TYPE A BEHAVIOR PATTERN: ITS RELATIONSHIP TO THE
HOLLAND TYPES AND THE CAREER CHOICE PROCESS

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By

Kyle Thomas Martin, M.S.
Denton, Texas
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The primary purpose of this study was to investigate the relationship of the Type A behavior pattern to Holland's occupational types and the career choice process. The Type A behavior pattern is characterized by high levels of achievement striving, time urgency, chronic activation and hostility, and is an independent risk factor in the development of coronary heart disease. It was hypothesized that Type A college students would be more attracted than Type B individuals to aspects of a future work environment which would reinforce their Type A behaviors.

Previous research had suggested a relationship between the Type A behavior pattern and Holland's Enterprising and Investigative types (Martin, 1986). This study sought to replicate those findings, and further examine the nature of the Type A/B-Holland types relationship.

Data were collected from undergraduate students in a variety of academic fields of study. Subjects completed a questionnaire packet consisting of the student version of the Jenkins Activity Survey (Jenkins, Rosenman, and Zyzanski, 1965; Glass, 1977), the Vocational Preference Inventory (Holland, 1985b), and a modified version of the Minnesota Job Description Questionnaire (Rosen, et al.,
The findings demonstrated that the Type A/B pattern is a significant factor in the career choice process. Type A’s and Type B’s had different levels of attraction to several aspects of a work environment in anticipating a career choice. The study also revealed that Type A/B pattern and the Holland types play separate roles in the career choice process. Implications of the study and future research directions are discussed.
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TABLE OF CONTENTS

LIST OF TABLES ......................... vi
LIST OF ILLUSTRATIONS................... vii

TYPE A BEHAVIOR PATTERN: ITS RELATIONSHIP TO THE HOLLAND TYPES AND THE CAREER CHOICE PROCESS

Chapter

I. INTRODUCTION ......................... 1

The Type A Behavior Pattern: Current Perspectives
The Vocational Choice Process
Holland's Vocational Choice Theory
Statement of Problem and Purpose of Study
Hypotheses

II. METHOD ............................. 36

Subjects
Procedure
Instruments
  Jenkins Activity Survey
  Vocational Preference Inventory
  Minnesota Job Description Questionnaire
  Research Design

III. RESULTS ............................ 42

Description of the Sample
Major Findings
  Three-way Multivariate Analysis of Variance
  Type A and B Differences
  Gender Differences and Gender by Type A/B Interaction
  Chi Square and Correlational Analyses of Type A/B Pattern and the Holland Types
IV. DISCUSSION .......................... 65

Major Findings of the Study
Type A and B Differences
Holland Type Differences
Gender Differences
The Relationship of Type A/B Pattern and Holland Types
Implications of the Study
Limitations of the Study
Future Directions for Research

APPENDIX ......................... 97

REFERENCES ...................... 121
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Occupational Reinforcer Dimensions</td>
<td>24</td>
</tr>
<tr>
<td>2.</td>
<td>Multivariate Analysis of Variance Main and Interaction Effects for Three-way Design</td>
<td>46</td>
</tr>
<tr>
<td>3.</td>
<td>Analysis of Variance Main Effects for Type A's Versus Type B's Along Each OR Dimension</td>
<td>48</td>
</tr>
<tr>
<td>4.</td>
<td>Analysis of Variance Main Effects for Males Versus Females Along Each OR Dimension</td>
<td>51</td>
</tr>
<tr>
<td>5.</td>
<td>Analysis of Variance Interaction Effects of Type A/B Classification with Gender</td>
<td>53</td>
</tr>
<tr>
<td>6.</td>
<td>Rankings of OR Dimensions for Type A/B Groups</td>
<td>56</td>
</tr>
<tr>
<td>7.</td>
<td>Breakdown of Sample by Type A/B and Holland Type Classification</td>
<td>58</td>
</tr>
<tr>
<td>8.</td>
<td>Correlation Matrix for Type A/B Scores with Holland Scores</td>
<td>59</td>
</tr>
<tr>
<td>9.</td>
<td>Correlation Matrix for Type A/B Scores and Holland Scores with OR Dimension Scores</td>
<td>61</td>
</tr>
<tr>
<td>10.</td>
<td>Intercorrelations of Occupational Reinforcer (OR) Dimension Rating Scores</td>
<td>62-63</td>
</tr>
</tbody>
</table>
**LIST OF ILLUSTRATIONS**

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ranking Profile of 21 OR Dimensions for Type A and Type B Groups</td>
<td>49</td>
</tr>
<tr>
<td>2.</td>
<td>Plot of Mean Scores on Supervision-Human Relations Dimension for Type A/B Groups and Males and Females</td>
<td>54</td>
</tr>
<tr>
<td>3.</td>
<td>Ranking Profile of 21 OR Dimensions for Males and Females</td>
<td>55</td>
</tr>
</tbody>
</table>
CHAPTER I

TYPE A BEHAVIOR PATTERN: ITS RELATIONSHIP TO THE HOLLAND TYPES AND THE CAREER CHOICE PROCESS

The Type A behavior pattern has been described by Friedman and Rosenman (1974) as an incessant struggle by an individual to accomplish as much as possible in the least amount of time, even against the opposing forces of other things or other people. Type A individuals are characterized by such attributes as aggressiveness and hostility, unbridled ambition, competitiveness, high needs for achievement, impatience, time urgency, and multiphasic functioning (doing more than one thing at a time). Type B persons demonstrate the opposite behaviors of being relaxed, rarely harassed, and pursuing leisure activities (Friedman & Rosenman, 1974; Glass, 1977; Price & Clarke, 1978; Gastorf, 1980; Tang, 1986). The Type A behavior pattern has been the focus of a growing research interest which has investigated its relation to coronary heart disease (see Matteson & Ivanevich, 1980; Wright, 1988, for reviews).

A significant area of the Type A research has identified various work related behaviors linked with the Type A pattern. High levels of stress associated with work load have been related to the Type A pattern (Caplan & Jones, 1975). Jenkins (1975) reported Type A individuals
reported working longer hours, taking work home, skipping vacations, and in general setting high productivity standards for themselves. Howard, Cunningham, and Rechnitzer (1976) found Type A's (as compared to B's) reported higher work loads, longer work hours, and more travel days per year for business purposes. Similar findings of high achievement striving and competitiveness in work related activities have been demonstrated in a variety of studies (Shekelle, Schoenberge, & Stamler, 1976; Carver, Coleman, & Glass, 1975; Burnam, Pennemaker, & Glass, 1975).

Although the work related behaviors associated with Type A pattern have received some research investigation, the Type A literature has paid little attention to addressing the role of Type A behavior in the career choice process. In addition, the vocational choice theorists have stated that attitudinal and behavior patterns influence vocational aspirations and career choice (Holland & Gottfredson, 1976); yet the Type A behavior pattern has not been seriously considered as an important contributor in the career choice process.

The focus of this study was to bridge this gap by exploring whether the Type A pattern is a significant factor in the career choice process, and whether the Type A construct overlaps with a theory of vocational choice, such as Holland's theory of occupational personality and
environmental types (Holland, 1985a). Specifically, this study first sought to identify reinforcers in the work environment which were differentially attractive to Type A and Type B individuals in anticipating their career choices. Second, this study explored the relationship between the Type A pattern and the Holland types, and looked at the interaction of the two sets of variables in the career choice process.

It is important to note that even though the literature dichotomies individuals as either Type A’s or Type B’s, the distribution of the behavior pattern is not a true dichotomy but a continuum of characteristics where even extreme types possess aspects of the opposite type (Friedman & Rosenman, 1974; Glass, 1977). Therefore, it is useful and convenient to identify people as Type A’s and Type B’s, although it is not a true representation.

The Type A Behavior Pattern: Current Perspectives

In a number of publications, Friedman, Rosenman, and others have identified a behavior pattern found to be significantly related to coronary heart disease known as the Type A behavior pattern (Friedman & Rosenman, 1974; Rosenman, 1974; Rosenman, Friedman, Straus, Wurm, Kositchek, Hahn, & Werthessen, 1964). Type A persons have higher incidence of risk symptoms than Type B persons and are two to four times more likely to die prematurely from coronary
heart disease as Type B's (Friedman & Rosenman, 1974; Glass, 1977; Jenkins, Rosenman, & Zyzanski, 1974). A large amount
of research has been devoted to examining the
epidemiological and physiological evidence for Type A
pattern as an independent risk factor in the development of
heart disease (see Cooper, Detre, & Weiss, 1981; Matteson &
Ivanevich, 1980, for reviews). In addition, Type A pattern
has been associated with other health complaints such as
headaches, indigestion, loss of appetite, and depression
(Matteson & Ivanevich, 1982).

However, the definition of the critical components of
Type A behavior pattern and its relationship to coronary
heart disease (CHD) have recently become controversial, due
to the number of studies which have reexamined earlier
definitions of the Type A pattern and challenged the
findings of a significant relationship with CHD (Booth-
Kewley & Friedman, 1987; Dimsdale, Hackett, Hutter, & Block,
1980). Some research has identified a core subset of the
Type A traits that are proposed to be largely responsible
for the coronary prone risk (Matthews, 1982; Watkins, 1986).
A recent article by Wright (1988) has raised the issue of
the cloudiness surrounding the definition of the Type A
pattern, and Wright has proposed a subset involving time
urgency, chronic activation, and anger to be the critical
components of the Type A pattern associated with coronary
heart disease. Although the research literature is breaking new ground in clarifying these issues, it appears that the questions being raised about the critical components of the Type A behavior pattern are just beginning to be addressed.

