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True play attitudes and behaviors in intercollegiate athletes : a thesis ...

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True Play Attitudes and Behaviors in Intercollegiate Athletes

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Abstract

This thesis investigated the attitudes and the behaviors in the main sport environment of 53 intercollegiate athletes. Two instruments were developed, administered, and combined to give three measures of the "true play" characteristics of the subjects who were members of the men's golf, men's basketball, men's tennis, women's basketball, women's tennis and women's volleyball teams at the University of the Pacific. Results were determined by using the Statistical Package for the Social Sciences: Update 7-9. ANOVA and Scheffe's post hoc test revealed, at the .05 level, that female athletes scored higher in true play characteristics than did male athletes; that star athletes scored higher in true play characteristics than did regular and substitute athletes; and that the sport of volleyball scored higher in true play characteristics than did the sport of golf.

Chapter 1

INTRODUCTION

Sport has become a central theme in American culture, a pervasive element in the lives of most Americans.

> American society has ordained that sports shall be a major aspect of our national life, with major attention, major financial support and major coverage in the media. . . . We devote more money and time to them than we realize. They consume a major portion of our TV programming and our newspapers allocate tremendous space to their coverage. (Michener, 1976, p. 237)

Not only is sport a theme running across all aspects of our American culture, but it also has a tremendous impact upon isolated groups. For example, Michener (1976) stated that to young people and blacks in the U.S., sport has become the primary form through which they can gain the "experience of acceptance", and is a powerful vehicle for social mobility.

Perhaps sport has made such an impact on American life because it relates so closely to the American way of success--the quest for and realization of being number one. This American way of success is closely

tied to an increase in commercialism in most facets of our society, and sport is no exception. Michener (1976) indicated that everyone related to the team, coach, players, owners, even community, can benefit financially from success in sport. Sport is a business to Americans, and the more business oriented it becomes the more difficult it is for individuals to fully enjoy the process of playing the sport.

There is ample argument that sport has grown in the wrong direction. The main drive in sport, as in business, is to win, to be number one. As Michener (1976) stated:

> I see no advantage in establishing a system which leads to one uncontested champion [in U.S. college football]. We have too much of that thing in America. A motion picture cannot be a modest success; it must be an all-time grosser. A book. . . [is] a failure unless it is an all-time best seller. Girls cannot play tennis; they must become champions of this county or that state. (p. 259)

Given the tie between sport and money, it is no surprise that coaches and athletes alike were strongly result-oriented (Leonard, 1974). The hue and cry of many coaches, parents of young athletes, and American

business is to be successful--to win (Michener, 1976).

Because of a win-at-all-costs philosophy, sport has developed some unsavory characteristics. Michener (1976) stated, ". . . the lure of fielding a winning team is so great, and the rewards to any coaching staff so attractive, that outright cheating is condoned" (p. 30). Leonard (1974) agreed, ". . . the attempt to cheat has become so pervasive in the sports we watch on TV that we hardly give it a thought" (p. 17). The athlete loses the main focus of playing when concentrating primarily on winning. Michener (1976) indicated that an overdedication to winning negates any spiritual catharsis. Leonard (1974) suggested the true nature of sport is in the body, and the overemphasis placed on winning distracts players from realizing this. Our culture perpetuates this overemphasis on winning by revering quotes such as "Winning isn't everything; It's the only thing," and "Losing is a little like dying." Schmitz (1968) stated that the exaggeration of the importance of victory is an abuse which can kill the spirit of play within sport. Authors agree that elements of play must remain in order for sport to be a sport. When play is eliminated it severely limits the potential for individual expression.

Leonard (1974) suggested that this overemphasis on winning blinds us to the other possibilities that can be realized through sport. It can be the best possible path to personal enlightenment and social transformation. Ravizza (1973) has shown sports to be an arena which facilitates peak experiences, those instances of extraordinary perception and/or performance. Murphy and White (1978) discussed numerous examples in sports of stellar accomplishments performed in altered states of consciousness. The ability of some athletes and teams to transcend the "win-at-all-costs" mentality allows them to not only experience the true nature of sport, but also moves them closer to their highest possible performances.

The main premise of this thesis is that athletes who are involved in "true play," who are able to transcend culture's extrinsic rewards and focus instead on the intrinsic rewards of playing the game, are those who come closest to their highest possible potential in sports. Is this attitude of true play measurable; this attitude of competing for the sheer joy of challenging oneself to perform to the maximum, of playing the game exclusively within the boundaries of the rules, of becoming engrossed in the process itself, and

participating for the love of the game, not for the rewards of one's society? And once measured, were these true play characteristics related to high performance in intercollegiate athletes? These are the questions this thesis attempted to answer.

Definitions

The following terms were defined in order to give the reader a better understanding of this study. They were developed by the author and a panel of experts following extensive search through existential philosophy and humanistic psychology literature.

1. Characteristics of true players. There are several categories of true player characteristics. Players cannot be categorized as either being a true player or not. Rather true play is a continuum on which every player has a place, as defined by his or her behaviors in and attitudes toward competition. In defining the behavioral and attitudinal characteristics that make up true players, this thesis used the following categories:
   a. Feeling the body: Feeling the body is a characteristic of true players because they are inwardly tuned. They have heightened kinesthetic awareness and may notice bodily

sensations more so than other athletes. These may include rhythm of body in motion, blood flowing, surges and ebbs in strength, periods of incredible control, and subtle changes in muscle tension.

b. Winning: Winning, or giving one's total effort at all times to win, is a characteristic of true players. That is one of the rules of competition to which true players are totally committed. True players are not ego-involved in the game's outcome. They are pleased if their performance was good even though they may have lost the game. True players feel and exhibit an emotional evenness whether they win or lose.

c. Response to competition: True players have a characteristic response to competition. From within themselves comes a spontaneous drive for playing in truly competitive situations. To reach their full potential true players know they have to play with the best competition. Thus, they have an innocent desire to play with better players, and in close games. For true players, games are a competitive framework within which the two sides work cooperatively.

Ideally they are attempting to push their competitive partners higher toward their maximum performance. Thus, true players are happy to see their competitive partners play well.

d. Process: Being totally involved in the process is another characteristic of true players. They consistently perform at or near their potential. True players exhibit a total awareness of the whole game environment. They take in all stimuli and shut out nothing. Their performances thus reflect this total awareness by being the appropriate response for each situation. At times their concentration becomes focused on a single stimulus. True players' heightened awarenesses, this intense concentration on all game stimuli, lead them to a greater likelihood of experiencing altered states of consciousness. These may take the form of time speeding by, movements going in slow motion, the environment seeming to change and/or bodily senses becoming heightened.

True players undoubtedly experience some frustrations with the sport environment. Theirs is a spontaneous nature. Sports stifle this

spontaneity in some ways by forcing them into schedules, into the predictable patterns of behavior the coach desires, and into certain goal-orientations. True players transcend most controlled situations and do express their creative, graceful, spontaneous natures. True players are committed to excellence, to becoming the best their ability allows. This commitment comes from within each true player, from a feeling of autonomy. True players do not feel they need to prove themselves to others, but inwardly want to become as good as they can be. True players' pursuits of excellence are often aggressive. They know what they want and are committed to reaching it. But this aggression is without hostility.

