, the 5 domain scales and 30 facet scales of the Revised NEO Personality Inventory allow a comprehensive assessment of adult personality. The five domains are: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience.

<u>NCAA</u>. This term refers to the National Collegiate Athletic Association. The NCAA was initiated when President Theodore Roosevelt summoned college athletic leaders to the White House for two conferences to encourage reforms to the game of football. The IAAUS was officially constituted on March 31, 1906, and took its present name in 1910. The NCAA, as of July 2009, is comprised of 1,051 active and 18 provisional members across Divisions I, II and III.

<u>Big XII Conference umpires</u>. This term refers to the college baseball umpires in good standing with the NCAA and is assigned by the Big XII Conference Supervisor of Umpires to work conference series. For the purposes of this study, Big XII Conference umpires will represent what will be termed as "successful umpires or successful college baseball umpires".

Potential major college baseball umpires. This term refers to the college baseball umpires who have not been assigned by the Big XII Conference Supervisor of Umpires to work conference series nor any other member NCAA conference Supervisor of Umpires and have expressed interest in becoming a major college baseball umpire.

Personality. This term refers to personality as it relates to Sullivan's theory, the characteristic ways in which an individual deals with other people (Engler, 2006).

Personality styles. The set of scores an individual receives that are plotted in a profile form to see the overall configuration of his or her personality, relative to the appropriate normative group (Costa & McCrae, 1992).

Trait. This term refers to the continuous dimension that an individual can be seen to possess to a certain degree (Engler, 2006).

Umpire. The umpire is the individual who manages and controls the activities a baseball game. This individual is charged with the responsibilities of making decisions and interpretation of playing rules to ensure the game is conducted as prescribed by the rules of the game.

Delimitations

The delimitations of this study are as follows:

1. The subjects are male and adults pursuing careers in college baseball as umpires.

2. The analysis of personality factors and styles were measured by the Revised NEO Personality Inventory (based on the Five-Factor Model of Personality).

Limitations

The limitations of this study are as follows:

1. The Revised NEO Personality Inventory is designed for use with "normal adults" (Costa & McCrae, 1985). There is no attempt made by the investigator to determine, if, indeed, all subjects in this study were "normal".

2. Higher scores on the Revised NEO Personality Inventory may be attributable to the number of years of experience reported by the participating baseball umpires.

3. Variables such as entry skill level to the avocation of umpiring, the age and sex of the umpires, the perceived notion of preferential treatment by Conference Supervisors of Umpires upon the selection of conference umpires were not considered in their possible relationship to the personality structure of the subject baseball umpires.

CHAPTER TWO

Review of Literature

Collegiate supervisors of baseball umpires and college conferences may want to utilize personality assessments to aid in the selection of potential major college umpires which could add an element of objectivity to the process. Historically, there has been limited research available relative to baseball umpires especially college baseball umpires (Russell, 2007). The concepts developed in this chapter are those concerned with (1) a general descriptive analysis of personality and personality theory; (2) review of psychological tests and methods of personality assessment; (3) personality studies in sport and sports officiating; (4) use of personality assessments to select baseball umpires; and (5) review of the Revised Neuroticism Extraversion Openness Personality Inventory (NEO Personality Inventory-Revised).

General Descriptive Analysis of Personality and Personality Theory

The ancient Greeks and Romans attempted to analyze and assess human personality in the characters they created for the ever popular theatre of that day. One of the earliest known creators of character sketches was, Theophrastus, who was a pupil of Aristotle. His character sketches were brief descriptions of a particular type of person that can be recognized across time and place. Stereotypically, the old man character or *senex* is depicted as grumpy, slightly lecherous, and miserly. The cunning servant character was depicted as manipulative, enterprising, deceitful, and clever in twisting plots.

Theophrastus created thirty such sketches based on over-generalized observations of human behavior that he found in the everyday lives of the ancient Greeks (Aiken, 1989).

Modern personality theory is more complex than that of the Greeks, and often difficult to interpret, but still may be based on stereotypes. Generally, personality theory may be defined as being comprised of two basic elements: (a) generalizations about human nature and (b) systematic accounts of individual differences. Yet, basic elements of personality theory are generally included under the broader umbrella of philosophy. Barbara Aiken described theories of personality as conceptions of human behavior and experience that employ a set of psychological constructs in attempting to explain, predict, and control the actions of people. These theories are particularly concerned with the differences and uniqueness of people in both socially acceptable and unacceptable behavior, but the theories account for similarities among the actions and thought processes of people (Aiken, 1989).

Interest in the complexities of personality has a long history, yet the genesis of modern personality theory occurred in the twentieth century. In the early part of the twentieth century, inquiry began into the reasons for and the prediction of human behavior. Among the revered researchers and theoreticians in this arena are Sigmund Freud, Carl Jung, Mortimer Adler, and Erik Erikson. Although the literature is plenteous, both in theory and the interpretation and deconstruction of those theories, the definition of personality continues to remain complex. Researchers have offered a plethora of theories in an attempt to describe the basic dimensions of personality. These authors and researchers found it interesting to investigate ways in which observations about personality could be strongly influenced by the cultural contexts in which they occurred.

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Theoretical attempts to define and describe personality have resulted in more confusion and less clarity for future research (McCrae & John, 1992).

By 1930, personality was placed into context by American psychologists who began to investigate the Authoritarian personality associated with the Axis Powers in Europe during World War I and the emerging conflicts of World War II. Authors and researchers began to observe the influence of cultural context on personality. Again, personality was described as a collection of behavioral traits. Three men, Gordon Allport, Kurt Lewin, and Henry Murray began to write about personality traits as they respond to a particular cultural setting. The richness of review of personality theory by these three men provided insight into the complexity inherent in personality (Graef, Csikszentmihalyi, & Gianinno, 1983; Engler, 2006; Friedman & Schustack, 2003).

Commonly, personality trait is seen as a predisposition to respond in a particular way to persons, objects, or human situations. Personality traits are emotional, motivational, cognitive, and behavior tendencies that constitute underlying dimensions of personality on which individuals vary. The words people use to classify themselves and others in their everyday lives are central to personality trait theory. Roger Mannell and Douglas Kleiber (1997) described personality by the everyday language used to describe it and correlated personality factors with leisure behavior which in part added clarity of personality factors for the lay persons looking into personality theory.

Trait constructs of self and others are created in an effort to understand personality scientifically. Today, studies of modern personality theory have been reduced from the large number of personality characteristics identified in the early twentieth century to five fundamental factors: extroversion, agreeableness, conscientiousness,

neuroticism, and openness. These five factors of personality were labeled the 'Big Five' factors of personality. The emergence and development of the Big Five personality factors is seen as an illuminating movement in personality theory that has had great impact upon current personality research studies (Aiken, 1989; Engler, 2006; Friedman & Schustack, 2003; Raynor & Levine, 2009).

The journal article entitled, *An Introduction to the Five-Factor Model and Its Applications,* summarize the history of the Five-Factor Model and its supporting evidence. The Five-Factor Model, as known as the Big Five, distilled the large number of personality characteristics found at the time into five fundamental factors or domains: extroversion, agreeableness, conscientiousness, neuroticism, and openness. The five factors or domains of personality demonstrate important ways in which individuals differ in their emotional, interpersonal, experiential, attitudinal, and motivational styles. The long history of research into the five-factor model, its cross-cultural replication, and empirical validation across many methods and instruments make the five-factor model a basic discovery of personality psychology (McCrae & John, 1992). Therefore, "core knowledge upon which other findings in personality psychology can be built and tools to assess the five-factor model of personality have been developed to evaluate and measure personality traits in order to validate and predict human behavior" (p. 207).

Review of Psychological Tests and Methods of Personality Assessment

Since bias might exist in one type of tests, most researchers have relied on different methods of assessment to examine factors or traits of personality. Generally ten major types of personality measures are used to investigate human personality within personality assessments: self-report tests, Q-sort tests, ratings and judgment by others,

biological measures, behavioral observations, interviews, expressive behavior, document analysis, projective tests, and demographics and lifestyle measures (Friedman & Schustack, 2003).

The author found four primary inventories of personality which are used today. In order to determine the best fit for this study, those four major inventories were analyzed. The Minnesota Multiphasic Personality Inventory (MMPI) is one of the most frequently used personality tests in the field of mental health. This assessment tool is used by trained professionals to assist in identifying personality structure and psychopathology (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989). The MMPI is designed to be used and interpreted by individuals specifically trained for the psychopathological techniques and analysis of the MMPI, thus is not applicable to this study.

The Sixteen Personality Factor Questionnaire (16PF) is a multiple-choice personality questionnaire which was scientifically developed over several decades of research by Raymond Cattell and colleagues. Beginning in the 1940s, Raymond Cattell used the new techniques of factor analysis (based on the correlation coefficient) in an attempt to try to discover and measure the fundamental traits of human personality. From early in his research, he found that the structure of personality was multi-level or hierarchical, with both primary and secondary level traits. In addition to the sixteen primary personality traits, he also found five higher-level 'second-order' traits of personality now known as the 'Big Five' which have become popularized by other authors in recent years (Cattell, Eber, & Tatsuoka, 1980). The Big Five Factor model was determined to be the most useful for the purpose of examining personality traits in the context of sport officiating. The 16PF was widely used in past decades, yet newer

assessments such as the California Personality Inventory and the Revised Neuroticism Extraversion and Openness Personality Inventory (NEO PI-R) were developed later which have become more widely used in the twentieth-first century by researchers in personality.

Isabel Briggs Myers and her mother; Katherine Cook Briggs developed the Myers-Briggs Type Indicator (MBTI) from Carl Jung's theory of psychological type. Finally it can be concluded from this review of the literature that the MBTI had insufficient evidence to support its tenets and claims about its utility as a predictor of human personality due to the fact that context can change the results (Pittenger, 1993). The conceptualization of personality in terms of types, as in the MBTI, is not viewed with favor by many American psychologists, and users are warned to study extensively MBTI books and computer software to have the necessary skills to administer and properly interpret the MBTI which makes it prohibitive for this study (Aiken, 1989).