The developmental course of the Type A behavior pattern has received little investigation and has received mixed speculation. A recent study of the development of the Type A behavior pattern has defined a triad involving (a) an early need to achieve (meaning competitive success), (b) early success and therefore reinforcement for striving efforts; and (c) exposure to time that provided a personal blueprint for achieving more by efficient use of time and chronic activation, all of which appeared in situations where self-esteem was lacking (Wright, 1988). Although some research has stated that Type A tendencies develop in a linear fashion from childhood to adulthood (Matthew & Jennings, 1984; Matthews & Volkin, 1981), more recent longitudinal research suggests that Type A behavior begins in adolescence or early adulthood as a compensation for essentially non-Type A experiences that had existed earlier (Steinberger, 1986). Additional research focusing on the developmental aspects of Type A behavior is needed further to clarify these issues.

Along with looking at the individual’s development of Type A behavior, Friedman and Rosenman (1974) have
speculated that the Type A pattern does not stem solely from an individual's personality, but often emerges when certain environmental conditions arise which elicit a particular response or complex of responses in susceptible individuals. Others have noted that our contemporary Western environment has in many ways encouraged the increasing prevalence of the Type A behavior pattern (Howard, Cunningham, & Rechnitzer, 1977). Therefore, while it is unclear exactly at what periods in life the Type A behavior develops, it has been suggested that Type A behavior often emerges when preexisting personality traits are elicited and reinforced by corresponding environmental conditions.

One of the most common environmental settings which plays a role in eliciting Type A behavior is the work environment. For example, a study by Howard et al., (1977) identified several work environmental conditions which differentiated Type A from Type B individuals and elicited Type A behavior: supervisory responsibility for people, feelings of competition in the job, excessive workloads, and conflicting demands.

Although it has been proposed that certain aspects of a work environment often elicit and reinforce Type A behavior, it is presently unclear whether people select jobs based on their Type A characteristics, or are influenced to become Type A after they are working in the job. Little attention
has been paid to the process of making a career choice, and whether the Type A/B aspects of a job are important factors in this decision. It is the purpose of this study to address this issue. In order better to understand the Type A behavior pattern, its major characteristics will be discussed, particularly those which are commonly manifested in the work environment.

Major Characteristics of the Type A Pattern

Two components of the Type A behavior pattern which are commonly displayed in the work environment are high striving for achievement and competitiveness (Shekelle et al., 1976; Carver et al., 1976). Many studies have focused on the striving and persistence associated with the Type A pattern. For example, Snyder and Glass (1974) found that Type A persons suppress fatigue and persist at a task despite feelings of exhaustion. Burnam, Pennebaker, and Glass (1975) found that Type A individuals work on a task at near maximum capacity, regardless of the presence or absence of a deadline, and underestimate the passage of time compared to Type B individuals.

The Type A person's sense of time urgency, impatience, and hostility that are often manifested in task situations have been supported in many studies. For example, Frankenhauser, Lunberg, and Forsman (1980) reported that Type A's were less able to cope with inactivity than Type
B's in a work setting. In addition, Gastorf (1980) found that Type A persons were more likely to show up early to a task than Type B persons. In a study by Glass, Snyder, and Hollis (1974), Type A's performed more poorly on a task requiring a low rate of activity than Type B's. The Type A subjects became irritated and impatient when slowed down by another person in a cooperative decision-making task, and reacted with increased aggressiveness to a confederate's provocation. Similarly, Carver and Glass (1978) found small to medium levels of frustration which led to aggressiveness among Type A persons, whereas other researchers (Chesney & Rosenman, 1985; Dembroski & Williams, in press; Williams, 1984; Williams, Haney, Lee, Kong, Blumenthal, & Whalen, 1980) have shown anger and hostility were a major component of the Type A pattern. These qualities of being hard-driving, achievement oriented, competitive, time urgent, impatient, and aggressive mark the pattern of a Type A individual's behavior in work situations.

In addition to this cluster of behaviors which Type A persons display in work settings, there are physical appearance traits associated with the behaviors. These physical qualities of Type A individuals, described in the research by Friedman, Hall, and Harris (1984) include: (a) frequent straining type of facial grimace, even during minimal exertion; (b) dramatic or forceful movements while
conducting simple tasks; (c) forceful speech style, both in volume and content; (d) rapid eating; (e) hyperalertness; (f) short response latencies; (g) frequent breathy sighs; (h) repetitive or fidgety movements of the feet, fingers, or jaw; (i) an intense look with inhibited smile or laugh; and (j) a wide-eyed look or protruding cornea. These physical tendencies were attributed as overt manifestations of the underlying anger or hostility aspect of the Type A pattern (Friedman & Ulmer, 1984).

Other investigators have found Type A’s to be inappropriately controlling of others in work situations, where they assumed more than their share of decision-making responsibility (Bussman, Friedman, Walker, Heston, & Wright, 1987). Glass (1977) explained that Type A persons’ attempts to exert control over environmental demands and requirements was due to the fear of failure and loss of esteem. Pittner & Houston (1980) supported this notion by demonstrating that Type A’s had higher pulse rates when confronted by threats to their self-esteem than Type B’s. Further studies have concluded that Type A individuals perceived work loads as more stressful than Type B individuals (Suls, Gastorf, & Witenberg, 1979; Caplan & Jones, 1975), and attempted to gain control by increasing the pace of their activities (Krantz, Glass, & Snyder, 1974). Thus, the combination of perceived excessive workloads and high demands in a work
environment and the consequent stress and loss of self-esteem are significant predictors of a Type A response.

However, research by Jenkins, Zyzanski, Ryan, Fleasas, and Tannenbaum, (1977) has pointed out that work is the primary source of life rewards for Type A's, versus their socializing with people. Other investigators have similarly proposed that Type A's experienced more life satisfaction from work achievement than from interpersonal relationships (Zyzanski, Wrzesniewski, & Jenkins, 1977). This emphasis on work as the major life reward appears to be reflected in lower satisfaction of interpersonal relationships for Type A's than Type B's. Several studies indicate that Type A individuals were more likely to report dissatisfaction in their marriages (as are their spouses) than Type B individuals (Burke & Weir, 1980; Burke, Weir, & DuWors Jr., 1979) and in general, were less successful in opposite sex and social relationships than Type B's (Waldron et al., 1980). Even though Type A persons live a daily existence which appears to be more depressed and less satisfied than do Type B persons, Type A's were more resistant to changing their behavior and becoming more like Type B's (Booth-Kewley & Friedman, 1987; Friedman, Thoreson, & Gill, 1981; Scherwitz, Granditz, Graham, Buehler, & Billey, 1986).

One final comprehensive study (Howard et al., 1977) looked at three components of the Type A pattern: (a)
emphasis on work involvement, (b) level of job satisfaction, and (c) the qualities of a work setting which elicit and reinforce Type A behaviors. First, the findings revealed that Type A individuals put in the longest work week, worked more discretionary hours per week, and travelled out of the city more days per year than Type B individuals. Secondly, Howard, et al. determined no significant difference between Type A’s and Type B’s for five measures of job satisfaction: Work, Supervision, Pay, Promotion, and Co-workers. Although mean differences for total job satisfaction were not significant, there was a slight indication that Type A’s were less satisfied with their jobs than Type B’s. The authors also noted that Type A’s perceived being less locked in to a job situation than Type B’s, which was reflective of Type A’s feelings of confidence in their abilities.

A third significant finding by Howard et al., (1977) was that certain job conditions differentiated Type A from Type B individuals and were the most important in eliciting Type A behavior. Those work conditions were identified as: supervisory responsibility for people, feelings of competition in the job, excessive workloads, and conflicting demands. Another study by Burke and Deszca (1982) indicated that the Type A behavior pattern was associated with organizational climates characterized by high performance standards, spontaneity, ambiguity, and toughness. Those
studies confirmed earlier suggestions that Type A individuals not only exhibited certain behaviors in their jobs, but that certain conditions in the work environment elicited and reinforced those Type A behaviors.

In summary of the research reviewed here, the Type A literature reported that the Type A behavior pattern is a cluster of characteristic behaviors which are displayed by individuals and are elicited and reinforced by corresponding environmental conditions. Although the Type A pattern is demonstrated in all life situations, it is commonly associated with work related behavior and demonstrated in job settings. Type A individuals are viewed as hard-driving, extremely ambitious, competitive, impatient, time urgent and aggressive in nature. Work is the primary source of importance to Type A persons, such that they place significant emphasis on their work and are reinforced by the environment for their Type A behavior. Type A individuals also tend to feel more stress, and work longer hours and more days per year than Type B individuals.

Although much notice has been paid to work related behaviors associated with the Type A behavior pattern, little research has explored how the Type A pattern influences the career choice process. A large amount of research has studied behaviors of Type A individuals once they are in a job, but little research has focused on the
process of making a career choice for these Type A individuals. Specifically, it is presently unclear how the Type A person chooses a career, and whether specific Type A aspects of a work environment influence a Type A person's job selection. Since the vocational choice process is a multi-faceted process with many factors that play a role in career decisions, it is necessary to review the vocational choice literature before speculating on the role of the Type A pattern in the career choice process.