True players exhibit a certain personal grace in their actions. They seem to respond to a variety of situations appropriately; to have things in a proper perspective.

e. Cheating: How they respond to cheating is a characteristic of true players. True players know the rules of the game and never violate or consider violating them regardless of their

opponent's approach to following the rules.

f. Practice: True players approach practice in a characteristic fashion. True players realize there are no shortcuts to excellence, thus they make diligent use of practice for skill acquisition and improvement. They work conscientously in practice putting in quality time and are not obsessed with proving they are the hardest workers on the team.

g. Skill: Skill level is an important characteristic of true players. True players exhibit an excellent skill level. Their displays of skill are marked by extraordinary power, finesse, and/or graceful rhythm. Their high level of skill allows them to play the game without consciously planning out their moves. This results in movements that are polished and spontaneous.

2. Star. A star is a player who gets conference, regional, and/or national recognition as a player (Albaugh, 1977).

3. Regular. A regular is a player who will definitely contribute in the game either as a starter or first-line substitute (Albaugh, 1977).

4. Substitute. A substitute is a player who will not play until the game's outcome has been decided (Albaugh, 1977).
5. Individual Sports. Individual sports are golf and tennis.
6. Team Sports. Team sports are basketball and volleyball.
7. True Play Questionnaire (TPQ). The True Play Questionnaire (TPQ) is an instrument developed by a panel of experts to measure athletes' attitudes toward true play. This was administered to the athletes themselves. (See Appendix A.)
8. Coach's True Play Questionnaire (CTPQ). The Coach's True Play Questionnaire (CTPQ) is an instrument developed by a panel of experts to measure the athletes' behavior exhibited in terms of the characteristics of the true player (see definition #1, above). This measure was administered to the athletes' respective coaches. (See Appendix B.)
9. True Play Index (TPI). The True Play Index (TPI) is the subject's combined score on the TPQ and the CTPQ.

Statement of the General Problem

This study's general problem was to determine if significant differences in true play characteristics

existed among the tested groups and sub-groups of the University of the Pacific intercollegiate athletes as measured by the TPI, the CTPQ, and the TPQ.

Subproblems

The following subproblems were developed for this study:

1. To determine significant differences between team and individual sports for mean scores on the TPI, the CTPQ, and the TPQ.

2. To determine significant differences between female and male athletes for mean scores on the TPI, the CTPQ, and the TPQ.

3. To determine significant differences among stars, regulars, and substitutes for mean scores on the TPI, the CTPQ, and the TPQ.

4. To determine significant differences among the men's golf team, the men's basketball team, the men's tennis team, the women's volleyball team, the women's basketball team, and the women's tennis team at the University of the Pacific for mean scores on the TPI, the CTPQ, and the TPQ.

5. To determine significant differences among the sports of golf, basketball, tennis, and volleyball for mean scores on the TPI, CTPQ, and TPQ.

Basic Assumptions

The following basic assumptions were made for this study:

1. It was assumed that each subject participated in the questionnaire procedures with complete integrity and honesty.

2. It was assumed that all subjects tested were able to read and understand the items on the TPQ.

Limitations

The following limitations occurred during this study:

1. The researcher acknowledged the possibility of varying motivational levels from individual to individual.

2. The testing environment was not ideal in that all tests were not administered in the identical controlled setting (see explanation in Chapter 3, pp. 35-36).

Delimitation

The following delimitation was established for this study:

All subjects were intercollegiate athletes enrolled at the University of the Pacific, members of the teams selected as subjects and present on the day the TPQ was

administered to their team.

Hypotheses

The following experimental hypotheses were made for this study:

1. There will be no significant difference for mean scores on the TPI, CTPQ or TPQ between team sport players and individual sport players.

2. Female athletes will have significantly higher mean scores on the TPI, CTPQ, and/or TPQ than will male athletes.

3. The star group of athletes will have significantly higher mean scores on the TPI, CTPQ, and/or TPQ than will the regular group and the substitute group.

4. The men's golf team will have significantly higher mean scores on the TPI, CTPQ, and/or TPQ than the other teams (men's basketball, men's tennis, women's volleyball, women's tennis, and women's basketball), among which there will be no significant difference.

5. When grouping all the subjects by sport (i.e., golf, basketball, volleyball, and tennis) without regard to sex, golf will have significantly higher mean scores on the TPI, CTPQ, and/or TPQ than the three other sports.

Justification

This study attempted to show the relationship

between the characteristics of true play and sport by answering the following questions: Will the true player be the best performer? Are the best players true players? How does a true play attitude affect performance?

It was the attempt of this study to discover relationships between athletes and their respective levels of true play characteristics. This study also discussed insight into the competitive attitudes and behaviors of successful athletes at the University of the Pacific. The TPQ and the CTPQ were administered to the subjects and their respective coaches. The scores from those instruments were combined into the TPI to give a measure of the degree of true play in all the participating athletes.

Chapter 2

REVIEW OF THE LITERATURE

The review of the literature was divided into the following subcategories: True Play, Unusual Experiences in Sport, The Experience Inquiry, Related Studies on Attitudes and Personality Traits of Athletes, and Development of Instruments to Measure True Play.

True Play

The literature in the field of humanistic psychology and existential philosophy of sport abounds with definitions of play. Huizinga (1950/1972) indicated that play is a voluntary activity; it is freedom; it's not ordinary life yet it still proceeds with utmost seriousness. Fink (1960/1972) credited Hegel with the idea ". . . that in its indifference and extreme lack of seriousness, play is the unique and most sublime expression of true seriousness" (p. 83). Fink (1960/1972) called play a fundamental phenomenon of existence. Sartre (1956/1972) stated,

> The first principle of play is man himself; throughout it he escapes his natural nature; he himself sets the value and rules for his acts and consents to play only according to the rules which he himself has established and defined. . . (p. 95).

Huizinga (1950/1972) also mentioned the importance of rules within play. "Play demands order absolute and supreme. The least deviation from it spoils the game. . . despite his ardent desire to win, he (the player) must stick to the rules of the game" (pp. 55-56). The literature suggested that those who truly play, who treat play with the greatest respect, exhibit certain attitudes, behaviors and/or philosophies about play. They play within the rules. They understand and appreciate the value of a worthy opponent. They are process-oriented. They give total effort and commitment and expect it of their teammates.

In an explanation of Huizinga's Homo Ludens, Leonard (1974) stated that play is order; the rules of the game are absolute and binding; no deviation, no doubt. As Metheny (1968/1972) stated, "rules are paradoxical. They restrict in order to free. . . [freeing the player] to do his utmost. . . to use himself fully in the performance of one self-chosen human action. . . " (p. 222). In talking with many athletes, Metheny (1968/1972) noted that the predominant reason given for their interest in sport was "freedom"; freedom to go all out, holding nothing back.

Those who truly play, as suggested in the

literature, have certain attitudes toward their opponent and their competition. Fink (1960/1972) indicated that there is no play without commitment, agreed and accepted. Gerber (1967/1972) suggested that players approach their fellow players as "Thou"; with a sense of neutrality by which they receive and recognize their opponent as a partner. It was further pointed out by Hyland (1978) that the root of the word competition, com-petitio, means "to question together, to strive together" (p. 64). Thus, he suggested, opponents are truly closer to friends than enemies because they help each other achieve a level of excellence that would not be achieved alone.