The California Psychological Inventory, Third Edition (CPI) is a self-report inventory created by Harrison Gough and currently published by Consulting Psychologists Press. First published in 1956, the CPI was created in a similar manner to the MMPI with which it shares 194 test items. But unlike the MMPI, which focuses on mental health issues, the CPI was created to assess the everyday "folk-concepts" that ordinary people use to describe the behavior of the people around them. The CPI is made up of 434 true-false questions, including 194 items taken from the original version of the MMPI. The test is scored on 18 scales, three of which are validity scales. Eleven of the non-validity scales were selected by comparing responses from various groups of people and four other scales were content validated (Gough & Bradley, 1996). The CPI is widely

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used today by personality researcher, yet the author found the Revised NEO Personality Inventory best suited for the adult population of major college baseball umpires.

The Revised NEO Personality Inventory is supported by a voluminous wealth of evidence that demonstrates the robust nature of the Five-Factor Model which is grounded in the structure of personality (Geisinger, Spies, Carlson, & Plake, 2007). The validity and reliability scores for the Revised NEO Personality Inventory are appropriate for umpire subjects who are adults. The Revised NEO Personality Inventory also will provide interesting comparisons between the normal adult population and the umpire subjects. Barbara Aiken (1989) characterized the Revised NEO Personality Inventory as perhaps "one of the best examples, from a psychometric viewpoint, of personality inventories by combining rational-theoretical and factor-analytic strategies" (p. 224). Personality characteristics and traits of sport officials as well as undergraduate university students were studied by different researchers who used the Revised NEO Personality Inventory as a test instrument (Balch & Scott, 2007; Paunonen & Ashton, 2001). Thus, the author has determined the Revised NEO Personality Inventory as an assessment tool will provide a comprehensive interpretation of scores that was appropriate for this adult population of college baseball umpires.

Personality studies in sport officiating

Investigations of personality characteristics of game officials date back more than three decades. However, in comparison to athletes and coaches, relatively little research has been found for referees and umpires (Burke & Miller, 1990). The context of game rules, the game's equipment and game strategies have changed, causing the management of sport contests to evolve along with the changes. Personality theory has played a

significant role in studies of athletic performance for various team sports and individual sport athletes as well as non-athletes such as coaches (Fratzke, 1975; Garland & Barry, 1990; Gondola & Wughalter, 1991).

 Personality trait research for game officials and the accompanying personality profiles has been investigated for college basketball and football officials (Ittenback & Eller, 1988; Fratzke, 1975). Also, a number of studies have investigated personality trait differences and leadership qualities of high school basketball officials (Purdy & Snyder, 1985; Burke, Joyner, Pim, & Czech, 2000; Scott & Scott, 1996). Additionally, personality trait differences were investigated between probationary and successful high school football officials (Spurgeon, Blair, and Keith, 1978). Spurgeon et al. (1978) found that safe football games are more likely to occur with successful officials who are physically fit, less fat, and psychologically different from probationary officials.

The personality characteristics of volleyball, hockey, and wrestling officials were investigated in two separate but similar studies. Marcie Balch and David Scott (2007) conducted a two-part study in which they found that volleyball, hockey, and wrestling officials reported themselves just like 'regular people', in other words, persons that could be described as normal and that those officials were then found not to possess any outstanding characteristics that would make them especially resilient to verbal abuse and other stress factors hurled at volleyball, hockey, and wrestling officials.

Personality research for basketball, football, hockey, volleyball, and wrestling officials at varying levels of competition has been conducted over the past three decades. The research suggests that veteran officials view themselves differently than athletes and fans view them and game officials are no more resilient to verbal fan abuse which

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provides insight into how game officials view themselves in the context of the contests. The research also suggests that differences exist between more experienced game officials than those with lesser game experience which also provides insight into differences between game officials that possess differing levels of experience. But to this point, there is limited study of personality traits and characteristics specifically for college baseball umpires in the literature.

Use of personality assessments to select baseball umpires

Governing baseball institutions such as the National Collegiate Athletic Association (NCAA) and Major League Baseball (MLB) have significant influence upon the selection of baseball umpires. A national governing body's view of the game official's development typically involves some form of a fitness test and a written test on the rules of the game. A generic fitness test served as a crude measure of a referee's ability to keep up with the play on the field or court, coupled with a pencil and paper test to examine knowledge of the written rules (Mascarenhas, Collins, & Mortimer, 2005). Generally speaking the governing bodies of baseball are increasingly moving to more complex models for selection of umpires to give more objectivity to the process.

Stuart Robertson (1993) provided a profile of umpire students from the Brinkman-Froemming Umpire School and found that successful students were college-educated, single, and display high career aspirations. Robertson reported significant differences between the personality traits found in major league (MLB) umpires and the Brinkman-Froemming Umpire School students not selected as professional umpires.

Historically, Major League Baseball (MLB) has taken a strong stance to resist any change to the game especially the selection of professional umpires. Jerry Dale (1985)

first investigated personality differences of professional umpires. Dale found differences to exist between major league (MLB) umpires and newly selected professional umpires. Jerry Dale suggests that the evaluators and operators for the umpire schools should work in conjunction with a qualified psychologist and then consider using a personality inventory for testing prospective umpires. Furthermore his analysis suggested the use of a personality inventory to supplement and provide assistance during the selection process of qualified individuals for professional baseball would be beneficial (Dale, 1985).

A comprehensive performance appraisal system was developed and published for the evaluation and selection of minor and major league umpires. Phillip Janssen (1996) posited a theory for a comprehensive performance assessment system of professional baseball umpires using improved performance rating forms, a systematic approach to quantify performance using video tape analysis, and a real-time precision measurement system. This study of the interrelationships of the personality development and structure in umpires has led to a Major League Baseball (MLB) model that could used to explain and predict an individual's selection as a professional MLB umpire.

The current selection method of Big XII conference baseball umpires attempts to select competent individuals that possess an effective knowledge of the playing rules, who have mastered the mechanics of baseball officiating on the field, and the appropriate personal qualities and traits to manage each game (R. Fetchiet, personal communication, November 4, 2009). The author suggests the use of a personality assessment during the selection process for Big XII conference umpires may be useful as a predictor of those selected as Big XII conference umpires. The author also suggests that the selection

process for sport officials and especially baseball umpires at all levels of competition has recently undergone progress, yet is rudimentary at best.

Review of the Revised NEO Personality Inventory

The Revised NEO Personality Inventory has been found to be an invaluable tool to assess personality for this study. Adrian Furnham (1996) found a clear overlap between the MBTI and NEO-PI. The NEO Personality Inventory is a more recent personality inventory constructed by a combination of rational and factor-analytic methods (Aiken, 1989). The Revised NEO Personality Inventory is designed for the adult population which will be useful in this study. The Revised NEO Personality Inventory assessments have a self-report (Form S) or observer forms (Form R) scored on a five-point scale for five personality domains---neuroticism, extroversion, openness to experience, agreeableness, and conscientiousness. The Revised NEO Personality Inventory is a 240-item measure of the aforementioned Five-Factor Model. Additionally, the assessment measures six subordinate dimensions (known as 'facets') for each of the Five-Factor Model personality domains. The Revised NEO Personality Inventory was developed by Paul Costa, Jr. and Robert McCrae (1992) for use with adult men and women without overt psychopathology.

Summary

The Five-Factor Model of Personality, also known as the Big Five, is a widely-used model to investigate personality characteristics and traits for a wide variety of individuals. Many assessment tools are found to assess human personality and behavior for research but the four major instruments found were the Sixteen Personality Factor Questionnaire (16PF), Minnesota Multiphasic Personality Inventory (MMPI), California

Psychological Inventory, and the Revised NEO Personality Inventory. These assessments are used extensively in research endeavors related to human personality.

A number of research studies have been conducted investigating the personality styles and the characteristics and traits of athletes and non-athletes. Personality research has been also investigated in many different sports and its athletes and competing at varying levels which reached varying conclusions for the impacts of personality traits and characteristics as it relates to their performance. Collectively it can be determined that precious little research exists on the effect of personality assessments on the selection of college baseball umpires.

For the purposes of this study, the author deemed the Revised NEO Personality Inventory best suited to assess major college umpires and prospective umpires as components of the normal adult population. Therefore, further investigation into the personality styles and traits of major college baseball umpires as they relate to the prediction and selection of potential baseball umpires for a major conference is necessary.

Chapter 3

METHODS

The purpose of this study was to examine whether a cluster of personality characteristics and traits is possessed by Big XII Conference baseball umpires which might inform the selection process of potential major college baseball umpires. This study was comparative; survey research into personality characteristics and traits of two groups of college baseball umpires and then analyzed by discriminate analysis the five domains of personality between the two groups. This chapter explains the procedures and methods used in this study including: participant selection procedures, the selection of the instrument, data collection methods, the description of the study design, and data analysis procedures, and research hypotheses.

Participant Selection Procedures

To obtain a representative and voluntary sample of Big XII Conference baseball umpires, it was necessary to recruit umpires currently active with the Big XII Conference through the Big XII Conference Supervisor of Umpires. The most representative sample of potential major college baseball umpires was obtained through game assignment assignors who are charged with assigning college umpires for mid-week and weekend non-conference games at Big XII Conference member institutions. A demographic survey was given to each selected study participant to glean demographic information of the study participants to provide a view of the composition representative of each sample of college baseball umpires.

The sample of Big XII baseball umpires were contacted through the Big XII Supervisor of Umpires. Prior approval to recruit study participants from the 33, current Big XII Conference umpires was requested from the Supervisor of Umpires who then directed the request to the appropriate Big XII Conference personnel. The Supervisor of Umpires received approval from the appropriate Big XII personnel and the Supervisor of Umpires then provided written confirmation of the approval from the conference to the researcher.