The Vocational Choice Process

The process of making vocational choices is commonly espoused to be a matching process between the individual's personality characteristics and a job suitable to these qualities. Holland (1985a) stated that people "search for work environments that will let them exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles" (p.4). In a similar manner, Super (1983) asserted that individuals "search for occupations that will lead to the satisfying expression of their self-concept" (p.20).

Although most matching models are simple in theorizing vocational choice as a fit between individual and work environment aspects, the variables involved are many and have been the focus of a wide variety of research (Spokane, 1985; Collin & Young, 1986; Spokane 1987). Among the many
characteristics of the individual influencing the career choice process that have been proposed are personality and self-concept (Holland, 1985a; Super, 1983), cognitive style (Goodenough et al., 1979), problem solving ability (Larson & Heppner, 1985), vocational maturity (Guthrie & Herman, 1982), personal work values (Krumboltz, 1982), gender and sex role ideology (Tremaine & Schau, 1979), and the effects of race, socioeconomic status, and education (Slaney, 1980).

Along with the individual's personal qualities, many aspects of the work environment have been found to influence the vocational choice process. Gottfredson and Becker (1981) reported that environmental contingencies such as the availability of particular jobs and training programs were better predictors than personal aspirations of the jobs of 1394 white males. Likewise, Salomone and Slaney (1981) stated that particular aspects of a job, such as job opportunities, influenced vocational decisions as well as the individual's interests, needs and abilities. Another study by Shapira (1981) considered salary level and the influence of company policy status as significant factors in the vocational choice process.

Another body of research has focused on the reinforcers of the work environment and their match with individuals' estimate of their interests, abilities, and talents. Burge (1983) reported that a person's perception of rewards in an
occupational field appropriate to one's interests and talents was a significant predictor of vocational choice. Other researchers have tested the expectancy model (Borgen, Weiss, Tinsley, Dawis, & Lofquist, 1968; Rosen, Hendel, Weiss, Dawis, & Lofquist, 1972; Dawis & Lofquist, 1984) and discovered that the significant predictor of vocational preference was the attractiveness of work reinforcers in the occupation, while predictors of the actual choice included the attractiveness of the occupation, expectation of success, and financial resources (Wheeler & Mahoney, 1981).

In summary, the literature on the vocational choice process supports the notion that both individual characteristics such as personality and self-concept variables, and environmental traits such as the attractiveness of work reinforcers and job conditions are influential in the career selection process. While several personality and environmental variables involved in the career choice process have been reviewed, there is one theory of vocational choice which has defined specific personality and environmental types and is well researched and comprehensive. Holland (1985a) has developed a matching model of personality and corresponding environmental types to explain the vocational choice process. Because of the extensiveness of Holland's theory and its relevance to the
Holland’s Theory of Vocational Choice

One of the most popular and widely researched vocational theories of the personality-environment match is Holland’s (1985a) theory of occupational topologies. In the theory, Holland classifies people and careers into six types, and asserts that vocational choice is a process of the individual seeking careers with corresponding characteristics. Holland’s (1973) notion of occupational personality stereotypes arose from his idea that members of an occupation have similar personalities and similar histories of personal development. Holland asserts that since members of an occupation have similar personalities, they will respond to many situations and problems in similar ways and create characteristic environments. From this notion, Holland (1962) proposed six personality and corresponding environmental types which he later identified as: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional types. These theoretical types represent personal lifestyles and patterns of relationship between the individual and the world.

The Realistic (R) type is characterized by aggressive behavior, interest in activities requiring motor coordination, skill, and physical strength. These people
prefer "acting out" problems; they avoid tasks involving interpersonal and verbal skills and seek concrete rather than abstract problem situations. They score high on traits such as concreteness, physical strength, and masculinity and low on social skill and sensitivity.

The Investigative (I) type's primary traits include thinking rather than acting, organizing and understanding rather than dominating or persuading, and associability rather than sociability. These people prefer to avoid close interpersonal contact, though the quality of their avoidance seems different from that of the Realistic person's. They are characterized as analytical, independent, precise, reserved, and scientifically inclined.

The Artistic (A) type prefers self-expressive, unsystematized activities that entail manipulation of materials to create art forms or products. They dislike explicitly structured and ordered activities and engage in preferred activities and competencies. They are introspective and asocial much like the Investigative type, but differ in that they are more feminine than masculine, show relatively little self-control, and express emotion more readily than most people. These types are described as independent, original, imaginative, unconventional, introverted, and expressive.
The Social (S) type seems to satisfy the need for attention through a teaching or therapeutic situation. In sharp contrast to the Investigative and Realistic types, Social people seek close relationships, while they avoid situations which require intellectual problem solving or physical skills. They have the attributes of sociability, cooperation, idealism, persuasiveness, understanding, insight, and friendliness.

The Enterprising (E) person is verbally skilled, but rather than use their verbal skills to support others as the Social types do, the Enterprising type uses them for persuading, manipulating and dominating people. Enterprising persons are concerned about power and status, as are the Conventional people, but differ in that they aspire to the power and status while the Conventional types honor others for it. Enterprising individuals have the qualities of ambition, leadership, sociability, dominance, and impulsiveness.

The Conventional (C) type is typified by a concern for rules and regulations, high self-control, subordination of personal needs, and strong identification with power and status. This kind of person prefers structure and order and seeks interpersonal and work situations where structure is readily available. These individuals are characterized as conforming, persistent, practical, dependent, and orderly.
Corresponding to these six personality types, Holland proposed six types of occupational environments: Realistic, Investigative, Social, Conventional, Enterprising, and Artistic. Each environment is dominated by individuals with the corresponding personality type and is typified by physical settings posing distinct problems and opportunities relevant for each type. For example, the Enterprising environment is dominated by Enterprising people where the largest percentage of the population of the Enterprising environment are classified as Enterprising types. Holland asserts that most people seek and are attracted to an environment which is conducive to their personality whereby they can exercise their abilities, express their attitudes and values, and pursue agreeable roles and responsibilities. Vocational satisfaction, stability, and achievement depend on the compatibility between individuals' personalities and their work environment, a relationship Holland has termed congruence.

Holland's theory proposes that some persons or environments are more clearly defined than others. For example, one person may closely resemble a single type and show little resemblance to other types, whereas another person may resemble aspects of many types. Holland terms this the level of differentiation. In addition, Holland asserts that relationships between types and environments
are ordered in a hexagon, so the shorter the distance between any two types, the greater their similarity or psychological resemblance. The order of the relationship of the types is R-I-A-S-E-C, where C is as close to the R-type as it is to the E-type.

Holland has revised and updated his theory over the years by writing numerous papers (Holland, Gottfredson, & Nafziger, 1975; Holland & Gottfredson, 1976), and has updated his book written on the theory (Holland, 1973; 1985a). His theory has gained empirical support from early on (Holland, 1962) when he found correlates for the personality types and continued follow-up studies (Holland, 1963; 1968; 1973; 1985a). Several researchers have tested Holland’s theory within the college student population (Osipow, Ashby, & Wall, 1966; DeVoge, 1975) whereas other investigators have studied the adult population (Andrews, 1973), lower socioeconomic groups (Cooper, 1977), and university and college faculty members (Smart, 1982).

The relationship between the six types has also been examined (Holland et al., 1969; Wakefield & Doughtie, 1973; Straham, 1987) and support for Holland’s hexagonal model has been established. Many studies have researched and shown strong support for Holland’s notion of congruence (Morrow, 1971; Southworth & Morningstar, 1970; Mount & Muchinsky, 1978; Spokane, 1985) and his prediction that individuals
choose occupations consistent with their personality type (Holland, 1963; Devoge, 1975; O’Neil, Magoon & Tracey, 1978).

Although Holland’s theory of personality types has been well tested and supported, the theory has a few limitations. One limitation is Holland’s theory of types has not been adapted over the years to incorporate new research information about other significant occupational characteristics, such as Type A aspects into his definition of the six types. It is unclear whether or not Holland’s theory would classify Type A characteristics into one type, as a combination of types, or as an independent seventh personality type.

Secondly, Holland’s hypotheses about environmental types have been less researched than his personality types, and have little empirical support. Holland (1973) originally proposed assessing occupational environments by using the Environmental Assessment Technique (EAT). The EAT classified an environment into one of the six types by assessing the vocational preferences of its population, and converting them to percentages. The problem with the EAT was that Holland classified work environments by the highest proportion of personality types of the individuals working in that job, rather than directly measuring the characteristics of the environment such as work activities,
training requirements, and rewards. However, it has been reported (personal communication, Psychological Assessment Resources, November 11, 1988) that a new Occupations Finder is being developed which will classify environments into types by directly measuring different aspects of jobs such as work activities, rewards, and reinforcers (Holland & Gottfredson, in press). This new system may more accurately define Holland's occupational types than the original EAT method.

Several studies have attempted to document the meaning of Holland's environmental types by comparing his topology with other major classifications of occupations. Viernstein (1972) provided evidence that Holland's six major categories of work require different levels of involvement with data, people, and things (U.S. Department of Labor, 1965). Mean fourth, fifth and sixth DOT (Dictionary of Occupational Titles) digit values were compared for 417 occupations. For example, involvement with things was higher for Realistic and Investigative types of jobs and lower for other types, whereas involvement with people was higher for Social and Enterprising occupations.