The process one goes through in truly playing has certain characteristics defined in the literature. Sadler (1966/1972) stated that play causes one to be intensely involved. A person must play like a child in order to be "in the world." Hyland (1980) suggested that there is a stance of play; it is a total immersion in the present which creates a responsive openness to the immediate surroundings. Orlick (1980) suggested that examples of best performances of athletes had this characteristic of staying in the moment, being immersed in the present. This present centeredness also takes in

the awareness of one's own body. Orlick (1980) cited as example that "elite long distance runners tend to direct much of their marathon thinking towards their own bodies. . . [they] listen to their bodies, to their breathing, to their muscles, to their heart rate, to their temperatures" (p. 203).

One of the finest examples of true player behavior was Bill Bradley, Princeton's great basketball star of the 1960's. Bradley had incredible individual skills; skills honed through long hours of diligent, disciplined practice. Bradley's powers were not limited to himself but were also extended to his less talented teammates lifting them to greater heights. Bradley went all out to win, doing whatever it took to help his team and bypassing personal glories. Yet when defeat did come, Bradley was not caught up with it (McPhee, 1965).

Unusual Experiences in Sport

There are many accounts in literature of extraordinary experiences occurring in the sports realm; experiences which suggested an altered state of consciousness allowing the athlete to achieve feats beyond the norm. Pelletier and Garfield (1976) defined altered state of consciousness as a psychological condition, in which one clearly feels a qualitative

shift in one's pattern of mental functioning. It is an experiential phenomena of a transcendent nature, that goes beyond quantitative states of alertness.

Murphy and White (1978) described an altered state of consciousness as when the athlete talks about being unconscious, out of one's mind, in the twilight zone, out of one's gourd, over one's head. They continued that before these extra powers can take over, the athlete must master the physical skills by paying the dues of training. Murphy (1973) suggested they must also let themselves get wrapped up in the enjoyment, the ecstasy of playing the sport. Murphy (1973) listed categories of varieties of special experiences in sport with which outstanding performances were often paired. These altered states included extraordinary clarity, extraordinary focus and concentration, a sense of void, deautomatization, a perception of oneness everywhere, access to larger energies, and supreme aesthetic enjoyment.

Ravizza (1973) examined peak experiences in sport, those which many called their "greatest moment" during participation. Athletes noted these as non-voluntary, transcendant experiences, ones in which they were totally fascinated with the task at hand so that they,

in effect, had become lost in the present.

The Experience Inquiry

Fitzgerald (1966) developed a 53-item paper-and-pencil test called the Experience Inquiry (EI) designed to measure one's openness to experience. The items were either original or were adapted from a scale constructed to measure hypnotic susceptibility. The answer to each question was circled by the test takers. Their choices were seven points on a continuum with Very Strongly Agree and Very Strongly Disagree being the two extremes. One of the dimensions yielded by cluster analysis was an openness to inner experience and altered consciousness.

Albaugh (1979) used the EI to study the relationship between openness to unusual experiences and performance levels in various groups of athletes. Eleven items on the EI were adjusted to include words or phrases about the sport environment.

Albaugh (1979) hypothesized that good players would score significantly higher than regular or substitute players on the EI, that athletes enrolled in a class on Sport and Cosmic Forces would score significantly higher than other athletes, and that individual sport athletes would score significantly higher than team sport athletes. Analysis of variance showed that the only

significant difference was found between Sport and Cosmic Force athletes and other athletes, leading Albaugh (1979) to conclude that either these athletes were more open to unusual consciousness experiences so they were attracted to the class, or that exposure to altered states of consciousness through their class allowed them to be more open to these experiences.

Related Studies on Attitudes and Personality Traits of Athletes

This section of the literature review investigated attitudes and personality traits of athletes related to true play. The results discussed suggested some differences do exist between various groups of athletes, differences that were expected to some extent to surface in this study.

The field of personality research was vast and was investigated selectively for related studies. Literature was reviewed that examined college athletes' personality traits and attitudes, the differences between male and female athletes, and the differences between team and individual sport athletes.

Research has shown a difference between the various personality traits of higher and lower level athletes. Teevan and Yalof (1980) showed that 13 starters on a

varsity football team scored higher on the Need for Achievement Scale than did 13 non-starters. Dowd and Innes (1981) showed high level players scored better than low level players on intelligence and anxiety. Research generally supported the fact that higher level athletes were generally more conscientous, self-controlled, self-sufficient, intelligent, extroverted, and lower in anxiety than low level athletes (Dowd and Innes, 1981).

Research has discussed personality differences of team sport athletes versus individual sport athletes. Singer (1969) found no significant difference in personality profiles between male team sport subjects (baseball) and male individual sport subjects (tennis) on the Edwards Personal Preference Schedule. On the other hand, Peterson, Weber, and Trousdale (1967) used the Focus of the Sixteen Personality Factor Questionnaire in their study of female AAU and Olympic team members and found that those involved in individual sports scored significantly higher on six personality factors and lower on only one factor than did team sport subjects. This suggested a difference may well exist between the personality makeup of team sports players and individual sports players.

The largest research area found compared attitudes and personality traits of female to male athletes. Lefebvre (1979) investigated achievement motivation in male and female athletes and found that women scored higher on intrinsic motivation (i.e., the relationship of the person to the task, rather than to others), and higher on fear of failure than did men. Thus he concluded that women showed a higher need to perform well, to enjoy the performance; while dominance, or doing better than other persons, had been shown to be more salient among men than women. Sage (1980) likewise found men to be more oriented toward victory than women. Kidd and Woodman (1975) found that men rated higher in the expressed desire to win at sports than did women, whereas women rated higher in the desire to play well. Gundersheim (1982) used the Personal Orientation Inventory to examine the self-actualizing characteristics of male and female athletes and non-athletes. He showed that female athletes were more self-actualizing than male athletes, which he also found to be true for the general population studied.

Smith (1978) investigated sportsmanship, another true play attitude, for children in grades 7-12. She found females scored higher in sportsmanship than males

in the athlete, non-athlete, and total population groups.

Also vital to this study was understanding how coach and player viewed events in the sport environment. Rejeski, Rae and McCook (1981) discussed perceptual differences between coach and player. They found a gap did exist between coach and player in how they perceived sport outcomes. Players tended to place blame on outside factors such as coaching, while coaches placed blame more on the players, their attitude, and effort.

The Development of Instruments to Measure True Play

The instruments used (the TPI, CTPQ, and TPQ) to measure the attitudes and behaviors of true play were developed from all the aforementioned literature. The panel of experts synthesized the literature cited in the section on True Play along with their own knowledge and intuition developed by years of experience in sport as players and as coaches.

The panel began by formulating the definitions of the various true player characteristics that appeared in Chapter 1. Once the definitions were formed, the panel developed several questionnaire items designed to test the attitudes of athletes for each of the true play categories of response to competition, feeling the body,

winning, process, skill, cheating, and practice. These items were combined in Phase I of this study as the initial True Play Questionnaire (TPQ). The questionnaire's form was modeled after the Experience Inquiry. The TPQ was selectively reduced in size to produce an instrument that had good internal consistency, good test-retest reliability, and a standardized item alpha of 0.82675. Once the TPQ was shown to be a valid and reliable instrument, the panel constructed a measure of the true play behaviors over the same categories. This instrument, the CTPQ, was given to the coaches of the subjects because it was felt they were the best judges of their players' behavior. On the CTPQ, the coaches answered questions about the players that the players had also answered about themselves.