The researcher is a well-known and retired NCAA baseball umpire with more than 25 years of college baseball experience as an umpire. The researcher's reputation as a major college baseball umpire provide sufficient contacts with five game assignment regional assignors of NCAA Division II, NAIA Division I, and junior college conferences in the states of Kansas, Oklahoma, and Texas and the Big XII Conference Supervisor of Umpires. The game assignment regional assignors were contacted to obtain contact information for potential major college umpires to participate as the second sample of umpires. The game assignment regional assignors agreed to provide a pool of potential study participants who have neither previous NCAA Division I nor Big XII Conference experience to serve as the potential major college umpire sample subjects. The both samples of college umpires were recruited by email messages for their participation in the study.

<center>Selection of the Instrument</center>

A valid and reliable assessment tool was sought to provide data on the personality characteristics and traits of the umpires for this study. The assessment tool was required

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to be comprehensive as to glean adequate picture of an umpire's personality characteristics and traits, yet simple enough so as to avert the loss of attention by the study participants. The process of selecting the assessment tool for this study led the researcher to review various assessments of personality. As mentioned in Chapter 2, the Revised NEO Personality Inventory (NEO PI-R), the California Psychological Inventory (CPI), Cattell's Test of Sixteen Personality Factors Questionnaire (16PF), the Minnesota Multiphasic Personality Inventory (MMPI) was all considered for this study.

It was then determined that the Revised NEO Personality Inventory offered a comprehensive assessment tool from an administrative perspective and provided a complete interpretation of scores that was appropriate for this adult population. Another important selection factor was the common use of the Revised NEO Personality Inventory in other studies of personality characteristic and traits by other personality researchers (Paunonen & Ashton, 2001, Balch & Scott, 2007). Lastly, the validity and reliability scores for the Revised NEO Personality Inventory are appropriate for the study populations and provided comparisons between the normal adult population and each group of college umpires. Lewis Aiken (1989) characterized the [Revised NEO Personality Inventory] as perhaps one of the "best examples, from a psychometric viewpoint, of personality inventories by combining rational-theoretical and factor-analytic strategies" (p. 224).

Data Collection

Data collection was conducted through a web-based instrument developed by the researcher with prior approval gained from Psychological Assessment Resources, Incorporated, and the vendor for the Revised NEO Personality Inventory. The Informed

Consent form, a demographic survey and the Revised NEO Personality Inventory was administered in this web-based format. Each participant will be instructed to take the assessment from a PC or laptop with internet access and to allow 45 to 60 minutes to complete the entire exercise. Once the subject accessed the website, each subject was provided with instructions for the Informed Consent Form, the demographic survey and the administration of the Revised NEO Personality Inventory at the website provided at the beginning of the session. Each participant was instructed to carefully review the Informed Consent statement outlining all risks and benefits of participation in the study and provide their assurance of their voluntary acceptance to participate in the study by electronically signing the form prior to participation in the study. Then participants were asked to complete a short demographic survey to ensure their placement in the proper group of subject umpires. Each participant was then provided with instructions to complete the Revised NEO Personality Inventory. The estimated time for the administration of the assessment is approximately 30 - 45 minutes to complete the inventory. The reading level required for this assessment is the 6th grade reading level. Scoring for the Revised NEO Personality Inventory was scored by the NEO Software System purchased from Psychological Assessment Resources, Incorporated. Table 1 below reports the internal consistency values for the Revised NEO Personality Inventory. Thus, the Revised NEO Personality Inventory offers a comprehensive, yet manageable assessment tool that provides an appropriate interpretation of scores that was appropriate for this adult population of college baseball umpires.

Table 1

Internal Consistency and Factor Structure of NEO-PI-R Scales
(Costa and McCrae, 1992)

Domains	Coefficient alpha	
	Form S	Form R
Neuroticism	.92	.93
Extraversion	.89	.90
Openness	.87	.89
Agreeableness	.86	.95
Conscientiousness	.90	.92

The responses of each participant were scored by the NEO Software System, managed and secured by the researcher and College of Education Instructional Technology (COE-IT) personnel at Oklahoma State University. The results of each assessment were maintained on the server provided by COE-IT and the software system will generate a Combined Interpretive Report for each study participant when prompted by the researcher. Only the researcher had access to all participant responses for the sole purpose of analysis for the study.

Research Design and Data Analysis

The data utilized for this study was obtained from the administration of the Revised NEO Personality Inventory for two groups of umpires: (1) potential major college umpires and, (2) current Big XII baseball umpires. Mean scores for each of the dependent variables for each of the two groups were compared to normative data to determine if the umpires are different from the norms for a normal adult population. An *F* test derived from Wilks' Lambda was conducted to test if the discriminate model is significant as a whole. A t-test analysis between the two groups was used to determine their similarities or differences on each of the five domains of personality using a .05 alpha level 9 (see Diagram 1).

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Diagram 1

Comparative Design – *t* Tests

	Neuroticism (N)	**E**xtraversion (E)	**O**penness (O)	**A**greeableness (A)	**C**onscientiousness (C)
Big XII umpires	*n = 25*	*n = 25*	*n = 25*	*n = 25*	*n = 25*
Major college umpires	*n = 50*	*n = 50*	*n = 50*	*n = 50*	*n = 50*

A discriminate function analysis was then used to determine whether each of the five domains and the twelve factors within each domain will yield significant values for the two groups with regard the mean of each variable significant at the .05 alpha level (Shavelson, 1996). A discriminate analysis was conducted to identify correlated personality characteristic and trait categories within both groups of umpires (Klecka, 1980). Secondly, the discriminate analysis investigated any differences between the groups of baseball umpires. Simply said, the discriminate analysis model was built, initially, with all personality variables in the test. Then, at each subsequent step, the variable that contributes least to the prediction of selection was eliminated (Shavelson, 1996). The interpretation of the results of this two-group analysis is straightforward because the variables with the highest *F* values are the variables that most contribute to the prediction of membership in either the Big XII group umpires or in the group of potential major college umpires. Those variables with the lowest *F* values were the variables that least contributed to the prediction of membership.

Research Hypotheses

The following research hypotheses were made and examined during the course of this study.

1. There will be personality characteristics and traits that will discriminate significantly between Big XII Conference baseball umpires and the potential major college baseball umpires as measured by the NEO-FFI.

   a. $H_0: \mu_N^{(XII)} = \mu_N^{(non-XII)}$. Neuroticism scores of Big XII Conference baseball umpires against the potential major college baseball umpires.

   b. $H_0: \mu_E^{(XII)} = \mu_E^{(non-XII)}$. Extroversion scores of Big XII Conference baseball umpires against the potential major college baseball umpires.

   c. $H_0: \mu_O^{(XII)} = \mu_O^{(non-XII)}$ Openness scores of Big XII Conference baseball umpires against the potential major college baseball umpires.

   d. $H_0: \mu_A^{(XII)} = \mu_A^{(non-XII)}$. Agreeableness scores of Big XII Conference baseball umpires against the potential major college baseball umpires.

   e. $H_0: \mu_C^{(XII)} = \mu_C^{(non-XII)}$. Conscientiousness scores of Big XII Conference baseball umpires against the non-Big XII and non-Division I baseball umpires.

2. There is a cluster of personality characteristics and traits that can serve as predictors for future selection of potential major college baseball umpires as Big XII Conference umpires.

Benefits of the Study

The review of literature suggested little previous research into the personality characteristics and traits of potential major college baseball umpires. This research will

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prompt and promote further study into the use of personality inventories as a selection

tool of potential major college baseball umpires. The results of this research can support

the researcher's contention to deconstruct and then subsequently reconstruct the current

selection practices using personality assessment to secure potential major college baseball

umpires.

Chapter 4

RESULTS

The purpose of this study was to examine whether personality characteristics and traits possessed by Big XII conference baseball umpires can inform the selection process of major college baseball umpires. In this study, two groups of college baseball umpires were analyzed to determine if any significant differences of personality characteristics and traits existed between Big XII and potential college baseball umpires.

The results are presented in the subsequent pages. For each of the various statistical tests, the .05 significance level represented the alpha level. The subjects were separated into two separate and independent groups: (a) Big XII umpires (N=21), and (b) potential major college baseball umpires from the states of Kansas, Oklahoma, and Texas (N=40). Big XII umpires were purposefully selected from the pool of 32 staff umpires. The regional game assignors regional who were charged with assigning the umpires for mid-week and weekend non-conference games at Big XII Conference member institutions nominated 236 potential major college umpires for participation in the study. Of the 32 Big XII staff umpires, 21 or 66% elected to participate, and of the 236 potential major college umpires, 39 or 17% opted to participate in the study.

Sample 1. The sample of Big XII Conference baseball umpires was initially contacted through the Big XII Supervisor of Umpires. Prior approval to recruit study participants from the 32, current Big XII Conference umpires was requested from the Supervisor of Umpires who then directed the request to the appropriate Big XII

Conference personnel. The Supervisor of Umpires received approval from the appropriate Big XII personnel and the Supervisor of Umpires then provided written confirmation of the approval from the Conference to the researcher.

Sample 2. Potential major college baseball umpires were selected with the assistance of regional game assignors who are responsible to assign umpires for all non-conference games at Big XII member institutions. The regional game assignors agreed to provide a pool of potential study participants who have neither previous NCAA Division I nor Big XII Conference experience to serve as the potential major college umpire sample subjects. Both samples of college umpires were recruited by email messages and by postal mail for their participation in the study. Descriptive statistics derived from the study are listed in the following table.

Table 2.