Toejnes and Borgen (1974) used work rewards and reinforcer characteristics to test Holland's model of occupational environments. In a continuing effort on the Work Adjustment Project (Dawis & Lofquist, 1984) at the
University of Minnesota, methods were developed for the measurement of the differential reward patterns for an occupation. Using the Occupations Finder, Rosen et al., (1972) grouped 148 diverse occupations into the Holland occupational classifications and compared them across 21 occupational reinforcer (OR) dimensions: ability utilization, achievement, activity, advancement, authority, company policies, compensation, co-workers, creativity, independence, moral values, recognition, responsibility, security, social service, social status, supervision-human relations, supervision-technical, variety, working conditions, and autonomy (see Table 1). Using an analysis of variance method, the Holland occupational types were differently related to 13 of the 21 OR dimensions (p < .001). The results of this study supported the notion that the Holland environmental types differ systematically in the reinforcers they provide.

A follow up study testing Holland's environmental formulations using occupational reinforcer dimensions was performed by Rounds, Shusbachs, Dawis, and Lofquist (1978). The authors pointed out that since each environmental model is characterized by different demands and opportunities that stimulate activities, foster competencies, encourage perceptions and reward values, then those characteristics should be empirically differentiated across the six types.
Table 1

**Occupational Reinforcer Dimensions**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Statement (Workers on this job...)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ability utilization</td>
<td>1. make use of their individual abilities.</td>
</tr>
<tr>
<td>2. Achievement</td>
<td>2. get a feeling of accomplishment.</td>
</tr>
<tr>
<td>3. Activity</td>
<td>3. are busy all the time.</td>
</tr>
<tr>
<td>4. Advancement</td>
<td>4. have opportunities for advancement.</td>
</tr>
<tr>
<td>5. Authority</td>
<td>5. tell other workers what to do.</td>
</tr>
<tr>
<td>6. Company policies</td>
<td>6. have a company which administers its and practices &amp; policies fairly.</td>
</tr>
<tr>
<td>7. Compensation</td>
<td>7. are paid well in comparison with other workers.</td>
</tr>
<tr>
<td>8. Co-workers</td>
<td>8. have co-workers who are easy to make friends with.</td>
</tr>
<tr>
<td>9. Creativity</td>
<td>9. try out their own ideas.</td>
</tr>
<tr>
<td>10. Independence</td>
<td>10. do their work alone.</td>
</tr>
<tr>
<td>11. Moral values</td>
<td>11. do their work without feeling its morally wrong.</td>
</tr>
<tr>
<td>12. Recognition</td>
<td>12. receive recognition for the work they do.</td>
</tr>
<tr>
<td>15. Social service</td>
<td>15. have work where they do things for other people.</td>
</tr>
<tr>
<td>16. Social status</td>
<td>16. have the position of &quot;somebody&quot; in the community.</td>
</tr>
<tr>
<td>17. Supervision—human relations</td>
<td>17. have bosses who back up their men (with top management).</td>
</tr>
<tr>
<td>18. Supervision—technical</td>
<td>18. have bosses who train their men well.</td>
</tr>
<tr>
<td>19. Variety</td>
<td>19. have something to do different every day.</td>
</tr>
<tr>
<td>20. Working conditions</td>
<td>20. have good working conditions.</td>
</tr>
</tbody>
</table>
Because of the lack of studies addressing Holland's environmental formulations using occupational rather than personality data and the availability of data on 33 additional occupations to Toenjes and Borgen's (1974) study, Rounds, et al. assessed the differences among the Holland environmental models using occupational reinforcers. Using data from the Minnesota Job Description Questionnaire (Rosen et al., 1972) available for the 181 occupations, the study demonstrated significant differences between the Holland environmental types on 17 of the 21 occupational reinforcer (OR) dimensions (p < .05). However, the results of this study provided contradictory evidence for Holland's hexagonal ordering of the environmental categories. Rounds, et al. pointed out that Holland's ordering of the environmental types based on the vocational preferences and interests of persons in that environment (RIASEC) differed from their results (RCSIAE or REAISC) based on environmental aspects using patterns of occupational reinforcers.

Gottfredson (1980) expanded the testing of Holland's environmental formulations by comparing them to five other systems for describing occupations: (a) occupational prestige (Temme, 1975); (b) involvement with data, people, and things presented in the Dictionary of Occupational Titles (DOT: U.S. Department of Labor, 1965); (c) self-direction (Kohn, 1969); (d) the 12 major census categories
(U.S. Bureau of the Census, 1971); and (e) the occupational reinforcer (OR) dimensions developed through the Minnesota Work Project (Rosen et al., 1972). The results revealed that Artistic work had the highest involvement with data, and Realistic and Conventional work had the least involvement with data. Involvement with people was highest in Social and Enterprising work and lowest in Realistic work. In contrast, involvement with things was absent in Social, Enterprising, and Conventional work, but was high in Realistic work. Self-direction was highest in Social and Enterprising work and lowest in Realistic work. Finally, the results of the study confirmed significant differences for the Holland environmental types and prestige level for the occupational reinforcer dimensions.

Gottfredson's (1980) study appears to be the most comprehensive study of Holland's environmental scheme, and supports the notion of variance in work activities (on which Holland's theory focuses) but also in job requirements and rewards (about which the theory has as yet little to say). Although Gottfredson's study and earlier investigations of environmental types only included a fraction of available job characteristics data, the study is a step toward exploring the domain of the work environment. Further studies addressing the work environment should continue to encompass many aspects such as job activities performed,
worker traits required, values and interests fostered, socioeconomic rewards available, and working conditions, as well as others. In summary, the vocational choice process is considered a matching of an individual’s personality characteristics with a job suitable to these qualities. Holland’s theory of vocational choice has defined six major classifications of personality types which correspond with six types of occupational environments. The literature indicates that the process of making a career decision occurs through the anticipation of reinforcing aspects of an occupation which are attractive to and correspond with the individual’s personality characteristics and vocational interests.

Statement of Problem and Purpose of Study

This paper has presented the research concerning Type A behavior and the career choice process. First, research about the work related aspects of Type A behavior was reviewed, followed by a discussion of reinforcing environmental characteristics demonstrated to elicit the Type A behavior pattern. However, it was pointed out that there has been little investigation of how Type A behavior influences the career choice process. Based on this, the vocational choice literature was reviewed, using Holland’s theory to explain the choice process of personality types being attracted to work environments with corresponding
characteristics. Research was discussed as to how work environment aspects were differentially attractive to the six Holland personality types. Finally, it was noted that although work environments are important in distinguishing career choices for different Holland types, there was no parallel research addressing how work settings might have different levels of attractiveness to Type A and Type B persons.

In light of the research reviewed on the Type A behavior pattern and vocational choice theory, several unaddressed areas for investigation remain. According to Holland's vocational theory, the career choice process is a matching of an individual's personality characteristics (interests, abilities, talents) with an environment that reinforces these same qualities. However, the research investigating Holland's person-environment model of career choice has focused only on certain traits defined by Holland in the six types. No research has addressed how work environments are differently attractive to individuals based on their Type A or Type B characteristics.

On the other hand, the Type A literature has stressed how the Type A pattern is strongly correlated to career related areas such as work adjustment, stress levels, and job satisfaction, yet the literature has never addressed whether the Type A pattern is a determining factor in the
career choice process. Although several studies have identified occupational reinforcers in a work environment such as compensation, opportunities for advancement, etc. (Rosen et al., 1972), few studies have addressed whether these aspects are differently attractive Type A and Type B individuals.

This study explored four research areas. The first area addressed work environment characteristics and their attractiveness to Type A and Type B individuals. The second area concerned the attractiveness of work environment aspects to the six different Holland occupational personality types. The third area focused on the relationship between the Type A behavior pattern and each of the Holland types. Finally, the fourth area addressed how the attractiveness of work environment characteristics varies when considering an individual's Type A/B and Holland type characteristics.

In looking at the first issue about the Type A pattern's role in the career choice process, an obvious question emerged: Are Type A individuals and Type B individuals attracted to different qualities of a future work environment which may reinforce their own Type A or Type B propensities and influence their career choice? If so, then this Type A/B person-environment attraction may be a significant factor in the vocational choice process.
For this study, the occupational reinforcer (OR) dimensions developed by the Minnesota Work Project, and used for identifying different traits of the work environment and their attractiveness to individuals, were adapted to address the research question (Borgen et al., 1968; Rosen et al., 1972; Rounds et al., 1978), (see Table 1, p. 24). On the basis of research about the characteristics of the Type A behavior pattern, several of the OR dimensions were expected to reinforce different aspects of the Type A pattern.

A second research question asked whether the different Holland personality types (Investigative, Artistic, Social, Enterprising, and Conventional) were attracted to certain aspects of a work environment which reinforces their unique personality characteristics and may influence their career choice. Previous research had confirmed this notion (Toejnes & Borgen, 1974; Rounds et al., 1978; Gottfredson, 1980), and it was of interest to determine whether those findings would be replicated with a student sample anticipating an upcoming career choice. On the basis of research describing the Holland types, several of the OR dimensions were expected to be differently attractive to the Holland types.