Chapter 3

RESEARCH METHODOLOGY

The procedures used in gathering and interpreting the data are described in this chapter and will be discussed in two phases. First, valid and reliable instruments for measuring true play attitudes and behavior were developed. Then these instruments were used in testing the true play characteristics of the subjects.

Phase I

Phase I included the development of two reliable and valid instruments to measure the degree of true play characteristics in intercollegiate athletes. These instruments were named the True Play Questionnaire (TPQ) and the Coach's True Play Questionnaire (CTPQ). Scores from these two instruments were combined to give a third score, the True Play Index (TPI). The TPQ was developed as follows.

Sources of Data

The sources of data in Phase I for determining test-retest reliability were male and female intercollegiate athletes (N=25) enrolled in the Sports In America class in Spring, 1982 at the University of the Pacific. These individuals were chosen as a test

group because of their professor's openness in allowing two interruptions in class time for two administrations of the 70-item TPQ and because these subjects were all intercollegiate athletes gathered conveniently in both time and place. Breakdowns by sport and sex were: football (N=8), tennis (N=5), basketball (N=5), baseball (N=3), softball (N=2), swimming (N=1), volleyball (N=1), men (N=15), women (N=10) for a total of 25.

Instrument for Data Collection

A player questionnaire consisting of 70 items was developed by a panel of experts using the characteristics of the true player (see definitions, Chapter 1, pp. 7-12). These items were designed to show: player's response to competition (12 items); importance placed on winning (14 items); kinesthetic awareness (5 items); commitment (3 items); attitude toward cheating (6 items); practice attitude (3 items); process (25 items); and skill (2 items).

Administration of the Test

The player questionnaire was administered by the researcher. The items were printed in reusable test packets and the subjects recorded their answers on separate answer sheets. On the answer sheet, subjects were instructed to print their name, date, main sport,

sex, birthdate, year in school and major. The subjects then read the instructions on the test packet along with the administrator. In accordance with the established test administration procedure, the administrator answered only questions dealing with the directions and gave no interpretation of the items on the test. The examinee was encouraged to use his or her own best judgment in interpreting the item. The player questionnaires were administered in a classroom setting by the researcher. The reliability of this instrument was initially tested with the test-retest method. The first administration was done on 2/8/82 and the retest was given on 3/30/82.

Test Scoring

All tests were scored by transmitting the answers on the player questionnaire answer sheets directly to the computer.

Analysis of the Data

In the analysis of the data the following statistical procedures were used:

1. The Statistical Package for the Social Sciences: Update 7-9 computer program on file at the University of the Pacific's Computer Services Department was employed for all statistical analyses.

2. The Pearson Correlation Coefficient was used for test-retest reliability. Those items with a Pearson correlation coefficient >.05 were eliminated.

3. A computer printout gave a breakdown of the frequency of the five possible responses given for each of the items meeting the above criteria. Those items with no responses in one of the five possible response categories were likewise eliminated.

4. To establish internal consistency (Nunnally, 1967, pp. 210-211), a series of five item-total correlation programs and five coefficient alpha programs were run on the remaining 47 items that had satisfactorily passed the Pearson Correlation Coefficient criteria. Those with low item-total correlations were gradually eliminated until after five runs 24 items had been eliminated, 23 items remained, and the standardized item alpha for the questionnaire reached 0.82675.

The CTPQ was developed subsequent to the analysis described above on the TPQ. A panel of experts constructed the CTPQ by streamlining the TPQ from 23 to 16 items. The CTPQ was designed for the player's coach so the researcher could examine the player's true play behaviors as perceived by his or her coach in the categories of kinesthetic awareness, response to

competition, winning, process, skill, cheating and practice. This dual-pronged approach was adopted so the researcher would have both behavioral (CTPQ) and attitudinal (TPQ) measures with which to examine each player's true play characteristics.

The concept of true play fit the definition of a construct (Nunnally, 1967, pp. 84-85). It was a measure of psychological variables, an abstract phenomenon, which was more difficult to validate than a construct measure. The CTPQ, as a measure of true play characteristics, was accepted as having face validity because it was constructed by a panel of experts. It was analyzed by the University of the Pacific's Computer Services Department and their Statistical Package for the Social Sciences: Update 7-9 program and found to have a standardized item alpha of 0.69956.

Although both the TPQ and the CTPQ were found to be individually valid and reliable instruments, there was not a significant correlation between them (Pearson correlation coefficient = 0.150). Therefore, it was decided the best evaluation of true play characteristics was to analyze the data from the CTPQ and the TPQ separately as well as combining their scores to yield the True Play Index (TPI).

Phase II

Phase II of this study was testing subjects with the instruments developed in Phase I, the CTPQ and the TPQ. Scores from those tests were also added to give the TPI for each subject.

The sources of data in Phase II consisted of male and female intercollegiate athletes (N=53) at the University of the Pacific: men's golf (N=8), men's tennis (N=6), men's basketball (N=12), women's tennis (N=7), women's volleyball (N=10), and women's basketball (N=10), men (N=26), women (N=27), individual sports (N=3), team sports (N=3), men's teams (N=3) and women's teams (N=3).

All athletes involved in this study were evaluated for athletic ability by their coach. Every coach placed each of his athletes in one of three categories: star players, regular players and substitute players (see Chapter 1, pp. 11-12 for definitions). Each coach was given written definitions of star, regular and substitute and asked to categorize his players according to these descriptions.

Instruments for Data Collection

The instruments for data collection in Phase II were two separate questionnaires, the TPQ and the CTPQ. The

TPI for each subject was determined by combining the scores of both these examinations. The TPQ consisted of 23 items. These questions were answered by the subjects and were designed to show the player's response to competition (2), the importance placed on winning (1), kinesthetic awareness (3), attitude toward cheating (1), practice attitude (2), process (5) and skill (1). A copy of the TPQ can be found in Appendix A. The CTPQ consisted of 16 items broken down by the same categories into the player's response to competition (2), the importance placed on winning (1), kinesthetic awareness (3), attitude toward cheating (1), practice attitude (2), process (5), and skill (1). These questions were answered by each subject's coach in evaluation of that player. The CTPQ was designed to measure the true play behaviors as perceived by coaches. A copy of the CTPQ can be found in Appendix B. All items on both the TPQ and CTPQ were answered using a five point Likert-type scale (Nunnally, 1967). The anchors for the scale were: 1 = never, 3 = half the time and 5 = always. Each item on these two tests was scored from one to five points, with five points given for the answer that the hypothetical true player would give and one point given for the answer on the opposite end of the continuum.

Administration of the Tests

The TPQ and the CTPQ were administered by the researcher. The items were printed in re-usable test packets, and the subjects and coaches recorded their answers on separate TPQ or CTPQ answer sheets (see Appendices C and D) by circling the number of the most appropriate answer. On the TPQ answer sheet, subjects were instructed to print their name, date, main sport, sex, birthdate, year in school, and major. The subjects then read the instructions on the test packet along with the administrator. In accordance with the established test administration procedure, the administrator answered only questions dealing with the directions and gave no interpretation of the items on the test. The examinee was encouraged to use his or her own best judgment in interpreting the item. On the CTPQ answer sheet, coaches were instructed to print their name, date, athlete's name, main sport, and whether that athlete (subject) was a star, regular or substitute. Those categories were defined in a handout given each coach. Each coach was also given a handout on the characteristics of true players (see definitions, Chapter 1, pp. 7-12) and asked to read it before answering the CTPQ for any of his athletes. After

reading this handout, the coaches were encouraged to ask the researcher for clarification of definitions or testing procedure.