Descriptive Statistics

Variable	Big XII (N=21)	Potential Umpires (N=39)	Total Group (N=60)
Age - Range	34 – 58 years	23 – 60 years	23 – 60 years
Gender	100% male	100% male	100% male
Mean - Years of Experience	19.10	11.26	13.86
High School Diploma	9.5%	17.9%	14%
Bachelor Degree	47.6%	48.7%	49.2%
Masters Degree	38.1%	25.6%	29.5%
Terminal or Doctors Degree	4.8%	2.6%	3.3%
Race or Ethnicity:			
African American	4.8%	0%	3.3%
Hispanic	0%	5.1%	3.3%
Native American	0%	2.6%	1.6%
White	95.2%	89.7%	91.8%

The means and standard deviations of the five traits of personality were calculated for both groups of college baseball umpires separately and as the Total Group. The summary data are shown in Table 3.

Costa & McCrae (1992) provided a system for more fine-tuned distinctions than simple dichotomies for the interpretation of scores within the NEO PI-R that can be

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found as Appendix A. These scores are typically defined for adult populations using the displayed *t* scores for all individuals administered the NEO PI-R, "approximately 38% score in the Average range (*t* = 45 to 55), 24% score in the High range (*t* = 56 to 65) and in the Low range (*t* = 35 to 45), and 7% score in the Very High range (*t* = 65 and higher) and in the Very Low range (*t* = 34 and lower)" (1992, p. 13). Costa and McCrae also clarified that no single point separates those who "have" a trait from those who do not, and being Low or Average on a scale can be as a informative as being High. The following table displays the mean and standard deviations scores of the five personality traits for the study.

Table 3.

Means and Standard Deviation Scores for the Five Traits (Domains) of Personality

Variable	Big XII (N=21)	Potential Umpires (N=39)	Total Group (N=60)
Neuroticism (N)	46.52 ± 9.34	47.64 ± 7.09	47.08 ± 7.93
Extraversion (E)	55.10 ± 8.82	56.95 ± 7.70	56.44 ± 8.09
Openness (O)	42.38 ± 7.73	45.67 ± 9.36	44.44 ± 8.40
Agreeableness (A)	45.48 ± 11.40	41.79 ± 9.76	42.90 ± 10.42
Conscientiousness (C)	56.48 ± 12.11	53.21 ± 10.61	54.20 ± 11.14

As compared to the NEO PI-R normative data found in Appendix A, the Big XII group trait means found to be Average were Neuroticism (N) and Agreeableness (A). The potential major college group means considered to be Average were Neuroticism (N), Openness (O), and Conscientiousness (C). The Big XII umpire group means and potential major college group means were found to be High for Extraversion (E). Low mean scores were found for the potential major college group for Agreeableness (A) and Openness

(O) for the Big XII group. The following table displays the personality characteristics

investigated for this study.

Table 4.

Means and Standard Deviation Scores for the Thirty Characteristics (Facets) of Personality

Variable	Big XII (N=21)	Potential Umpires (N=39)	Total Group (N=60)
Anxiety (N1)	44.76 ± 9.76	46.44 ± 8.59	45.80 ± 8.91
Angry Hostility (N2)	51.10 ± 10.36	51.10 ± 9.62	50.89 ± 9.86
Depression (N3)	47.52 ± 10.54	49.03 ± 7.35	48.48 ± 8.48
Self-Consciousness (N4)	45.43 ± 8.33	46.41 ± 8.48	45.92 ± 8.38
Impulsiveness (N5)	49.52 ± 11.05	48.38 ± 8.75	48.90 ± 9.51
Vulnerability (N6)	43.29 ± 10.50	45.18 ± 6.09	44.56 ± 7.82
Warmth (E1)	50.95 ± 12.08	51.03 ± 7.30	51.02 ± 9.08
Gregariousness (E2)	50.48 ± 10.39	56.18 ± 6.86	54.18 ± 8.56
Assertiveness (E3)	59.76 ± 10.11	60.28 ± 8.01	60.16 ± 8.67
Activity (E4)	56.81 ± 11.29	57.13 ± 7.33	57.16 ± 8.83
Excitement-Seeking (E5)	53.14 ± 7.17	56.33 ± 8.44	55.30 ± 8.06
Positive Emotions (E6)	52.956 ± 9.00	53.56 ± 7.92	53.46 ± 8.22
Fantasy (O1)	43.76 ± 8.78	50.44 ± 10.13	48.07 ± 10.05
Aesthetics (O2)	46.00 ± 9.62	45.48 ± 9.71	45.48 ± 9.71
Feelings (O3)	50.85 ± 10.30	51.31 ± 10.43	51.31 ± 10.43
Actions (O4)	44.69 ± 9.30	43.16 ± 8.87	43.16 ± 8.87
Ideas (O5)	48.00 ± 10.06	47.20 ± 10.13	47.20 ± 10.13
Values (O6)	46.03 ± 6.41	45.30 ± 7.84	45.30 ± 7.84
Trust (A1)	48.74 ± 7.68	49.25 ± 8.11	49.25 ± 8.11
Straightforwardness (A2)	45.85 ± 9.24	47.31 ± 9.38	47.31 ± 9.38
Altruism (A3)	48.15 ± 7.30	48.48 ± 8.95	48.48 ± 8.95
Compliance (A4)	41.51 ± 9.73	42.92 ± 10.62	42.92 ± 10.62
Modesty (A5)	46.59 ± 10.98	48.51 ± 11.44	48.51 ± 11.44
Tender-Mindedness (A6)	48.21 ± 8.19	48.33 ± 8.71	48.33 ± 8.71
Competence (C1)	54.51 ± 7.72	55.20 ± 8.60	55.20 ± 8.60
Order (C2)	50.77 ± 9.86	50.51 ± 10.65	50.51 ± 10.65
Dutifulness (C3)	49.72 ± 8.45	50.28 ± 10.54	50.28 ± 10.54
Achievement Striving (C4)	58.41 ± 9.58	58.7 ± 8.99	58.7 ± 8.99
Self-Discipline (C5)	50.31 ± 9.94	50.46 ± 10.28	50.46 ± 10.28
Deliberation (C6)	50.54 ± 10.40	51.10 ± 10.14	51.10 ± 10.14

As compared to the NEO PI-R normative data found in Appendix A, Average means for the 30 characteristics or facet scales were found to dominate for both groups. Low means found were Anxiety (N1), Vulnerability (N6), Fantasy (O1), Actions (O4), and Compliance (A4) for the Big XII group; and for the potential major college group, Actions (O4), and Compliance (A4) were found in the Low range. High means for the Big XII group were discovered for Assertiveness (E3), Activity (E4), and Excitement-Seeking (E5). The High means discovered were Activity (E4), Excitement-Seeking (E5), and Positive Emotions (E6) for the potential major college group.

t-Test Analysis

The *t*-test analysis revealed three characteristics (facets) as significantly different between the two groups. Table 5 illustrates the findings of the t-test analysis of Gregariousness (E2), Fantasy (O1), and Modesty (A5) for both groups. Therefore, while both groups are similar, subtle differences exist along with a number of "near misses" which suggest that future studies with additional NCAA Division I conferences and the accompanying staff umpires may yield significant *t*-test analyses. Those near misses characteristic scores were Excitement-Seeking ($t = .147$), Action ($t = .075$), and Straightforwardness ($t = .068$).

Table 5.

t-Test Analysis Findings

Variable	Big XII group mean	Potential major College group mean	*t*-value	Probability ($p \leq 0.5$)
Gregariousness (E2)	50.48	56.18	-2.553	.013
Fantasy (O1)	43.76	50.44	-2.545	.014
Modesty (A5)	53.10	46.59	2.218	.031

Discriminate Function Analysis

Two discriminate function analyses were performed upon both groups: (1) the five traits (domains), and (2) the 30 characteristics (facets). Each discriminate function analysis suggested no significant differences between the five traits (domains) between both groups. The summary of the canonical discriminate functions was: Wilks' Lambda was .886, *df* – 5, with significance - .244, (p ≤ 0.5). Likewise, no significant difference existed between both groups by discriminate function analysis of the 30 characteristics (traits). The summary of canonical discriminate functions was: Wilks' Lambda was .886, *df* – 5, with significance - .244, (p ≤ 0.5).

Discussion

Descriptive statistics revealed that the Big XII group and the potential major college group were largely similar and typical as compared to the typical, adult population as described by Appendix B – Means and Standard Deviations for the NEO PI-R. The descriptive statistical analysis revealed that the Big XII group members tend to be higher academic achievers due to a higher level of education by degree attained and reported a higher number of years of game experience than the potential major college group. In essence, the Big XII group members are more educated and experienced. The findings of the discriminate function analysis indicated no significant differences between the two groups for the five traits (domains) and characteristics (facets) of personality.

Appendix A illustrates the interpretive and operational descriptions for the traits (domains) and characteristics (facets) as illustrated by the NEO PI-R Manual to define each sample group. Both groups were found to like large gatherings of people, active, and talkative who tend to like excitement and stimulation. Costa and McCrae (1992) reminds us that individuals who have High scores in extraversion also tend to be upbeat,

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energetic, and optimistic. The researcher also sought to analyze each group independently. The Big XII group members were found to be extraverted, fundamentally altruistic persons, eager to be helpful to others, with normal levels of emotional stability.

These characteristics (facets) may be related to the educational and/or game experience. The Big XII group showed tendencies to be less anxious and yet fearless, less vulnerable to stress, less likely to have a vivid imagination, less likely to try new places or things, and have a tendency to be more likely to be aggressive and to compete rather than cooperate. The Big XII group also showed a tendency to exhibit a purposeful, strong-willed, and determined approach to their lives. Costa and McCrae cited that conscientiousness was once called "character" (1992, p. 16) for which individuals with High scores in conscientiousness are punctual and reliable. Costa and McCrae (1992) cite some evidence these individuals are more hedonistic and interested in sex.