The third research question addressed whether the Type A behavior pattern has a significant relationship with any of Holland’s occupational personality types. This was an
important issue to address since this study was looking at the Type A pattern's role in the career choice process, and Holland's theory of career choice is based on his six types. Looking at the relationship of these two variables would determine whether or not the Type A pattern is considered as independent or related to Holland's theory of career choice.

In providing data to address this question, previous research by Matteson, Ivanevich, & Smith (1984) suggested that aspects of the Type A pattern were consistent with qualities of certain Holland personality types. Testing this notion, Martin (1986) demonstrated a significant correlation between Holland's Enterprising and Investigative types and the Type A behavior pattern. Based on those findings, a relationship was predicted between these Holland types and the Type A pattern.

Finally, considering the possibility of a Type A pattern-Holland type relationship, a fourth research question arose about the interaction of those two constructs when looking at the selection of a career: Are Type A/B differences in attraction to characteristics of a work environment moderated by their Holland type classification? This last issue was an important one to address to further clarify whether those two constructs interact in determining the attractiveness of a job, or whether they are two independent considerations in the career choice process.
When looking at the 21 OR dimensions of a work environment used for this study, it appeared that several of those dimensions (e.g., Achievement) corresponded with aspects of both the Type A pattern and the Enterprising and Investigative types. Furthermore, it seemed that Type A’s and Enterprising and Investigative types would be very attracted to those work environment dimensions. Therefore, it was expected that the attractiveness ratings of Type A and Type B persons would vary based on their Holland type classification, so there would be less difference between Type A’s and Type B’s classified as Enterprising and Investigative types than between Type A’s and Type B’s classified as Conventional, Realistic, Social, and Artistic types.

For example, when looking at the Achievement dimension and comparing Type A’s and Type B’s classified as Enterprising and Conventional types, it was expected that all Enterprising types would rate the Achievement dimension highly, regardless of their Type A/B classification, because of the achievement component of the Enterprising type. On the other hand, only the Conventional types classified as Type A were expected to rate the Achievement dimension highly based on its similarity to the Type A pattern, while those Conventional types who were classified as Type B were anticipated to rate it lower.
This study expected that determining which work aspects a person finds attractive in a future job would provide information about the person’s process in making a future career choice. The link between the attractiveness of these work aspects and the career choice process involves several assumptions.

The first assumption is that the "attractiveness of work aspects of a future job" is relevant to the actual factors individuals consider when selecting a job. This assumption follows from Holland’s (1985) theory which suggests that persons choose jobs based on whether the work environment characteristics matches their own personal qualities and interests. Holland identifies specific aspects of different work environmental types. A limitation of this perspective is that although Holland’s theory is one of the most highly researched theories of career choice, it explains the career choice process from only one viewpoint.

The second assumption is that factors labeled as "attractive" in an anticipated future job are similar to factors considered in the actual job choice. Holland’s theory proposes that the choice of a career naturally follows from a person’s preferences and interests which lead up to the choice. However, it must be noted that this study is not considering actual job choices, but is addressing the anticipatory part of the career choice process.
The third assumption is that the work aspects measured in this study (21 occupational reinforcer dimensions, Table 1), are salient factors for a person's choice of a career. Those work aspects were formulated to identify potentially reinforcing aspects of a job, and have been shown to relate to Holland's theory of vocational choice (Rosen et al., 1972). However, it must be remembered that those work aspects are a partial list of all the factors relevant to job choice. There are many other factors, such as job availability, which are not tapped by the variables in this study.

The following are the hypotheses for this study:

**Hypotheses**

1. Significant differences were expected between Type A and Type B individuals for their attractiveness ratings of the following OR dimensions: Achievement, Advancement, Activity, Autonomy, Creativity, Recognition, Responsibility, and Social Status. It was predicted that Type A persons would rate each of these dimensions significantly higher than Type B persons.

2. Enterprising types were predicted to have significantly higher attractiveness ratings than Social, Conventional, Realistic, Investigative and Artistic types for the following OR dimensions: Achievement, Advancement, Authority, Recognition and Social Status. Enterprising,
Investigative and Artistic types were expected to have significantly higher attractiveness ratings than Social, Conventional and Realistic types for the Creativity, Responsibility, Independence, and Autonomy dimensions. There were no expected attractiveness rating differences between the six types for the remaining twelve OR dimensions.

3. A significant correlation was predicted between Enterprising and Investigative scores and Type A behavior pattern scores. Enterprising and Investigative types were expected to be classified as Type A's significantly more than as Type B's, and no classification difference was anticipated for Realistic, Conventional, Artistic and Social types.

4. The effect of Type A versus Type B ratings of the attractiveness of several of the OR dimensions was expected to vary as a function of Holland type classification. Type A and B differences in attractiveness ratings would be less for those subjects classified as Enterprising and Investigative types than for subjects classified as Conventional, Social, Artistic and Realistic types on the following OR dimensions: Achievement, Advancement, Recognition, and Social Status.
CHAPTER II

METHOD

Subjects

The subjects who participated in this study were junior and senior undergraduate students from the University of North Texas. Since this study was exploring the career choice process, only juniors and seniors who had declared a major were included in order to indicate that some commitment to a career had been made. Thirty-six subjects not classified as juniors or seniors were dropped from the data analysis. An adequate representation of all Holland types and Type A’s and B’s was needed for this study, so based on previous research samples studied in these areas (Howard et al., 1977; Ivanevich et al., 1982; Burke, 1983; Matteson et al., 1984; Martin, 1986) subjects were drawn from undergraduate classes in the Business and Psychology departments. The sample consisted of both males and females and was not limited by age.

Procedure

The experimenter obtained permission from professors to present the study to the undergraduate classes. During the class meeting, the experimenter gave a brief introduction and explained that participation in the study was voluntary. The experimenter asked for participation by juniors and
seniors only and distributed the consent form (Appendix A) to those students who raised their hands. Then the experimenter asked each student to read the instructions and decide if they would participate in the study. Those students who signed the consent form were given a packet including the instruction sheet (Appendix B), the Minnesota Job Description Questionnaire (MJDQ) (Appendix C), the Vocational Preference Inventory (VPI) (Appendix D) and the Jenkins Activity Survey-Form T (JAS-T) (Appendix E). The students answered the MJDQ first, VPI second and JAS-T third, which required about sixty minutes total to complete. Upon completion, the questionnaires were collected and students were debriefed about the purpose of the study.

Instruments

Jenkins Activity Survey; Form T (JAS-T; Student Version)

The Jenkins Activity Survey is a measure of the Type A behavior pattern that is widely used in Type A research. The JAS-T (Glass, 1977) was developed for use with students and differs from the adult version of the JAS only in changing the wording of some items from work-related activities to school-related activities. It contains 21 multiple choice items containing Type A versus Type B responses and is scored by the total number of Type A responses out of 21 items (0-21). A score of eight and above is indicative of the Type A behavior pattern, while
seven and below is indicative of the Type B pattern. This criteria was determined by studies using the JAS-T by Glass (1977) which demonstrated the median split of college students to be between scores of seven and eight.

According to research, the JAS-T reliably predicts Type A behavior such as competitiveness (Van Egeren, 1979), hostility (Carver & Glass, 1978), achievement striving and time urgency (Burnam et al., 1975). The JAS-T has been established to reliably correlate with the interview method of assessing Type A behavior and the adult version of the JAS which has a test-retest reliability based on an interval of one year of .66 (Jenkins, Zyzanski, & Rosenman, 1971). Pallodino and Tyron (1980) found the JAS-T to have a Kuder-Richardson Formula 20 reliability coefficient of .70.

**Vocational Preference Inventory (VPI)**

The eighth edition of the VPI (Holland, 1985b) consists of 160 occupational titles to which the respondent indicates a like, indifferent, or dislike response. The occupational titles measure personal characteristics such as the person's interests, values, interpersonal relations, self-conception, coping behavior and identifications. The inventory has 11 scales: Realistic, Investigative, Artistic, Social, Enterprising, Conventional, Self-Control, Masculinity, Status, Infrequency, and Acquiescence. Only the first six scales of the VPI which correspond with Holland's
occupational/personality topologies were administered for this study, and subjects were typed according to the highest of these six scores. Those subjects who tied on two or more types for their highest score were dropped from the data analysis (n = 34).

More than 100 empirical studies have found the first six scales of the VPI to reliably predict (.90) Holland's types. The internal consistency values (Kuder Richardson Formula 20) are mostly higher for the seventh revision of the VPI than for the previous versions; for the occupational scales they are all above .85. The patterns of scale intercorrelation, means and standard deviations are very similar for the sixth and seventh revisions. The occupational scales for the two versions correlate very highly (range from .89 to .97).

**Minnesota Job Description Questionnaire (MJDQ)**

The MJDQ is an instrument for measuring occupational reinforcer (OR) dimensions for the work environments of different occupations (Rosen et al., 1972). The MJDQ makes paired comparisons between 21 statements which describe reinforcer characteristics of the work environments. The twenty-one statements have been grouped into different combinations of five statements each, and respondents rank their attractiveness from "1" to "5."
The scoring of the MJDQ gives each of the items a vote when it is ranked higher than another item, so the highest ranked item receives twenty votes and the lowest ranked item receives no votes. After all 21 items are summed for their number of votes across all subjects in a particular classification group (i.e., Type A's or Type B's), a mean score for each item is determined within each group. This mean score is then divided by the total number of possible votes (n = 21) to get a proportion score. The proportion for each item is then converted to a normal deviate (Z score) and plotted with the Z scores of the other items, resulting in a profile of 21 Z scores for each classification group. In this study, subjects were classified as Type A's versus Type B's, males versus females, and as one of the five Holland types. The reliability of the MJDQ based on split-half coefficients ranges from .78 to .98 with a median of .91. The validity of occupational reinforcer patterns has been established by showing that different OR patterns were obtained for different occupations.