TPQs for men's basketball and men's and women's tennis were administered in a classroom setting by the researcher. However, practicality dictated administrations outside this setting in the other three sports. Women's basketball was administered by the researcher following a team practice. Men's golf and women's volleyball were administered by their respective coaches, who first received a detailed briefing of administrative procedures from the researcher.

CTPQs for all sports were administered in two parts. First, the researcher explained the procedure to the coach, gave him a handout on characteristics of true players, gave him the definitions of star, regular and substitute, and answered any questions the coach had. Second, the coach was left to complete the CTPQ for each of his athletes on his own time. All the CTPQs were collected within a week of the date they were given to the coaches.

Test Scoring and Interpretation

All tests were scored by transmitting the answers

on the TPQ and CTPQ answer sheets directly to the computer. On those items to which the hypothetical true player would answer a one, the scoring system was reversed by the computer so that an answer of one was given five points and an answer of two was given four points.

The TPI for each subject was then determined by the computer's adding his or her scores on the TPQ and the CTPQ.

Analysis of the Data

In the analysis of the data the following statistical procedures were used:

1. The Statistical Package for the Social Sciences: Update 7-9 (1981) computer program on file at the University of the Pacific's Computer Services Department was employed for all statistical analyses.

2. Analysis of variance (ANOVA) was used to determine if any significant differences existed among the sub-groups.

3. If a significant F ratio was found by ANOVA, Scheffe's post hoc test was used to determine the specific location of those significant differences.

Chapter 4

ANALYSIS OF DATA AND RESULTS

Data were gathered, analyzed and discussed from the True Play Index (TPI) and its component parts, the True Play Questionnaire (TPQ) and the Coach's True Play Questionnaire (CTPQ). Because of the low Pearson correlation coefficient of P = 0.150 between the CTPQ and the TPQ, those two instruments were also analyzed separately.

Analysis of variance (ANOVA) was used to determine if any significant differences existed on the TPI, CTPQ and/or the TPQ among the following groups: (1) individual and team sports; (2) male and female players; (3) regular players, star players and substitute players; (4) the teams of men's golf, men's basketball, men's tennis, women's volleyball, women's tennis and women's basketball; and (5) the sports of golf, basketball, tennis and volleyball, with sexes combined in basketball and tennis. If a significant F ratio was found, when investigating groups of three or more, Scheffe's post hoc test was used to determine the specific location of those significant differences. The level of significance was set at .05.

Hypotheses and Data analysis

Hypothesis 1: Experimental hypothesis and null

hypothesis: There will be no significant difference for mean scores on the TPI, CTPQ, or TPQ between team sport players and individual sport players.

For a significant difference an F ratio $\geq$ 4.036 was needed. ANOVA found F ratios of 0.488 on the TPI, 0.025 on the CTPQ and 1.184 on the TPQ (see Appendix E). The F ratios were not significant; therefore, the null and experimental hypotheses were accepted.

Hypothesis 2: Experimental hypothesis: Female athletes will have significantly higher mean scores on the TPI, CTPQ, and/or TPQ than will male athletes.

Null hypothesis: There will be no significant difference in mean scores on the TPI, CTPQ and TPQ between female and male athletes.

For a significant difference an F ratio $\geq$ 4.036 was needed. As shown in Table 1 (p. 38), ANOVA found F ratios of 4.039 on the TPI, 0.034 on the CTPQ, and 7.245 on the TPQ. On both the TPI and the TPQ, female athletes' mean scores (TPI = 136.9630, TPQ = 80.5926) were found to be significantly higher than male athletes' mean scores (TPI = 130.7308, TPQ = 74.6923). Therefore, the null hypothesis was rejected, while the experimental hypothesis was accepted.

Hypothesis 3: Experimental hypothesis: The star

Table 1

ANOVA Results Between Female and Male Athletes[a]

	Mean Scores		Sum of Squares			Mean Squares		F ratio[b]	F probability
	Female	Male	Between Groups	Within Groups	Total	Between Groups	Within Groups		
TPI	136.96	130.73	514.45	6496.08	7010.53	514.45	127.37	4.039	0.0498
CTPQ	56.37	56.04	1.46	2165.26	2166.72	1.46	42.46	0.034	0.8537
TPQ	80.59	74.69	461.11	3246.06	3707.17	461.11	63.65	7.245	0.0096

Note.

[a]The degrees of freedom for the TPI, CTPQ, and TPQ were: between groups = 1, within groups = 51, and total = 52.

[b]The F ratio required for one and 51 degrees of freedom at the .05 level was 4.036.

group of athletes will have significantly higher mean scores on the TPI, CTPQ, and/or TPQ than will the regular group and the substitute group.

Null hypothesis: There will be no significant difference in mean scores on the TPI, CTPQ, and TPQ among star, regular, and substitute athletes.

For a significant difference an F ratio $\geq$3.190 was needed. As shown in Table 2 (p. 40), ANOVA found F ratios of 8.259 on the TPI, 6.241 on the CTPQ, and 3.382 on the TPQ. Scheffe found these significant differences to be between the star and regular groups and between the star and substitute groups on both the TPI and the CTPQ. On the TPQ, the significant difference was between the star and substitute groups only. Therefore, the null hypothesis was rejected, while the experimental hypothesis was accepted.

Hypothesis 4: Experimental hypothesis: The men's golf team will have significantly higher mean scores on the TPI, CTPQ, and/or TPQ than the other teams (men's basketball, men's tennis, women's volleyball, women's tennis, and women's basketball), among which there will be no significant difference.

Null hypothesis: There will be no significant difference in mean scores on the TPI, CTPQ, and TPQ among

Table 2

ANOVA Results Among Star, Regular, and Substitute Athletes[a]

	Mean Scores			Sum of Squares			Mean Squares		F ratio[b]	F probability
				Between	Within		Between	Within		
	Star	Regular	Substitute	Groups	Groups	Total	Groups	Groups		
TPI	142.92	133.12	127.00	1740.95	5269.58	7010.53	870.48	105.39	8.259	0.0008
CTPQ	60.85	55.62	53.00	432.87	1733.85	2166.72	216.44	34.68	6.241	0.0038
TPQ	82.08	77.50	74.00	441.75	3265.42	3707.17	220.87	65.31	3.385	0.0419

Note.

[a]The degrees of freedom for the TPI, CTPQ, and TPQ were: between groups = 2, within groups = 50, and total = 52.

[b]The F ratio required for two and 52 degrees of freedom at the .05 level was 3.19.

any of the tested teams (men's golf, men's basketball, men's tennis, women's volleyball, women's tennis, and women's basketball).

For a significant difference an F ratio $\geq$ 2.422 was needed. ANOVA found F ratios of 0.841 on the TPI, 0.704 on the CTPQ, and 2.502 on the TPQ (see Appendix F). Since there was a significant F ratio on the TPQ, Scheffe's multiple range test was used. No significant difference was found among the six teams on the TPQ. Therefore, the null hypothesis was accepted, and the experimental hypothesis was rejected.