Likewise, the potential major college group members also demonstrated to be extraverted persons, yet they are less agreeable, and more prone to prefer the familiar than to the novel when compared to the normal adult population. Perhaps these characteristics (facets) of personality may again be related to educational level and game experience, or the lack thereof. The potential major college group also showed tendencies to be less likely to try new places or things and a tendency to be more likely to be aggressive and to compete rather than cooperate, not unlike their Big XII counterparts. Costa and McCrae also reminds us that these tendencies are neither intrinsically superior nor inferior "from society's point of view" (1992, p. 15). The combination of these tendencies simply provide some insight of this sample of umpires who may aspire to

become staff umpires for the many NCAA Division I supervisors that may be searching for replacements.

Table 4 illustrates a few characteristics (facets) that had statistically significant differences between the two groups. The potential major college group members tend to prefer other people's company and the accompanying social stimulation more than the Big XII group which exhibited an average level of gregariousness. Yet, the Big XII group exhibited a more normal level of fantasy while the potential major college group tends to prefer to keep their minds on the task at hand that can be described as more prosaic. Both groups scored at an average level on the Modesty scale, yet the potential major college group exhibited more of a preference to believe that they are superior people and may be considered more conceited or arrogant than the norm. In short, the potential major college group members tend to be more social and gregarious than the more seasoned Big XII group. Perhaps this difference also could be related to game experience and educational level.

In fact, the Big XII group members exhibited typical levels of fantasy whereas the potential major college group members appear to prefer keeping their minds on task without much allowance for fantasy which may indicate game experience and/or educational attainment might mitigate the freedom for fantasy in the potential major college group. Perhaps game experience and/or educational attainment permit the more seasoned Big XII group members to allow their mind to diverge from the task and see the "big picture" occurring during a game, although there is no indication that this is anything but a typical attribute for an umpire. If the potential major college group members may be seen as more arrogant or conceited than the Big XII group, again this

might be correlated with their lack of game experience and education previously cited for the potential major college group.

Nonetheless, the fact that both groups in this study were virtually the same, it is difficult to inform the selection process of future umpires for the major college conference supervisors. Even though the descriptive analyses illuminates that the Big XII were higher academic achievers and reported more game experience than the potential major college group, this may beg the psychological question, is this nature or nurture? Or, does game experience and educational level contribute to their personality traits and characteristics, or do umpires possess the personality traits and characteristics of an elite umpire at birth?

Chapter Five

SUMMARY, RECOMMENDATIONS, and CONCLUSIONS

Summary

The previous chapters have reviewed, proposed, and explored the personality characteristics and traits of two groups of college baseball umpires, the Big XII conference staff umpires and a group of potential major college baseball umpires. This study is to be viewed solely as an exploratory piece of research. The following section summarizes findings, proposed conclusions, and makes recommendations for future studies into the personality characteristics and traits of college baseball umpires. The significance of this study is to provide future researchers with an impetus to further investigate the possibility of a cluster of traits and characteristics that are exclusive to major college baseball umpires using personality inventories validated by the social sciences. The exploratory nature of the project should not decrease its influence on future research, but accentuate the need to better objectify the selection process of future conference college baseball umpires that exists currently in the field.

Assessment of the study hypotheses was conducted by an extensive review of the literature and a web-based questionnaire delivered by the NEO PI-R S Form for adults. The first hypothesis investigated in this study was: there will be statistical similarities between two groups of college baseball umpires of the five factors of personality scores as measured by the Revised NEO Personality Inventory: (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience). The second hypothesis

investigated was: there will be statistical similarities between two groups of college baseball umpires of the specific six independent facets scores of each factor of personality as measured by the Revised NEO Personality Inventory. The results of the descriptive analyses confirmed these two hypotheses and revealed broad similarities between the two groups of umpires. The final hypothesis investigated was: there are personality styles that will statistically discriminate across the two groups of college baseball umpires as measured by the Revised NEO Personality Inventory. The resulting findings of the discriminate function analysis indicated no significant differences between the two groups for the five traits (domains) or the characteristics (facets) of personality. The following is a brief summary of the findings as cited in the previous chapter.

Descriptive statistics revealed that the Big XII group and the potential major college group were largely similar and typical as compared to the typical, adult population as described by Appendix B – Means and Standard Deviations for the NEO PI-R. The descriptive statistical analysis revealed that Big XII group members tend to include higher academic achievers due to a higher level of education by degree attained which also reported a higher number of years of experience than the potential major college group.

<div align="center">Recommendations</div>

Further, the Big XII group revealed a few, yet statistically significant differences of personality characteristics when compared with the potential major college group. A number of statistical "near misses" also were found in the analyses that may be attributed to the small number of Big XII participants (N=21) and future investigation with the addition of more NCAA Division I conferences (a larger N) may illuminate additional

significant differences between the traits (domains) and characteristics (facets) as measured by the NEO PI-R assessment. Further investigation is necessary to answer the questions raised from this study and to determine if a larger number of NCAA Division staff umpire participants (a larger *N*) will reveal a larger cluster of statistically significant traits or characteristics that may inform the selection process of major college staff umpires. The evidence of the combination or specific to the sample of potential major college umpires provide impetus for further research with additional participants for the possibility of a more defined cluster of characteristics that can inform the selection process of major college staff umpires.

Conclusions

In conclusion, the findings of this study were exploratory into the use of personality assessments to inform the selection process by NCAA Division I supervisors of umpires. The similarities of both study groups have led this researcher to pursue this model of inquiry in the future. Further study of a larger number of participant staff umpires from NCAA Division I conferences can build upon the small combination of personality characteristics (facets) that will cluster together to create a personality profile of prospective staff umpires. The job of selecting staff umpires for the elite NCAA conferences is difficult and subjective at best. The goal to objectify the selection process for umpires can be well served by more investigation that may reveal a profile of personality unique to highest level of college baseball that can be measured and then serve as an additional measure of the fitness of a prospective umpire to be employed by the elite college conferences.

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APPENDIX A

CONCEPTUALIZATION AND INTERPRETATION

IN THE NEO PI-R

Appendix A

Costa, P.T. & McCrae. R.R. (1992). Conceptualization and Interpretation. In NEO PI-R. *Professional Manual* (pp. 13-29.

In order to interpret NEO PI-R results, the professional must be familiar with the basics of psychological testing, know what the scales measure, and the implications for the psychological functioning of the individual, and be able to integrate the scale score information into a meaningful profile. This chapter provides the basic information on the constructs the NEO PI-R measures and suggests guidelines for interpreting profiles.

Professional may benefit from reading the computer-generated interpretive reports; some examples of case studies are provided later in this chapter. In addition, we recommend an interactive approach to learning the finer points of interpretation, in which the literature is read in conjunction with the actual profiles the professional needs to interpret. For example, the concept of Openness to Experience is treated extensively in two chapters (McCrae & Costa, 1985a in press-a). It may be most useful to read these chapters when dealing with an extremely high or low scorer on the dimension of Openness. In this way, the respondent can illustrate the literature, and the literature can illuminate the case.

The Meaning of Scale Scores

The scales of the NEO PI-R and the NEO-FFI measure traits that approximate normal, bell-shaped distributions. Most individuals will score near the average for the scale, with a small percentage at either end. It is necessary to keep this distribution of scores in mind when interpreting the meaning of any individual's scores.

Scales are most conveniently explained by describing characteristics of extremely high or extremely low scores. Few individuals will obtain these scores or show all the characteristics described, however. Instead, individual scores will usually represent degrees of the personality trait, and more extreme scores mean a higher probability of showing the distinctive features.

Characteristics are compared across people, rather than with the individual. Thus, a person who scores in the 75th percentile on Depression and the 25th

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percentile of Positive Emotions is more likely to feel depressed and less likely to feel happy than most other people. But because happiness is much more common than depression, such an individual is still likely to be happy more often than depressed.

Professionals using the NEO PI-R should avoid thinking in terms of either types or categories when interpreting scores. Although it is convenient to speak of "introverts" or "extraverts," the NEO PI-R scale represents a continuous dimension, and most individuals would be best described as "ambiverts," that is, showing a combination of introverted and extraverted tendencies. The same principle applies to all other domain and facet scales.

In designing the profile forms and interpretive reports for the NEO PI-R, we have found it useful to summarize results in terms of five levels: very low, low, average, high, and very high (just as test takers are asked to respond along a five-point scale from *strongly disagree* to *strongly agree*). Although the percentages vary somewhat with the shape of the distributions, of all individuals administered the NEO PI-R, approximately 38% score in the average range (T = 45 to 55), 24% score in the high range (T = 56 to 65) and in the low range (T = 35 to 45), and 7% score in the very high range (T = 65 and higher) and in the very low range (T = 34 and lower). This system allows for more fine-grained distinctions than simple dichotomies, but it is not needlessly complex.

Inventories like the Minnesota Multiphasic Personality Inventory (Hathaway & McKinley, 1983) are often interpreted in terms of diagnostic categories. If a scale exceeds a T score of 70, for example, it may be regarded as an indication of psychopathology, given little attention. In conceptualizing the personality traits measured by the NEO PI-R, a different approach should be used. No single cutoff point separates those who "have" a trait from those who do not, and being low or average on a scale can be as a informative as being high.

For many applications, decision rules employing cutoff points are needed, and it is certainly possible empirically to establish useful cutoffs on or more NEO PI-R scales. Generally, however, the rules generated will be valid only for the special purpose for which they were intended and should not replace the dimensional interpretation of the scales.

Choice of Comparison Group

Raw scores on personality inventories are usually meaningless----responses take on meaning only when they are compared to the responses of others. Published norms are intended to serve as the standard reference group, but the choice of appropriate norms requires some consideration by the professional. Traditionally, separate norms have been used for men and women, so that a *T* score of 50 means average *for a man* and *for a woman*. For some applications, the user would want to compare the individual to people in general. For this reason, combined-sex normative information is provided in Appendixes B through E, from which *T*-scores can be calculated.