For this study, the 21 MJDQ items were also adapted into independent 11 point Likert rating scales, so that comparisons could be made between individual subjects for absolute ratings of each of the 21 items. Since this is a
new adaptation of the instrument, there are no validity or reliability figures available for this method.

Research Design

This study incorporated an ex post facto, factorial design of research experimentation. The independent variables of primary interest were occupational personality as defined by the Holland types and the Type A/B pattern. Gender was also included as an independent variable to determine possible effects for the work reinforcer ratings. The primary dependent variable was the occupational reinforcers of a work environment. Other variables such as work salience and prestige are suspected to be contributors to the career choice process. Since both of these variables are significant factors in the Type A pattern, neither factor was separated out as an independent variable.
CHAPTER III

RESULTS

The major purpose of this study was to examine the role of the Type A behavior pattern in the career choice process. Specifically, the research examined whether Type A and Type B persons were differently attracted to aspects of a work environment when considering a prospective career. Second, the study addressed whether or not the Type A construct was related to Holland’s theory of occupational types.

The three independent variables examined were Type A/Type B classification, Holland type classification and gender, and the dependent measure was the attractiveness ratings on the 21 occupational reinforcer (OR) dimensions. A three-way multivariate analysis of variance (MANOVA) procedure was performed to test for both main effect differences and interaction effects across the 21 OR dimensions. Those effects which were significant using the MANOVA were further analyzed using an univariate analysis of variance (ANOVA) procedure for each of the OR dimensions. The third procedure utilized to examine the data was a correlational analysis between Type A/B scores and Holland type scores. Finally, a Chi square procedure was performed with the Type A/B group classifications and Holland type classifications.
Description of the Sample

The sample consisted of 285 undergraduate students enrolled at the University of North Texas in a variety of academic areas. Originally, 331 questionnaires were obtained, but 46 subjects were dropped for students not classified as juniors and seniors or who returned incomplete data. The final sample contained 187 seniors and 98 juniors, of which 162 (57%) were females and 123 (43%) were males. The age ranged from 19 to 52 years with a mean age of 24.1 years. Appendix F presents the sample broken down by college major. The majors most often listed by the undergraduate sample were psychology (18%), accounting (12%), management (11%), marketing (10%), and business (10%) as might be expected since students were recruited from psychology and business classes. Likewise, Appendix G presents the sample broken down by projected careers. The most common projected careers identified by the students included psychology (16%), management (13%), marketing (11%) and accounting (10%).

When the Jenkins Activity Survey was scored for the 285 subjects, 171 were classified as Type A subjects (60.0%) and 114 were classified as Type B subjects (40.0%). Scores on the 0 to 21 scale ranged from 2 to 18, with a mean score of 8.54 and median score of 9.00. The scoring of the Vocational Preference Inventory revealed that the sample was
fairly evenly distributed across five of the Holland types:
Enterprising (n = 78, 27.4%), Social (n = 62, 21.8%),
Artistic (n = 56, 19.6%), Conventional (n = 50, 17.5%), and
Investigative (n = 39, 13.7%). Due to the low number of
college students classified as Realistic types (n = 5),
those subjects were dropped from the data analysis. As is
usually the case, females outnumbered males who were
classified as Artistic (f = 43, m = 19), Conventional (f =
36, m = 20), and Social types (f = 27, m = 23), whereas the
number of males was greater for the Enterprising types (m =
42, f = 36). The proportion of males and females was
similar for Investigative types (m = 19, f = 20).

Rating scores on the 21 OR dimensions of the MJDQ scale
covered the entire range (1-11), and the overall mean rating
was 8.39. The highest mean rating was on the Achievement
scale (9.99) and the lowest mean rating was on the
Independence scale (5.58). The Type A group’s mean scores
ranged from 10.12 to 5.46, and their overall mean rating on
the 21 dimensions was 8.42. The Type B group’s scores
ranged from 9.63 to 5.66, with an overall mean rating of
8.36.

In addition to the rating scores, the rankings of the
21 OR dimensions were calculated for the Type A and Type B
groups and males and females. Figures 1 and 3 display the
rankings for these groups, using the normal deviates scores
for each OR dimension derived from the rankings as described in the Method section.

**Major Findings**

**Three-way Multivariate Analysis of Variance**

The data was first examined utilizing a $2 \times 5 \times 2$ (Type A/B by Holland type by gender) MANOVA for the 21 occupational reinforcer (OR) dimensions (Table 2). The results demonstrated a significant main effect for Type A/B classification ($F = 1.97$, $p < .01$) and for gender ($F = 2.22$, $p < .01$), and a significant interaction effect for Type A/B classification by gender ($F = 1.65$, $p < .05$). No significant effects were revealed for the Holland types. Thus, differences in occupational attractiveness, as measured by the 21 OR dimensions, were related to Type A/B classification and gender, and the interaction of the two variables.

To discover which of the OR dimensions accounted for the significant differences between the Type A and Type B subjects and between males and females, univariate analysis of variance procedures were performed for each of the 21 dimensions. In the following sections, the findings of significant differences on each of the OR dimensions using the ANOVAs are presented for (a) Type A/B classification main effect differences, (b) gender main effect differences and (c) Type A/B classification by gender interaction
Table 2

**Multivariate Analysis of Variance Main and Interaction Effects for Three Way Design**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pillais V</th>
<th>df</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A/B</td>
<td>.1447</td>
<td>21,245</td>
<td>1.97**</td>
</tr>
<tr>
<td>Holland type</td>
<td>.3458</td>
<td>84,992</td>
<td>1.12</td>
</tr>
<tr>
<td>Gender</td>
<td>.1599</td>
<td>21,245</td>
<td>2.22**</td>
</tr>
<tr>
<td>Type A/B by Holland</td>
<td>.3437</td>
<td>84,992</td>
<td>1.11</td>
</tr>
<tr>
<td>Type A/B by Gender</td>
<td>.1238</td>
<td>21,245</td>
<td>1.65*</td>
</tr>
<tr>
<td>Holland by Gender</td>
<td>.3226</td>
<td>84,992</td>
<td>1.04</td>
</tr>
<tr>
<td>Type A/B by Holland by Gender</td>
<td>.2568</td>
<td>84,992</td>
<td>.81</td>
</tr>
</tbody>
</table>

*p < .05  **p < .01
effects. Since the MANOVA results for Holland type were not significant, further analyses addressing the original hypotheses of Holland type differences for specific OR dimensions are not presented.

**Type A and B Differences**

The results of significant differences between the Type A and Type B subjects on the OR dimensions are reported in Table 3. The study hypothesized that scores on the Achievement, Advancement, Activity, Autonomy, Creativity, Recognition, Responsibility, and Social Status dimensions would be higher for Type A persons than Type B persons (Hypothesis 1). Six of the eight OR dimensions revealed significant differences as predicted: Advancement, Activity, Autonomy, Creativity, Responsibility, and Social Status. On each of these dimensions, Type A’s scored higher than Type B’s as expected. The Achievement and Recognition dimensions did not exhibit differences as hypothesized.

In addition, there were two findings of differences between Type A’s and Type B’s on dimensions where no differences were predicted. For the Ability Utilization dimension, Type A’s scored significantly higher than Type B’s, while for the Co-workers dimension, Type B’s scored higher than Type A’s.

Looking at the ranking profiles developed for the Type A and Type B groups (Figure 1), the results seem to support
Table 3

Analysis of Variance Main Effects for Type A's Versus Type B's Along Each OR Dimension

<table>
<thead>
<tr>
<th>OR Dimension</th>
<th>Type As</th>
<th>Type Bs</th>
<th>F Value (df=1,20)</th>
<th>Highest Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td></td>
</tr>
<tr>
<td>Ability utilization</td>
<td>9.45</td>
<td>2.0</td>
<td>8.98</td>
<td>5.13*</td>
</tr>
<tr>
<td>Achievement</td>
<td>10.12</td>
<td>1.7</td>
<td>9.85</td>
<td>2.60</td>
</tr>
<tr>
<td>Activity</td>
<td>6.80</td>
<td>2.6</td>
<td>6.13</td>
<td>4.19*</td>
</tr>
<tr>
<td>Advancement</td>
<td>10.05</td>
<td>1.6</td>
<td>9.48</td>
<td>5.29*</td>
</tr>
<tr>
<td>Authority</td>
<td>5.66</td>
<td>2.4</td>
<td>5.66</td>
<td>0.00</td>
</tr>
<tr>
<td>Company policy &amp; practices Compensation</td>
<td>8.85</td>
<td>2.3</td>
<td>9.01</td>
<td>0.33</td>
</tr>
<tr>
<td>Co-workers</td>
<td>8.21</td>
<td>2.3</td>
<td>8.94</td>
<td>7.81**</td>
</tr>
<tr>
<td>Creativity</td>
<td>9.13</td>
<td>2.1</td>
<td>8.72</td>
<td>3.94*</td>
</tr>
<tr>
<td>Independence</td>
<td>5.46</td>
<td>2.6</td>
<td>5.69</td>
<td>0.69</td>
</tr>
<tr>
<td>Moral values</td>
<td>8.10</td>
<td>3.0</td>
<td>8.64</td>
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*p < .05  **p < .01
Figure 1

Ranking Profile of 21 OR Dimensions for Type A and Type B Groups

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A = Type A  B = Type B
the Type A and Type B differences using the ANOVA. Five of
the OR dimensions show marked ranking score differences
between the Type A and Type B groups: Ability utilization,
Activity, Co-workers, Responsibility, and Autonomy. Type
A’s and Type B’s show less differentiation on the
Advancement, Creativity, and Social Status dimensions,
although Type A’s have higher ranking scores than Type B’s.
In addition, there were high ranking scores for some
dimensions by both Type A’s and Type B’s (Achievement,
Advancement, Recognition) and low ranking scores on a few
scales (Independence, Authority), which is similar to the
pattern of mean rating scores reported in the ANOVA (refer
to Table 3).