Hypothesis 5: Experimental hypothesis: When grouping all the subjects by sport (i.e., golf, basketball, volleyball, and tennis) without regard to sex, it was hypothesized that golf would have significantly higher mean scores on the TPI, CTPQ, and/or TPQ than the three other sports.

Null hypothesis: There will be no significant difference in mean scores on the TPI, CTPQ, and TPQ among the sports of golf, basketball, volleyball, and tennis.

For a significant difference an F ratio $\geq$ 2.804 was needed. As shown in Table 3, (p. 42) ANOVA found a significant F ratio of 3.930 on the TPQ, and insignificant F ratios of 0.929 on the TPI and 0.852 on

Table 3

ANOVA Results Among the Sports of Golf, Basketball, Volleyball, and Tennis[a]

	Mean Scores				Degrees of Freedom			Sum of Squares			Mean Squares		F ratio[b]	F probability
	Golf	Basketball	Volleyball	Tennis	Between Groups	Within Groups	Total	Between Groups	Within Groups	Total	Between Groups	Within Groups		
TPI	128.88	133.41	137.90	134.77	3	49	52	377.13	6633.40	7010.53	125.71	135.38	0.929	0.4340
CITPQ	56.13	57.32	53.40	56.54	3	49	52	67.44	2099.28	2166.72	35.81	42.02	0.852	0.4722
TPQ	72.75	76.09	84.50	78.23	3	49	52	719.04	2988.13	3707.17	239.68	60.98	3.930	0.0136

Note.

[a]The degrees of freedom for the TPI, CITPQ, and TPQ were: between groups = 3, within groups = 49, and total = 52.

[b]The F ratio required for three and 52 degrees of freedom at the .05 level was 2.804.

the CTPQ. Scheffe found volleyball's mean score (84.50) significantly higher on the TPQ than was golf's (72.75). No other sports were found to have significant differences. This volleyball-golf relationship was not found to be significantly different on the CTPQ or on the TPI. Therefore both the experimental and null hypotheses were rejected.

Results

The results of this study were:

1. No significant difference existed between team sport players and individual sport players on any of the three instruments.

2. Female athletes were found to score significantly higher on the TPI and the TPQ than did male athletes. No significant difference existed on the CTPQ.

3. The star athlete group was found to score significantly higher than both the regular athlete group and the substitute athlete group on both the TPI and the CTPQ. Only on the TPQ was the star group significantly higher than the substitute group.

4. No significant differences existed among the six teams tested (men's tennis, women's tennis, men's basketball, women's basketball, men's golf, and women's

volleyball) on the TPI, the CTPQ, or the TPQ.

5. When comparing the four sports of tennis, basketball, golf, and volleyball to one another, volleyball was found to score significantly higher than golf on the TPQ only. No other significant differences were found among other sports or on the TPI or CTPQ.

Chapter 5

SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

Summary

In summary, the purpose of this study was twofold. Phase I involved developing a valid and reliable instrument for measuring attitudes and behaviors of intercollegiate athletes within their main sport environment in terms of true play characteristics. Phase II involved solving the study's general problem, determining if significant differences in the degree of true play characteristics existed among the tested groups and sub-groups of the University of the Pacific's intercollegiate athletes as measured by the True Play Index (TPI), The Coach's True Play Questionnaire (CTPQ), and the True Play Questi aire (TPQ). The subjects (N=53) were male and female intercollegiate athletes at the University of the Pacific and included members from both team sports and individual sports. The specific teams were men's golf (N=8), men's basketball (N=12), men's tennis (N=6), women's volleyball (N=10), women's basketball (N=10), and women's tennis (N=7). The subjects were divided into five subgroups: (1) individual sport members (golf and tennis) and team sport members (basketball and volleyball); (2) male and

female; (3) star players, regular players and substitute players; (4) their particular team; and (5) their sport, with males and females combined (i.e., golf, basketball, tennis and volleyball).

The TPI was a combination of two instruments: the TPQ which was given to the subjects and was a measure of their attitudes toward competition, and the CTPQ which was a measure of each subject's behaviors toward competition as evaluated by his or her head coach. The 23-item TPQ was developed item-by-item by a panel of experts. The original instrument with 70 items was reduced to 23 by eliminating those items with low Pearson correlation coefficients, those with no responses in one of the five response categories and those with low item-total correlation.

The TPQ was shown to have acceptable levels of test-retest reliability and inter-item consistency (standardized item alpha = 0.82675). The 16-item CTPQ was likewise developed by a panel of experts, was considered to have face validity (Nunnally, 1967), and was shown to have a standardized item alpha = 0.69956. Considered separately, the TPQ and CTPQ were valid and reliable instruments. However, their correlation (Pearson Correlation Coefficient = 0.150) was low, thus

raising doubt about the usefulness of combining them into one score, the TPI. Therefore, these measures of true play characteristics were examined separately and in combination while searching for significant relationships among the various subgroup categories.

The tests were administered in a standardized manner to all subjects. The statistical analysis of the data used the Statistical Package for the Social Sciences: Update 7-9 program at U.O.P. in determining an analysis of variance (ANOVA) for all groups and subgroups. In cases where a significant F ratio was found, the Scheffe post hoc test was used. The level of significance for all statistical procedures was set at .05.

Hypothesis one stated that there would be no significant difference for mean scores on the TPI, CTPQ or TPQ between team sport players and individual sport players. The F ratio required for significance was $\geq$ 4.036. As a result of the F ratios of 0.488 on the TPI, 0.025 on the CTPQ, and 1.184 on the TPQ, the hypothesis was accepted.

Hypothesis two stated that female athletes would have significantly higher mean scores on the TPI, CTPQ, and/or TPQ than would male athletes. The F ratio

required for significance was $\geq$ 4.036. The ratios were 4.039 on the TPI, 0.034 on the the CTPQ, and 7.245 on the TPQ. The TPI and the TPQ both had significant F ratios (refer to Table 1) and the mean score for female athletes was higher than for male athletes on the TPI and TPQ. Therefore, the hypothesis was accepted.

Hypothesis three stated that the star group of athletes would have significantly higher mean scores on the TPI, CTPQ, and/or TPQ than would the regular group and the substitute group. The F ratio required for significance was $\geq$ 3.190. The F ratios were 8.259 on the TPI, 6.241 on the CTPQ, and 3.382 on the TPQ. The star group was significantly higher than either the regular or substitute groups on the TPI and CTPQ; on the TPQ the star group was significantly higher than only the substitute group. Therefore, the hypothesis was accepted.

Hypothesis four stated that the men's golf team would have significantly higher mean scores on the TPI, CTPQ, and/or TPQ than the other teams (men's basketball, men's tennis, women's tennis, women's basketball, and women's volleyball). The F ratio required for significance was $\geq$ 2.422. The F ratios were 0.841 on the TPI, 0.704 on the CTPQ, and 2.502 on the TPQ.

Although there was a significant F ratio on the TPQ, the Scheffe multiple range test, which was administered post hoc, determined that there was no significant difference. In fact the trend indicated that the golf team rated the lowest of all the teams tested. Therefore, the hypothesis was rejected.