Similarly, it would be possible to plot college-aged individuals on the adult norms to see how they compare to adults in general. Many college students would score quite high on Excitement-Seeking, but this is meaningful, because college students are typically higher than adults in general in seeking stimulation. When interpreting the scores of an individual aged 21 to 30, standard instructions now suggest that Adult Norms profile forms be used. However, because these young adults tend to be intermediate in scores between adolescents and older adults, it may sometimes be appropriate to use the College-Age Norms profile forms instead. Either choice is appropriate, so long as the professional understands that when the Adult Norms profile form is being used, the individual is being described *in comparison with the average adult*; when the College-Aged Norm profile is used, the individual is being described *in comparison with the average man or woman aged 17 to 20* (cf. Widiger, in press).

The Five-Factor Model of Personality

The NEO PI-R was developed to operationalize the five-factor model of personality, a representation of the structure of traits which was developed and elaborated over the past four decades (Digman, 1990). The five factors represent the most basic dimensions underlying the traits identified in both natural languages and psychological questionnaires.

One major line of research---the lexical tradition (John, Angleitner, & Ostendorf, 1988)—began with an analysis of trait adjectives found in English and other natural languages. Words like *nervous*, *original*, *accommodating*, and *careful* evolved over the course of centuries to allow individuals describe

themselves and others. Thousands of such words are found in the dictionary, and trait theorists like Cattell (1946) and Norman (1963) propose that this list of terms could be considered an exhaustive enumeration of personality traits. By factor analyzing ratings on all these adjectives, they argued, one should uncover the structure of personality traits themselves. Through a series of studies, this research led to the identification of five factors (John, 1990).

Although derived from an analysis of lay terms, these factors were familiar to personality psychologists who had studied similar traits. Since 1985, research using the NEO PI-R has demonstrated that the same five factors can account for the major dimensions in personality questionnaires designed to measure Jungian functions, Murray's need, the traits of the Interpersonal Circumplex, and the DSM-III-R personality disorders (McCrae & Costa, 1990). It appears that these factors are indeed comprehensive.

Factors are defined by groups of intercorrelated traits. We refer to these more specific traits as *facets*, and each cluster of facets as *domain*. Summing the facet scales yields the domain score, which can be thought of as an approximation to the factor score. Factor scores are calculated directly by the computer scoring systems.

By describing the individual's standing on each of the five factors, we can provide a comprehensive sketch that summarizes his or her emotional, interpersonal, experiential, attitudinal, and motivational styles. NEO PI-R domain scales and factors measure personality at this level; facet scales offer a more fine-grained analysis by measuring specific traits within each of five domains.

The Five Domains

The first step in interpreting a NEO PI-R profile is to examine the five domain scales to understand personality at the broadest level. This section describes each of the domains or factors and presents basic definitions as well as crucial distinctions.

Neuroticism (N)
The most pervasive domain of personality scales contrasts adjustment or emotional stability with maladjustment or neuroticism. Although clinicians distinguish among many different kinds of emotional distress, from social

phobia to agitated depression to borderline hostility, innumerable studies have shown that individuals prone to any one of these emotional states are also likely to experience others (Costa & McCrae, 1992). The general tendency to experience negative affects such as fear, sadness, embarrassment, anger, guilt, and disgust is the core for the N domain. However, N includes more than susceptibility to psychological distress. Perhaps because disruptive emotions interfere with adaptation, men and women high in N are also prone to have irrational ideas, to be less able to control their impulses, and to cope more poorly than others with stress.

As the name suggests, patients traditionally diagnosed as suffering from neuroses generally score higher on measures of N (e.g., Eysenck & Eysenck, 1964). But the N scale of the NEO PI-R, like all its other scales, measures a dimension of normal personality. High scorers may be risk for some kinds of psychiatric problems, but the N scale should not be viewed as a measure of psychopathology. It is possible to obtain a high score on the N scale without having any diagnosable psychiatric disorder. Conversely, not all psychiatric categories imply high levels of N. For example, an individual may have Antisocial Personality Disorder without having an elevated N score.

Individuals who score how on Neuroticism are emotionally stable. They are usually calm, even-tempered, and relaxed, and they are able to face stressful situations without becoming upset or rattled.

Extraversion (E)

Extraverts are, of course, sociable, but sociability is only one of the traits that comprise the domain of Extraversion. In addition to liking people and preferring large groups and gathering, extraverts are also assertive, active, and talkative. They like excitement and stimulation and tend to be cheerful in disposition. They are upbeat, energetic, and optimistic. Salespeople represent the prototypic extraverts in our culture, and the E domain scale is strongly correlated with interest in enterprising occupations (Costa, McCrae, & Holland, 1984).

While it is easy to convey the characteristics of the extravert, the introvert is less easy to portray. In some respects, introversion should be seen as the absence of extraversion rather than what might be assumed to be its opposite. Thus, introverts are reserved rather than unfriendly, independent rather than followers, even-paced rather than sluggish. Introverts may say

they are shy when they mean that they prefer to be alone: they do not necessarily suffer from social anxiety. Finally, although they are not given to the exuberant high spirits of extraverts, introverts are not unhappy or pessimistic. Curious as some of these distinctions may seem, they are strongly supported by research on the five-factor model (Costa & McCrae, 1980a; McCrae & Costa, 1987). Breaking the mental sets that link such pairs as "happy—unhappy," "friendly—hostile," and "outgoing—shy" allows important new insights into personality.

Users familiar with Jungian psychology should note that the conceptualization of Extraversion embodied in the NEO PI-R differs in many respects from Jung's (1923) theory. In particular, introspection or reflection is not related to either pole of E, being instead a characteristic of individuals who are high on Openness to Experience. Further discussion of these points is provided in McCrae and Costa (1989a).

Openness (O)

As a major dimension of personality, Openness to Experience is much less well known than N or E. The elements of O—active imagination, aesthetic sensitivity, attentiveness to inner feelings, preference for variety, intellectual curiosity, and independence of judgment—have often played a role in theories and measures of personality, but their coherence into a single broad domain has seldom been recognized. The NEO PI-R Openness scale is perhaps the most widely researched measure of this broad domain (McCrae & Costa, 1985a, in press-a).

Open individuals are curious about inner and outer worlds, and their lives are experientially richer. They are willing to entertain novel ideas and unconventional values, and they experience both positive and negative emotions more keenly than do closed individuals.

Alternative formulations of the five-factor model often label this factor *Intellect*, and O scores are modestly associated with both education and measured intelligence. Openness is especially related to aspects of intelligence, such as divergent thinking, that contribute to creativity (McCrae, 1987). But Openness is by no means equivalent to intelligence. Some very intelligent people are closed to experience, and some very open people are quite limited in intellectual capacity. In a factor analytic sense, measures of

cognitive ability form a sixth, independent factor that we regards as being outside the domain of personality proper.

Men and women who score low on O tend to be conventional in behavior and conservative in outlook. They prefer the familiar to the novel, and their emotional responses are somewhat muted. Although openness or closedness may influence the form of psychological defense used (McCrae & Costa, in press-a), there is no evidence that closedness itself is a generalized defensive reaction. Instead, it seems likely that closed people simply have a narrower scope and intensity of interests. Similarly, although they tend to be socially and politically conservative, closed people should not be viewed as authoritarians. Closedness does not imply hostile intolerance or authoritarian aggression. Closedness does not imply hostile intolerance or authoritarian aggression. These qualities are more likely to be signs of extremely low Agreeableness.

A related distinction must be made at the open pole. Open individuals are unconventional, willing to question authority, and prepared to entertain new ethical, social, and political ideas. These tendencies, however, do not mean that they are unprincipled. An open person may apply his or her evolving value system as conscientiously as a traditionalist does. Openness may sound healthier or more mature to many psychologists, but the value of openness or closedness depends on the requirements of the situation, and both open and closed individuals perform useful functions in society.

Agreeableness (A)

Like Extraversion, Agreeableness is primarily a dimension of interpersonal tendencies. The agreeable person is fundamentally altruistic. He or she is sympathetic to others and eager to help them, and believes that others will be equally helpful in return. By contrast, the disagreeable or antagonistic person is egocentric, skeptical of others' intentions, and competitive rather than cooperative.

It is tempting to see the agreeable side of this domain as both socially preferable and psychologically healthier, and it is certainly the case that agreeable people are more popular than antagonistic individuals. However, the readiness to fight for one's own interests is often advantageous, and agreeableness is not a virtue on the battlefield or in the courtroom. Skeptical and critical thinking contributes to accurate analysis in the sciences.

Just as neither pole of this dimension is intrinsically better from society's point of view, so neither is necessarily better in terms of individual's mental health. Horney (1945) discussed two neurotic tendencies—moving against people and moving toward people—that resemble pathological forms of agreeableness and antagonism. Low A is associated with Narcissistic, Antisocial, and Paranoid Personality Disorders, whereas high A is associated with the Dependent Personality Disorder (Costa & McCrae, 1990).

Conscientiousness (C)

A great deal of personality theory, particularly psychodynamic theory, concerns the control of impulses. During the course of development most individuals learn how to manage their desires, and the inability to resist impulses and temptations is generally a sign of high N among adults. But self-control can also refer to a more active process of planning, organizing, and carrying out tasks; and individual differences in this tendency are the basis of Conscientiousness.

The conscientious individual is purposeful, strong-willed, and determined, and probably few people become great musicians or athletes without a reasonably high level of this trait. Digman and Takemoto-Chick (1981) refer to this domain as *Will to Achieve*. On the positive side, high C is associated with academic and occupational achievement, on the negative side, it may lead to annoying fastidiousness, compulsive neatness, or workaholic behavior.

Conscientiousness is an aspect of what was once called *character*; high C scorers are scrupulous, punctual, and reliable. Low scorers are not necessarily lacking in moral principles, but they are less exacting in applying them, just as they are more lackadaisical in working toward their goals. There is some evidence that they are more hedonistic and interested in sex (McCrae, Costa & Busch, 1986).