**Gender Differences and Gender by Type A/B Interaction**

No specific hypotheses were made concerning gender
differences, however, the significant MANOVA results for
gender and the interaction of gender with Type A/B
classification warrant their report and later discussion.

Univariate ANOVAs were performed to explain which of
the 21 ORs demonstrated gender differences, which are
presented in Table 4. On seven of the 21 OR dimensions
(Achievement, Activity, Company Policy, Moral Values, Social
Service, and Working Conditions), females scored
significantly higher than males. All of the significant
differences showed females scoring higher than males, and
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*p < .05

**p < .01

***p < .001
reflected a general trend of females giving higher attractiveness ratings to most of the occupational reinforcers.

Univariate analyses of the significant gender by Type A/B classification interaction revealed that one OR dimension, Supervision-Human Relations, displayed a significant interaction effect (Table 5). On this dimension, Type A females scored higher than Type B females, while Type B males scored higher than Type A males (Figure 2). This single dimension seems to have accounted for the significant interaction effect on the 21 work environment aspects as revealed with the MANOVA, since no other dimension demonstrated a Type A/B by gender interaction using the ANOVAs.

In looking at the profile rankings of the 21 work environment dimensions for males and females (Figure 3), the ranking scores appeared consistent with the rating differences reported by the ANOVA (refer to Table 4). For six of the seven scales which revealed gender differences in rating scores, there was also a clear difference in ranking scores. Only the Activity dimension demonstrated a small difference between females and males. In addition, Table 6 displayed the relative attractiveness of Type A/B versus non-Type A/B related work environment aspects.
Table 5

Analysis of Variance Interaction Effects of Type A/B Classification with Gender

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**p < .01**
Figure 2

Plot of Mean Scores on Supervision-Human Relations Dimension for Type A/B Groups and Males and Females
Figure 3

Ranking Profile of 21 OR Dimensions for Males and Females

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Normal Deviate Ranking Scores

M = Males  F = Females
### Table 6

**Rankings of OR Dimensions for Type A/B Groups**

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<td>21.</td>
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<td>Independence (work alone)</td>
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* Denotes the dimensions which demonstrated significant attractiveness rating differences for Type As and Type Bs.
**Chi Square and Correlational Analyses of Type A/B Pattern and the Holland Types**

The relationship between the Type A/B pattern and the Holland types was examined using two methods of data analysis. The Chi square analysis compared classification differences between Type A and Type B subjects across the five Holland types (Investigative, Artistic, Social, Enterprising, and Conventional), and a correlational analysis examined the relationship of Type A/B scores with each of the Holland type scales. Enterprising and Investigative types were expected to be classified as Type A's significantly more often than as Type B's, and no classification differences were expected for the Conventional, Artistic, and Social types. Similarly, significant correlations were expected between the Type A scores Enterprising and Investigative type scores.

Table 7 presents the breakdown of the sample in which the numbers of Type A's and Type B's were compared across the five Holland types. The results of the Chi square analysis were not significant, (Chi square = 5.06, df = 4, p = .281), indicating that Holland type classification was independent of Type A/B classification.

The correlational analysis provided further evidence about the relationship between the Type A/B pattern and Holland types. Table 8 presents a correlational matrix in...
Table 7

Breakdown of Sample by Type A/B and Holland Type Classification

<table>
<thead>
<tr>
<th>Holland Type</th>
<th>Type A's n=</th>
<th>Type B's n=</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigative</td>
<td>23 (59.0%)</td>
<td>16 (41.0%)</td>
<td>39 (13.7%)</td>
</tr>
<tr>
<td>Artistic</td>
<td>28 (50.0%)</td>
<td>28 (50.0%)</td>
<td>56 (19.6%)</td>
</tr>
<tr>
<td>Social</td>
<td>35 (56.5%)</td>
<td>27 (43.5%)</td>
<td>62 (21.8%)</td>
</tr>
<tr>
<td>Enterprising</td>
<td>53 (67.9%)</td>
<td>25 (32.1%)</td>
<td>78 (27.4%)</td>
</tr>
<tr>
<td>Conventional</td>
<td>32 (64.0%)</td>
<td>18 (36.0%)</td>
<td>50 (17.5%)</td>
</tr>
</tbody>
</table>

Column Total | 171 (60.0%) | 114 (40.0%) | 285 100.0%
Table 8

Correlation Matrix for Type A/B Scores with Holland Scores

<table>
<thead>
<tr>
<th>Scores</th>
<th>Investigative</th>
<th>Artistic</th>
<th>Social</th>
<th>Enterprising</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A/B</td>
<td>.049</td>
<td>-.032</td>
<td>-.018</td>
<td>.141*</td>
<td>.027</td>
</tr>
<tr>
<td>Investigative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artistic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>.20</td>
<td>.38</td>
<td>.106</td>
<td>.056</td>
<td></td>
</tr>
<tr>
<td>Enterprising</td>
<td>.04</td>
<td>.30</td>
<td>.53</td>
<td></td>
<td>.357**</td>
</tr>
<tr>
<td>Conventional</td>
<td>.17</td>
<td>.02</td>
<td>.36</td>
<td>.38</td>
<td></td>
</tr>
</tbody>
</table>

Note: The Holland type coefficients above the diagonal are from this study; below the diagonal are from the VPI manual (1978).
which the scores on the Type A/B measure were correlated with the Holland type scores. The results of the Pearson correlational analysis between Type A/B and Holland type scores revealed a small but significant positive correlation between the Enterprising and Type A/B scores ($r = .141, p < .01$). There were no other significant correlations between Type A/B score and other Holland type scores. Both the Chi square and correlation pointed out the slight association between the Type A/B pattern and the Holland types.

Table 9 presents the correlation of Type A/B scores with the 21 OR rating scores, which ranged from .205 to -.204. Seven of the OR dimensions (Ability utilization, Activity, Advancement, Creativity, Responsibility, Social status, and Autonomy) were significantly correlated in a positive direction with Type A scores, and the Co-workers dimension was positively correlated with Type B scores. These significant correlations were found on the same eight OR dimensions which demonstrated Type A and B rating differences using the ANOVA procedure.

In addition, Table 9 lists the correlations of Holland type scores with OR dimension scores. These were generally low correlations, ranging from .223 to -.208. Finally, Table 10 reports the intercorrelations between the 21 OR dimension rating scores. Several of the intercorrelations are strong, ranging from .692 to -.065.
Table 9

Correlation Matrix for Type A/B Scores and Holland Scores with OR Dimension Scores

<table>
<thead>
<tr>
<th>Scores</th>
<th>JAS-T</th>
<th>Investigative</th>
<th>Artistic</th>
<th>Social Enterprising</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability utilization</td>
<td>.183**</td>
<td>.160*</td>
<td>.150**</td>
<td>.042</td>
<td>-.066</td>
</tr>
<tr>
<td>Achievement</td>
<td>.123</td>
<td>.099</td>
<td>.096</td>
<td>.084</td>
<td>-.000</td>
</tr>
<tr>
<td>Activity</td>
<td>.173*</td>
<td>.031</td>
<td>-.030</td>
<td>.049</td>
<td>-.047</td>
</tr>
<tr>
<td>Advancement</td>
<td>.186*</td>
<td>-.003</td>
<td>-.038</td>
<td>-.017</td>
<td>.084</td>
</tr>
<tr>
<td>Authority</td>
<td>.037</td>
<td>.006</td>
<td>-.058</td>
<td>-.032</td>
<td>.060</td>
</tr>
<tr>
<td>Company policies &amp; practices Compensation</td>
<td>-.036</td>
<td>.021</td>
<td>.121</td>
<td>.107</td>
<td>-.034</td>
</tr>
<tr>
<td>Co-workers</td>
<td>-.204**</td>
<td>-.091</td>
<td>-.020</td>
<td>.066</td>
<td>-.016</td>
</tr>
<tr>
<td>Creativity</td>
<td>.153*</td>
<td>.195**</td>
<td>.196**</td>
<td>.105</td>
<td>.002</td>
</tr>
<tr>
<td>Independence</td>
<td>.012</td>
<td>.081</td>
<td>.016</td>
<td>-.032</td>
<td>-.094</td>
</tr>
<tr>
<td>Moral values</td>
<td>-.094</td>
<td>.060</td>
<td>.171*</td>
<td>.185**</td>
<td>-.006</td>
</tr>
<tr>
<td>Recognition</td>
<td>.099</td>
<td>-.013</td>
<td>.040</td>
<td>.035</td>
<td>.041</td>
</tr>
<tr>
<td>Responsibility</td>
<td>.205**</td>
<td>.153*</td>
<td>.200**</td>
<td>.061</td>
<td>-.014</td>
</tr>
<tr>
<td>Job Security</td>
<td>-.081</td>
<td>-.051</td>
<td>.040</td>
<td>.039</td>
<td>-.017</td>
</tr>
<tr>
<td>Social service</td>
<td>-.110</td>
<td>.194**</td>
<td>.111</td>
<td>.223**</td>
<td>-.197**</td>
</tr>
<tr>
<td>Social status</td>
<td>.163*</td>
<td>.051</td>
<td>.116</td>
<td>.104</td>
<td>.071</td>
</tr>
<tr>
<td>Supervision-human relations</td>
<td>-.026</td>
<td>.024</td>
<td>.060</td>
<td>.077</td>
<td>-.032</td>
</tr>
<tr>
<td>Supervision-technical Variety</td>
<td>-.074</td>
<td>-.002</td>
<td>.032</td>
<td>.021</td>
<td>.019</td>
</tr>
<tr>
<td>Working conditions</td>
<td>-.096</td>
<td>.096</td>
<td>.063</td>
<td>-.079</td>
<td>-.075</td>
</tr>
<tr>
<td>Autonomy</td>
<td>.173*</td>
<td>.010</td>
<td>.202**</td>
<td>.018</td>
<td>-.008</td>
</tr>
</tbody>
</table>