Hypothesis five stated that when grouping all the subjects by sport (i.e., golf, tennis, basketball, and volleyball) without regard to sex, golf would have significantly higher mean scores on the TPI, CTPQ, and/or TPQ than the three other sports. The F ratio required for significance was $\geq$ 2.804. The F ratios were 0.929 on the TPI, 0.852 on the CTPQ, and 3.930 on the TPQ. A significant difference was found on the TPQ between the sports of volleyball and golf, with volleyball scoring higher. Therefore, the hypothesis was rejected.

Conclusions

Based on the results of the study, and limited to the six intercollegiate teams at the University of the Pacific who were subjects in the study, the following conclusions seem justified:

1) No significant difference in degree of true play characteristics exists between team sport players

and individual sport players.

2) Female athletes have a significantly greater degree of true play characteristics than male athletes.

3) Star athletes have a significantly greater degree of true play characteristics than regular or substitute athletes.

4) No significant difference in degree of true play characteristics exists among the teams tested.

5) Volleyball athletes have a significantly greater degree of true play characteristics than golf athletes.

Discussion

Review of the literature and the results of the study brought up several items of interest for discussion.

The literature, in comparing team to individual sport players, was divided on whether significant differences existed on personality factors. But Albaugh (1979) found no significant difference between those two groups when examining openness to unusual experiences in athletes, a measure more closely related to true play than personality factors. Therefore, the experimental hypothesis followed Albaugh's (1979) lead.

Apparently, true play characteristics were

acquired, or not acquired, regardless of the nature of the sport (team or individual). Accounts in the literature of altered states of consciousness occur more readily in individual sports than in team sports. The results of this study indicated that true play consisted of much more than just an athlete's experiences with altered states of consciousness in sport. Several other factors were involved, thus balancing out the strength of altered states of consciousness in individual sports over team sports.

The literature that compared female to male athletes found differences in terms of attitudes and/or personality traits. Women were found to have more intrinsic motivation (Lefebvre, 1979), showed a higher need to perform well and enjoy the performance (Lefebvre, 1979; Kidd and Woodman, 1975), were found to be more self-actualizing (Gundersheim, 1982), scored higher in sportsmanship (Smith, 1978), and were less oriented toward victory than were the men studied (Sage, 1980; Kidd and Woodman, 1975). All these characteristics related closely to the true play characteristics investigated by this study. Therefore, it was hypothesized that women would rate higher in true player characteristics.

The differences between males and females may arise from a basic difference in their socialization toward sport (Michener, 1976). In the future, we may well see women's true play scores diminishing and becoming equal to men's as the emphasis on women's sports in America becomes more like the men's. However, it is suspected that the telling difference was uncovered by Gundersheim (1982) in discovering females, both in the general and the athletic populations, to be more self-actualizing than males. This construct of Maslow's (1954) is the top of a pyramidal continuum of personal development in which persons have satisfied the more basic personal and social needs towards actualizing their full potential as human beings. Much as the self-actualizer is the epitome of the fully developed person, the true player is the epitome of the fully developed player: one who has satisfied all the basic needs of playing, such as winning for recognition from peers or family, and now plays for the intrinsic reinforcers that play can offer.

The literature in comparing star, regular, and substitute athletes indicated that there were some differences among such athletic groupings (Teevan and Yalof, 1980; Dowd and Innes, 1981). Although Albaugh

(1979) found no significant differences, he definitely noted a trend differentiating levels of athletes. Thus the experimental hypothesis went with the research.

It was interesting to note that this was the only independent variable examined in this study in which the CTPQ showed a greater discrepancy in true play measurement than did the TPQ. Perhaps this was due to the fact that skill was an important criterion in the makeup of the true player and it was one that the coach quite likely saw as more important than did the athlete. However, the researcher would like to have seen if there was a difference in the results had the coach scored the athlete on true play behaviors before classifying him or her as a star, regular, or substitute. It is conceivable that classifying the athlete first may have prejudiced the coach's subsequent rating.

No study comparing separate teams was found in the literature. However, Albaugh (1979) found his class in Cosmic Forces in Sport more open to unusual experiences in sport than the other groupings. This suggested to the researcher the possibility that a viewpoint can be taught, or at least promoted, through exposure to it. Therefore, because true play philosophy was strongly espoused by the golf coach, it was hypothesized that his

team would exhibit greater true play attitudes and behaviors. Such was not the case.

No study comparing separate sports was found in the literature. However, again using the reasoning that a viewpoint (e.g., true play) could be taught or promoted by the coach, golf was hypothesized to be significantly ahead of the other sports tested in true play characteristics. Again, such was not the case.

These results suggested that viewpoints, such as true play, cannot be successfully taught. However, it was much more likely that the golf coach either had not had ample opportunity to espouse his true play philosophy, or that he had a group of players who were not open to unusual experiences or philosophies in sport.

Another explanation for the difference between golf and volleyball can be found by examining the sport of volleyball and how it compares in regard to the ANOVA results for all the independent variables. The two independent variables which demonstrated the most significant results were stars versus regulars and subs, and females versus males. For this hypothesis the sport of volleyball was entirely represented by women, while all other sports had some males and some females, except

golf, which had totally males. Therefore, volleyball's mean score had no male scores to bring it down. The volleyball team was a national power, while the other sports were not as strong. Because volleyball had a larger percentage of high level performers on their roster than did all the other sports, they naturally reaped the benefits of having more star scores to pull up their mean true play scores and fewer low level players' scores to pull it down.

While the teams were grouped by sport to help negate sex-related differences, these results may simply reinforce those differences, since the two sports of single-sex makeup were the only two with significant differences. It would be interesting to test this sport hypothesis more fully by finding universities whose programs include men's and women's volleyball teams, and men's and women's golf teams, that could then be combined into the sports of volleyball and golf for two-sex representation and further study.

Comparisons of the TPI, CTPQ, and TPQ on the independent variable of female versus male athletes showed an interesting trend that occurred with great regularity in the analysis of the data. There was a wide difference in the F ratio produced between the CTPQ

and the TPQ, with the CTPQ showing much less variance in true play characteristics for the same population. There are a number of explanations for this large discrepancy between the two instruments:

1) The two had a low Pearson correlation coefficient of 0.150. Thus, because they didn't highly correlate with each other, their scores should not be expected to either.

2) The instruments were designed for two different measures: the CTPQ to measure true play behaviors as perceived by the coach, and the TPQ to measure true play attitudes as perceived by athletes. Attitude is a subjective concept measurable through self-reporting questionnaires. Behavior is an objective measure and is the manifestation of numerous variables only one of which is an attitude. Thus an athlete with a true play attitude based upon results of the TPQ may not consistently behave as a true player.

3) Coaches may not have been knowledgeable in identifying true play behavior characteristics.

4) Coaches and their players may not view events the same. Albaugh (1970) found that coaches did not clearly identify personality traits of players if those traits were weak or absent in the coach. Rejeski, Rae

and McCook (1981) found a definite gap existing between coach and player in how they perceived sport outcomes. If the outcome of a game or personality traits can be perceived differently by coach and player, it is easy to understand how an abstract construct such as true play can be measured differently.

Recommendations

The researcher has the following recommendations to make for further study in the area of true play:

1) The correlation between the CTPQ and the TPQ should be improved to allow for more accurate or fitting comparisons of their results.

2) Coaches should be more thoroughly educated in the characteristics that make up a true player. This could take the form of reading selected literature, or more indepth discussions with an expert.