The Facet Scales

Each of the five domains of the NEO PI-R is represented by six, more specific scales that measure facets of the domain. There are several advantages to the strategy of assessing a variety of facets. First, it ensures that the items used to measure the domain will cover as wide a range of relevant thoughts, feelings, and actions as possible. The N scale, for example, must include

items measuring hostility, depression, self-consciousness, impulsiveness, and vulnerability to stress as well as anxiety. Domain scores are thus designed to reflect the broadest possible dimensions of personality.

Secondly, having several independent facet scales permits internal replication of findings. For example, *each* of the six facets of N is significantly related to negative affect and lower life satisfaction (Costa & McCrae, 1984), which gives considerable confidence that N is indeed related to psychological well-being. Similarly, the clinician who sees that a patient is high in anxiety, hostility, and self-consciousness as well as depression can be confident that he or she has pervasive psychological distress.

A third, and crucial, advantage to the multifaceted approach to the measurement of the five factors arises from the fact that meaningful individual differences can be seen *within* domains. Openness to fantasy, aesthetics, feelings, actions, ideas, and values covary to form the domain of Openness, and individuals high on one facet are likely to be high in others. But this is only a statement of probability. Some individuals, for example, are open to new ideas but not values, or are open to feelings but not aesthetics. These individual differences within domains are stable over time and confirmed by observer ratings (McCrae & Costa, 1990, in press-b), so they must be regarded as real facts of personality and not merely random scatter.

Examination of facet scales can provide a more fine-grained analysis of persons or groups. This can be particularly illuminating when the overall domain score is in the average range. For example, an individual whose average A score includes very low Altruism but very high Compliance will react quite differently from an individual with an equal A score with a pattern of high Altruism and low Compliance.

Finally, the detailed information available from consideration of facet scores can be useful in interpreting constructs and formulating theories. Extraversion is known to be related to psychological well-being (Costa & McCrae, 1984), but a closer look shows that two of the facets, Warmth and Positive Emotions, are chiefly responsible for this association; Excitement-Seeking is not related to well-being. Such findings have important implications for a theory of well-being.

Neuroticism Facets

N1: Anxiety. Anxious individuals are apprehensive, fearful, prone to worry, nervous, tense, and jittery. The scale does not measure specific fears or phobias, but high scorers are more likely to have such fears, as well as free-floating anxiety. Low scorers are calm and relaxed. They do not dwell on things that might go wrong.

N2: Angry Hostility. Angry hostility represents the tendency to experience anger and related states such as frustration and bitterness. This scale measures the individual's readiness to *experience* anger; whether the anger is *expressed* depends upon the individual's level of Agreeableness. Note, however, that disagreeable people often score high on this scale. Low scorers are easygoing and slow to anger.

Ne: Depression. This scale measures normal individual differences in the tendency to experience depressive affect. High scorers are prone to feelings of guilt, sadness, hopelessness, and loneliness. They are easily discouraged and often dejected. Low scorers rarely experience such emotions, but they are not necessarily cheerful and lighthearted—characteristics associated instead with Extraversion.

N4: Self-Consciousness. The emotions shame and embarrassment form the core of this facet of N. Self-conscious individuals are uncomfortable around others, sensitive to ridicule, and prone to feelings of inferiority. Self-consciousness is akin to shyness and social anxiety—to Fenigstein, Scheier, and Buss's (1975) public (but not private) self-consciousness. Low scorers do not necessarily have poise or good social skills; they are simply less disturbed by awkward social situations.

N5: Impulsiveness. In the NEO PI-R, impulsiveness refers to the inability to control cravings and urges. Desires (e.g., for food, cigarettes, possessions) are perceived as being so strong that the individual cannot resist them, although he or she may later regret the behavior. Low scorers find it easier to resist such temptations, having a high tolerance for frustration. The term *impulsive* is used by many theorists to refer to many different traits. NEO PI-R impulsiveness should not be confused with spontaneity, risk-taking, or rapid decision time.

N6: Vulnerability. The final facet of N is vulnerability to stress. Individuals who score high on this scale feel unable to cope with stress, becoming

dependent, hopeless, or panicked when facing emergency situations. Low scorers perceive themselves as capable of handling themselves in difficult situations.

Extraversion Facets

E1: Warmth. Warmth is the facet of Extraversion most relevant to issues of interpersonal intimacy. Warm people are affectionate and friendly. They genuinely like people and easily form close attachments to others. Low scorers are neither hostile nor necessarily lacking in compassion, but they are more formal, reserved, and distant in manner than high scorers. Warmth is the facet of E that is closest to Agreeableness in interpersonal space, but it is distinguished by a cordiality and heartiness that is not part of A.

E2: Gregariousness. A second aspect of E is gregariousness—the preference for other people's company. Gregarious people enjoy the company of others, and the more the merrier. Low scorers on this scale tend to be loners who do not seek—or who even actively avoid—social stimulation.

E3: Assertiveness. High scorers on this scale are dominant, forceful, and socially ascendant. They speak without hesitation and often become group leaders. Low scorers prefer to keep in the background and let others do the talking.

E4: Activity. A high Activity score is seen in rapid tempo and vigorous movement, in a sense of energy, and in a need to keep busy. Active people lead fast-paced lives. Low scorers are more leisurely and relaxed in tempo, although they are not necessarily sluggish or lazy.

E5: Excitement-Seeking. High scorers on this scale crave excitement and stimulation. They like bright colors and noisy environments. Excitement-Seeking is akin to some aspects of sensation seeking (Zuckerman, 1979). Low scorers feel little need for thrills and prefer a life that high scorers might find boring.

E6: Positive Emotions. The last facet of E assesses the tendency to experience positive emotions such as joy, happiness, love, and excitement. High scorers on the Positive Emotions scale laugh easily and often. They are cheerful and optimistic. Low scorers are not necessarily unhappy; they are

merely less exuberant and high-spirited. Research (e.g., Costa & McCrae, 1980a) has shown that happiness and life satisfaction are related to both N and E, and that Positive Emotions is the facet of E most relevant to the prediction of happiness.

Openness Facets

By convention, facets of O are designated by the aspect or area of experience to which the individual is open. Thus, a high scorer on the Fantasy scale enjoys rich, varied, and novel experiences in his or her fantasy life; a high scorer on the Ideas facet enjoys rich, varied, and novel experiences in his or her intellectual life. In publications, the implicit "open to..." is usually expressed. Thus, McCrae and Costa (1980a) wrote that "the MBTI [Myers Briggs Type Indicator] TF scale ...was directly related to *Openness to Feelings*" (p. 32, emphasis added).

O1: Fantasy. Individuals who are open to fantasy have a vivid imagination and active fantasy life. They daydream not simply as an escape but as a way of creating for themselves an interesting inner world. They elaborate and develop their fantasies and believe that imagination contributes to a rich and creative life. Low scorers are more prosaic and prefer to keep their minds on the task at hand.

O2: Aesthetics. High scorers on this scale have a deep appreciation for art and beauty. They are moved by poetry, absorbed in music, and intrigued by art. They need not have artistic talent, nor even necessarily what most people would consider good taste; but for many of them, their interest in the arts will lead them to develop a wider knowledge and appreciation than that of the average individual. Low scorers are relatively insensitive to and uninterested in art and beauty.

O3: Feelings. Openness to feelings implies receptivity to one's own inner feelings and emotions and the evaluation of emotion as an important part of life. High scorers experience deeper and more differentiated emotional states and feel both happiness and unhappiness more intensely than others. Low scorers have somewhat blunted affects and do not believe that feelings states are of much importance.

O4: Actions. Openness is seen behaviorally in the willingness to try different activities, go new places, or eat unusual foods. High scorers on this scale prefer novelty and variety to familiarity and routine. Over time, they may engage in a series of different hobbies. Low scorers find change difficult and prefer to stick with the tried-and-true.

O5: Ideas. Intellectual curiosity is an aspect of Openness that has long been recognized (Fiske, 1949). This trait is seen not only in an active pursuit of intellectual interests for their own sake, but also in open-mindedness and a willingness to consider new, perhaps unconventional ideas. High scorers enjoy both philosophical arguments and brain-teasers. Openness to ideas does not necessarily imply high intelligence, although it can contribute to the development of intellectual potential. Low scorers on the scale have limited curiosity and, if highly intelligent, narrowly focus their resources on limited topics.

O6: Values. Openness to Values means the readiness to reexamine social, political, and religious values. Closed individuals tend to accept authority and honor tradition and as a consequence are generally conservative, regardless of political party affiliation. Openness to Values may be considered the opposite of dogmatism (Rokeach, 1960).

Agreeableness Facets

A1: Trust. The first facet of Agreeableness is Trust. High scorers have a disposition to believe that others are honest and well-intentioned. Low scorers on this scale tend to be cynical and skeptical and to assume that others may be dishonest or dangerous.

A2: *Straightforwardness.* Straightforward individuals, that is, those individuals with high scores are frank, sincere, and ingenuous. Low scorers on this scale are more willing to manipulate others through flattery, craftiness, or deception. They view these tactics as necessary social skills and may regard more straightforward people as naïve. When interpreting this scale (as well as other A and C scales), it is particularly important to recall that scores reflect standing *relative to other individuals*. A low scorer on this scale is more likely to stretch the truth or to be guarded in expressing his or her true feelings, but this should not be interpreted to mean that he or she is a dishonest or manipulative person. In particular, this scale should not be regarded as a lie

scale, either for assessing the validity of the test itself, or for making predictions about honesty in employment or other settings.

A3: Altruism. High scorers on the Altruism scale have an active concern for other's welfare as shown in generosity, consideration of others, and a willingness to assist others in need of help. Low scorers on this scale are somewhat more self-centered and are reluctant to get involved in the problems of others.

A4: Compliance. This facet of A concerns characteristic reactions to interpersonal conflict. The high scorer tends to defer to others, to inhibit aggression, and to forgive and forget. Compliant people are meek and mild. The low scorer is aggressive, prefers to compete rather than cooperate, and has no reluctance to express anger when necessary.

A5: Modesty. High scorers on this scale are humble and self-effacing although they are not necessarily lacking in self-confidence or self-esteem. Low scorers believe they are superior people and may be considered conceited or arrogant by others. A pathological lack of modesty is part of the clinical conception of narcissism.

A6: Tender-Mindness. This facet scale measures attributes of sympathy and concern for others. High scorers are moved by other's needs and emphasize the human side of social policies. Low scorers are more hardheaded and less moved by appeals to pity. They would consider themselves realists who make rational decisions based on cold logic.

Conscientiousness Facets

C1: Competence. Competence refers to the sense that one is capable, sensible, prudent, and effective. High scorers on this scale feel well-prepared to deal with life. Low scorers have a lower opinion of their abilities and admit that they are often unprepared and inept. Of all the C facet scales, competence is more highly associated with self-esteem and internal local of control (Costa, McCrae, & Dye, 1991).

C2: Order. High scorers on this scale are neat, tidy, and well-organized. They keep things in their proper places. Low scorers are unable to get organized and describe themselves as unmethodical. Carried to an extreme, high Order might contribute to a Compulsive Personality Disorder.

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C3: Dutifulness. In one sense, *conscientious* means "governed by conscience," and that aspect of C is assessed as Dutifulness. High scorers on this scale adhere strictly to their ethical principles and scrupulously fulfill their moral obligations. Low scorers are more casual about such matters and may be somewhat undependable or unreliable.

C4: Achievement Striving. Individuals who score high on this facet have high aspiration levels and work hard to achieve their goals. They are diligent and purposeful and have a sense of direction in life. Very high scorers, however, may invest too much in their careers and become workaholics. Low scorers are lackadaisical and perhaps even lazy. They are not driven to succeed. They lack ambition and may seem aimless, but they are often perfectly content with their low levels of achievement.

C5: Self-Discipline. By this term, we mean the ability to begin tasks and carry them through to completion despite boredom and other distractions. High scorers have the ability to motivate themselves to get the job done. Low scorers procrastinate in beginning chores and are easily discouraged and eager to quit. Low self-discipline is easily confused with impulsiveness—both are evident of poor self-control—but empirically they are distinct. People high in impulsiveness cannot resist doing what they don not want themselves to do; people low in self-discipline cannot force them to do what they want themselves to do. The former requires an emotional stability; the latter, a degree of motivation that they do not possess.

C6: Deliberation. The final facet of C is deliberation—the tendency to think carefully before acting. High scorers on this facet are cautious and deliberate. Low scorers are hasty and often speak or act without considering the consequences. At best, low scorers are spontaneous and able to make snap decisions when necessary.

APPENDIX B

TABLE. MEANS AND STANDARD DEVIATIONS FOR NEO PI-R

Appendix B

Costa, P.T. & McCrae. R.R. (1992). Means and Standard Deviations for NEO PI-R. In NEO PI-R. *Professional Manual* (pg. 75).

NEO PI-R scale	Men	
	M	SD
Neuroticism (N)	75.2	19.9
Extraversion (E)	108.5	18.5
Openness (O)	110.1	17.5
Agreeableness (A)	120.1	16.1
Conscientiousness (C)	123.6	17.4
Anxiety (N1)	13.3	4.9
Angry Hostility (N2)	12.2	4.5
Depression (N3)	11.6	5.2
Self-Consciousness (N4)	13.7	4.3
Impulsiveness (N5)	15.3	4.2
Vulnerability (N6)	9.2	3.7
Warmth (E1)	22.3	4.0
Gregariousness (E2)	16.0	4.9
Assertiveness (E3)	16.3	4.7
Activity (E4)	17.3	4.3
Excitement-Seeking (E5)	17.2	4.7
Positive Emotions (E6)	19.5	4.3
Fantasy (O1)	17.0	4.7
Aesthetics (O2)	16.7	5.4
Feelings (O3)	19.7	3.8
Actions (O4)	16.1	3.8
Ideas (O5)	19.8	5.0
Values (O6)	20.8	4.5
Trust (A1)	20.9	4.3
Straightforwardness (A2)	20.3	4.3
Altruism (A3)	22.8	3.6
Compliance (A4)	18.1	3.7
Modesty (A5)	18.1	4.4
Tender-Mindedness (A6)	19.9	3.8
Competence (C1)	22.5	3.5
Order (C2)	18.9	4.1

Dutifulness (C3)	23.2	3.9
Achievement Striving (C4)	19.3	4.1
Self-Discipline (C5)	21.8	4.2
Deliberation (C6)	17.8	4.0

APPENDIX C

INSTITUTIONAL REVIEW BOARD APPROVAL

Oklahoma State University Institutional Review Board

Date: Tuesday, May 18, 2010

IRB Application No ED1072

Proposal Title: Discriminant Analysis of the Personality Characteristics and Traits for College Basketball Umpires

Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved   Protocol Expires: 5/17/2011

Principal Investigator(s):

John Winters
325B Willard
Stillwater, OK 74078

Tim Passmore
186 Colvin Center
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.
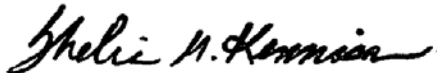
The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Shelia M. Kennison

Shelia Kennison, Chair
Institutional Review Board

APPENDIX D

CURRICULUM VITA

VITA

John Charles Winters
Candidate for the Degree of
Doctor of Philosophy

Dissertation: Discriminate Analysis of the Personality Characteristics of Major College
Baseball Umpires

Education:
2010, December; Ph.D., Health, Leisure & Human Performance, Oklahoma State University
1979   M.Ed., Secondary Physical Education, Colorado State University, Ft. Collins, Colorado
1978   B.S., Health, Physical Education and Recreation, Phillips University, Enid, Oklahoma

Appointments:
Teaching:

Adjunct Professor	University of North Texas	1996-1998
University Instructor	Langston University, Langston, OK	1998-2005
	Northeastern Oklahoma A&M College	1986-1988
Public school teaching	Pioneer High School, Waukomis, OK	1983-1985
	Fox High School, Fox, OK	1983
	Pampa Junior High School, Pampa, TX	1981-1982
	Kingfisher Elementary School, Kingfisher, OK	1980-1981
	Garfield Elementary School, Enid, OK	1979-1980

University Professional:

Pre Awards Research Coordinator, Oklahoma St. University, Stillwater, OK	2007-present
Upward Bound Curriculum Coordinator, Langston University, Langston, OK	1998-2006
Assistant Director, Recreational Sports, University of North Texas, Denton, TX	1993-1998
Assistant Director, Recreational Sports, Texas Tech University, Lubbock, TX	1988-1993
Director, IM Sports, Northeastern OK A&M College, Miami, OK	1985-1988

Consulting:

Research Professional, College Baseball Foundation, Lubbock, TX.	2010-present

Publications in Reviewed Journals:
1. "The Paper Mountain in an Intramural Sports Program". *NIRSA Journal*, Fall, 1990. 15 (1), 12-14.
2. "Masters Thesis Abstract-Differences in Selected Self-Concepts of Highly Competitive and Recreational Intramural Populations". *NIRSA Journal*, Winter, 1987. (4), pg. 6.

Presentations:
1 Winters, J.C. *Management of Seasonal and Part-time Recreational Employees (High School and College-aged Employees).* National Intramural-Recreational Sports Association-Region IV Conference, Ft. Worth, TX.
3. Winters, J.C. *Being a Winner While Being Educated*, Keynote Speaker, Norfolk, AR High School, Annual Athletics Banquet, April 25, 1993.
4. Winters, J. Division of Student Affairs. *CONNECTIONS ~ Quality Service Training Program for Staff.* Led a 3 week training program for Division staff (13 attendees), Fall 1992.

ABSTRACT (SUMMARY)

Name: John Charles Winters   Date of Degree: August, 2010

Institution: Oklahoma State University   Location: Stillwater, Oklahoma

Title of Study: DISCRIMINATE ANALYSIS OF THE PERSONALITY CHARACTERISTICS OF MAJOR COLLEGE BASEBALL UMPIRES

Pages of Study: 73   Candidate for the Degree of Doctor of Philosophy

Major Field: Leisure Studies

Scope and Method of Study: The purpose of this quantitative study was to identify a cluster of personality characteristics and traits possessed by Big XII Conference baseball umpires to inform the selection process of potential major college baseball umpires. This study was comparative; survey-research into personality characteristics and traits of two groups of college baseball umpires and then analyzed by discriminate analysis the five domains of personality between the two groups. Two independent groups of college baseball umpires when selected for this study. A representative and voluntary sample of Big XII Conference baseball umpires were recruited who were current and active with the Big XII Conference through the Big XII Conference Supervisor of Umpires. The most representative sample of potential major college baseball umpires was obtained through game assignment assignors who are charged with assigning college umpires for mid-week and weekend non-conference games at Big XII Conference member institutions. The Revised NEO Personality Inventory was delivered to the study participants as a web-based questionnaire.

Findings and Conclusions: The findings of this study were exploratory into the use of personality assessments to inform the selection process by NCAA Division I supervisors of umpires. Both groups of umpires were to be found to be quite similar to the typical adult population and to each other. The Big XII umpires were significantly more experienced and had a higher level of educational attainment than the group of potential major college umpires. Three personality characteristics were also found to be significantly different between the two groups of umpires. Further study of a larger number of staff umpires from NCAA Division I conferences can build upon the small combination of personality characteristics (facets) found that can cluster together to create a personality profile to inform the selection process of new staff umpires. The goal to objectify the selection process for umpires can be well served by more investigation that may reveal a profile of personality unique to highest level of college baseball that can be measured and then serve as an additional measure of the fitness of a prospective umpire to be employed by the elite college conferences.

ADVISER'S APPROVAL: Tim Passmore, Ed.D