3) Interviews should be conducted with players who scored high on any of the three measurements (TPI, CTPQ, and TPQ). Also their coaches should be interviewed to gain further insight into what makes a true player so that the instruments can be refined to more accurately measure true play characteristics.

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Appendix A

PLAYER QUESTIONNAIRE

DIRECTIONS:

1. Read each of the following statements carefully.
2. For each statement, circle the number on the score sheet that you feel honestly describes you when you are involved in your main sport.

. . . . . .

1. In a game, I become aware of my body movements.
2. While playing a game, I have the feeling of working with, rather than against my opponent.
3. To me, winning the game is the most important aspect of the contest.
4. I compete to have people think better of me.
5. Regardless of how well I play, I am happy if I win.
6. When I win, I have feelings of superiority toward my opponent.
7. When I am playing in a game, I think about how the media and/or spectators will judge my performance.
8. In close sport competition, I easily become anxious and tight.
9. I play better in practice than in regular games.
10. I find it easy to tune into various signals from my body such as: overtightness of muscle; sudden

changes in strength, the flow of my blood.

11. In a game, I am motivated to play my best by hating my opponent.
12. When I lose decisively, I am humiliated.
13. When competing I have to think of basic mechanics.
14. I will consider breaking the rules, even slightly, if it well help me win the game.
15. I compete to prove myself to others.
16. Practice is a waste of my time.
17. Outwardly, I act similarly whether I win or lose.
18. There is some doubt in my mind that the rules of the game are to be followed strictly.
19. I would rather play a weaker opponent I can easily defeat than a stronger one who will surely beat me.
20. Inwardly, I feel much differently following a win than following a loss.
21. If I feel my opponent is breaking the rules of the game, I will do likewise.
22. I feel it is alright to break the rules of the game as long as I am not caught.
23. I play to prove I am better than my opponent.

Appendix B

COACH'S EVALUATION OF PLAYER

This study is investigating the behavior of athletes in their specific sport environment. Coaches are the best observers of this behavior.

DIRECTIONS:

1) Read each of the following statements carefully.
2) On the accompanying score sheet circle the number that you feel most honestly describes the behavior of each athlete in your specific sport environment.

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1. This player performs better in close contests than in one-sided contests.
2. This player has difficulty acquiring new skills rapidly.
3. At all times in every game, this player gives everything he/she has to win.
4. This player exhibits good concentration in games.
5. This player is motivated to perform by a need to prove him/herself to media, coaches, peers and/or parents.
6. This player gives quality effort to perfecting his/her skills in practice.

7. This player is motivated to play better through a hatred of the opponent.
8. In games and practices, this player shows unusual awareness of how his/her body is moving; being able to recognize correct movements and change movements that are incorrect.
9. In a game this player has to concentrate on the execution of his/her skills, he/she cannot just let them happen. He/she is a mechanical rather than a natural player.
10. In practice and games, this player is self-motivated to perform at or near his/her potential.
11. This player can easily imitate movements of others.
12. This player maintains an emotional evenness whether he/she won or lost the game.
13. In practice this player is concerned with being the hardest worker.
14. This player's drive to excel comes from a need to be as good as he/she can be.
15. This player is thrilled by the opportunity to compete with opponents that are of equal or better abililty.
16. This player has unquestionable integrity when it comes to playing by the rules.

Appendix C

SCORE SHEET FOR PLAYER QUESTIONNAIRE

NAME_____ DATE_____

MAIN SPORT_____ SEX ( )FEMALE ( )MALE

BIRTHDATE_____ _____ _____ YEAR IN SCHOOL_____

MAJOR_____

DIRECTIONS: PLEASE ANSWER ALL QUESTIONS ACCORDING TO THE FOLLOWING SCALE:

1	2	3	4	5
never		half the time		always

1.	1	2	3	4	5	13.	1	2	3	4	5
2.	1	2	3	4	5	14.	1	2	3	4	5
3.	1	2	3	4	5	15.	1	2	3	4	5
4.	1	2	3	4	5	16.	1	2	3	4	5
5.	1	2	3	4	5	17.	1	2	3	4	5
6.	1	2	3	4	5	18.	1	2	3	4	5
7.	1	2	3	4	5	19.	1	2	3	4	5
8.	1	2	3	4	5	20.	1	2	3	4	5
9.	1	2	3	4	5	21.	1	2	3	4	5
10.	1	2	3	4	5	22.	1	2	3	4	5
11.	1	2	3	4	5	23.	1	2	3	4	5
12.	1	2	3	4	5						

Appendix D

SCORE SHEET FOR COACH'S EVALUATION

COACH'S NAME_____ DATE_____

ATHLETE'S NAME_____ MAIN SPORT_____

DIRECTIONS: PLEASE ANSWER ALL QUESTIONS ACCORDING TO THE FOLLOWING SCALE:

1	2	3	4	5
I	I	I	I	
never		half the time		always

1.	1	2	3	4	5	9.	1	2	3	4	5
2.	1	2	3	4	5	10.	1	2	3	4	5
3.	1	2	3	4	5	11.	1	2	3	4	5
4.	1	2	3	4	5	12.	1	2	3	4	5
5.	1	2	3	4	5	13.	1	2	3	4	5
6.	1	2	3	4	5	14.	1	2	3	4	5
7.	1	2	3	4	5	15.	1	2	3	4	5
8.	1	2	3	4	5	16.	1	2	3	4	5

Appendix E

ANOVA Results Between Team and Individual Sport Athletes[a]

	Mean Scores		Sum of Squares			Mean Squares		F ratio[b]	F probability
	Team Sports	Individual Sports	Between Groups	Within Groups	Total	Between Groups	Within Groups		
TPI	134.81	132.52	66.42	6944.11	7010.53	66.42	136.16	0.488	0.4881
CTPQ	56.09	56.38	1.05	2165.67	2166.72	1.05	42.46	0.025	0.8759
TPQ	78.72	76.14	84.13	3623.04	3707.17	84.13	71.04	1.184	0.2816

Note.

[a]The degrees of freedom for the TPI, CTPQ, and TPQ were: between groups = 1, within groups = 51, and total = 52.

[b]The F ratio required for one and 51 degrees of freedom at the .05 level was 4.036.

Appendix F

ANOVA Results Among the Teams of Men's Golf, Men's Basketball, Men'sTennis, Women's Tennis, Women's Basketball, and Women's Volleyball[a]

	Mean Scores						Sum of Squares			Mean Squares		F ratio[b]	F probability
	Men's Golf	Men's Basketball	Men's Tennis	Women's Tennis	Women's Basketball	Women's Volleyball	Between Groups	Within Groups	Total	Between Groups	Within Groups		
TPI	128.88	131.25	132.17	137.00	136.00	137.90	575.67	6434.86	7010.53	115.13	136.91	0.841	0.5276
CTPQ	56.13	56.17	55.67	57.29	58.70	53.40	150.91	2015.80	2166.72	30.18	42.89	0.704	0.6235
TPQ	72.75	75.08	76.50	79.71	77.30	84.50	779.22	2927.95	3707.17	155.84	62.30	2.502	0.0434

Note.

[a]The degrees of freedom for the TPI, CTPQ, and TPQ were: between groups = 5, within groups = 47, and total = 52.

[b]The F ratio required for five and 47 degrees of freedom at the .05 level was 2.422.