*p < .01    **p < .001
Table 10

Intercorrelations of Occupational Reinforcer (OR) Dimension Rating Scores

<table>
<thead>
<tr>
<th>Scores</th>
<th>ABIL</th>
<th>ACHV</th>
<th>ACTV</th>
<th>ADVN</th>
<th>AUTH</th>
<th>CPOL</th>
<th>COMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability utiliz.</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achievement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advancement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authority</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company policies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compensation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scores</th>
<th>CCMO</th>
<th>CREA</th>
<th>INDE</th>
<th>MVAL</th>
<th>RECG</th>
<th>RESP</th>
<th>SECPR</th>
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</thead>
<tbody>
<tr>
<td>Ability utiliz.</td>
<td>.203**</td>
<td>.639**</td>
<td>.061</td>
<td>.285**</td>
<td>.398**</td>
<td>.572**</td>
<td>.355**</td>
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<tr>
<td>Achievement</td>
<td>.176*</td>
<td>.483**</td>
<td>-.038</td>
<td>.228**</td>
<td>.663**</td>
<td>.499**</td>
<td>.258**</td>
</tr>
<tr>
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<td>.106</td>
<td>.212**</td>
<td>.008</td>
<td>.043</td>
<td>.039</td>
<td>-.056</td>
</tr>
<tr>
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<td>.001</td>
<td>.052</td>
<td>.590**</td>
<td>.468**</td>
<td>.404**</td>
</tr>
<tr>
<td>Authority</td>
<td>.065</td>
<td>.139*</td>
<td>.215**</td>
<td>.003</td>
<td>.108</td>
<td>.184**</td>
<td>-.008</td>
</tr>
<tr>
<td>Company policies</td>
<td>.310**</td>
<td>.199**</td>
<td>.061</td>
<td>.299**</td>
<td>.204**</td>
<td>.203**</td>
<td>.494**</td>
</tr>
<tr>
<td>Compensation</td>
<td>.182*</td>
<td>.156*</td>
<td>.118</td>
<td>.072</td>
<td>.231**</td>
<td>.279**</td>
<td>.356**</td>
</tr>
<tr>
<td>Co-workers</td>
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<td>.128</td>
<td>-.029</td>
<td>.185**</td>
<td>.201**</td>
<td>.027</td>
<td>.432**</td>
</tr>
<tr>
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<td>.206**</td>
<td>.403**</td>
<td>.692**</td>
<td>.228**</td>
<td></td>
</tr>
<tr>
<td>Independence</td>
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<td>.064</td>
<td>.011</td>
<td>.200</td>
<td>.043</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moral Values</td>
<td>1.000</td>
<td>.232**</td>
<td>.249**</td>
<td>.287**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recognition</td>
<td>1.000</td>
<td>.513**</td>
<td>.372**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsibility</td>
<td>1.000</td>
<td>.205**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .01  **p < .001
Table 10 (Continued)

Intercorrelations of Occupational Reinforcer (OR) Rating Scores

<table>
<thead>
<tr>
<th>Scores</th>
<th>SSER</th>
<th>SSTA</th>
<th>S-HR</th>
<th>S-TC</th>
<th>VARI</th>
<th>WCON</th>
<th>AUTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability utiliz.</td>
<td>.181*</td>
<td>.188**</td>
<td>.370**</td>
<td>.270**</td>
<td>.246**</td>
<td>.374**</td>
<td>.433**</td>
</tr>
<tr>
<td>Achievement</td>
<td>.077</td>
<td>.246**</td>
<td>.353**</td>
<td>.282**</td>
<td>.145*</td>
<td>.370**</td>
<td>.361**</td>
</tr>
<tr>
<td>Activity</td>
<td>.051</td>
<td>.172*</td>
<td>.015</td>
<td>.088</td>
<td>.272**</td>
<td>.021</td>
<td>.096</td>
</tr>
<tr>
<td>Advancement</td>
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<td>.358**</td>
<td>.351**</td>
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<td>.410**</td>
<td>.345**</td>
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<tr>
<td>Authority</td>
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<td>.125</td>
<td>.114</td>
<td>.287**</td>
<td>-.004</td>
<td>.146*</td>
</tr>
<tr>
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<td>.619**</td>
<td>.590**</td>
<td>.117</td>
<td>.510**</td>
<td>.185**</td>
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<tr>
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<td>.290**</td>
<td>.198**</td>
<td>.090</td>
<td>.322**</td>
<td>.342**</td>
</tr>
<tr>
<td>Co-workers</td>
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<td>.159*</td>
<td>.342**</td>
<td>.310**</td>
<td>.158*</td>
<td>.431**</td>
<td>.025</td>
</tr>
<tr>
<td>Creativity</td>
<td>.200**</td>
<td>.176*</td>
<td>.212*</td>
<td>.183**</td>
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<td>.066</td>
<td>.092</td>
<td>.252**</td>
<td>.023</td>
<td>.177*</td>
</tr>
<tr>
<td>Moral Values</td>
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<td>.299**</td>
<td>.218**</td>
<td>.123</td>
<td>.312**</td>
<td>.220**</td>
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<td>.301**</td>
<td>.366**</td>
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<td>.413**</td>
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<td>.251**</td>
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<td>.177*</td>
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<td>.053</td>
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<td>.087</td>
<td>.131</td>
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<tr>
<td>Supervision-human relations</td>
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<td>.535**</td>
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<td>Supervision-technical</td>
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<td>.323**</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

*p < .01  **p < .001
In conclusion, the results of the study is summarized in the following way:

1. Type A’s were more attracted than Type B’s to the Ability utilization, Advancement, Activity, Creativity, Responsibility, Social status, and Autonomy aspects of a work environment. Type B’s were more attracted than Type A’s to the Co-workers aspect.

2. Females were more attracted than males to the Achievement, Activity, Company policy, Moral values, Social service, and Work conditions aspects of the work environment. Type A females were more attracted than Type B females to the Supervision-Human relations aspect, while Type B males were more attracted than Type A males.

3. The five Holland types demonstrated no differences in their attraction to the 21 aspects of the work environment. In addition, there were no significant interactions shown between Type A’s and B’s and the five Holland types for the 21 work environment aspects.

4. There was no classification difference for Type A’s and Type B’s across the five Holland types. In addition, there was a small but significant correlation between the Type A pattern and Enterprising type. No other significant correlations between the Type A pattern and any Holland types were revealed.
CHAPTER IV

DISCUSSION

The primary purpose of this study was to investigate the role of the Type A behavior pattern in the career choice process. The main research question addressed whether Type A and Type B individuals would show different levels of attraction to aspects of the work environment in anticipating their selection of a career. The other main question explored was the relationship between the Type A pattern and the occupational personality types identified in Holland's vocational choice theory. There had been a lack of research in both the Type A literature and vocational choice literature investigating the role of the Type A behavior pattern in the vocational choice process. The present study was designed to begin to bridge the gap in the research about how the Type A or Type B characteristics of a person and job environment influence the choice of a career.

Four specific research hypotheses were formulated. The first hypothesis asked whether Type A's and B's differed in their attraction to aspects of the work environment. The findings supported Type A and Type B differences for six of the eight predictions. The second hypothesis proposed Holland type differences in attraction to several of the work environment aspects. No Holland type differences were
found to support these predictions. The third hypothesis proposed a relationship between the Type A pattern and two of the Holland types, the Enterprising and Investigative types. The findings revealed a small association between the Type A pattern and Enterprising type, and no relationship between the Type A pattern and Investigative type. Finally, the fourth hypothesis addressed the interaction of the Type A pattern and the Holland types when looking at their attraction to several work environment aspects. The findings demonstrated no interaction between the two variables. Although no hypotheses were formulated for gender differences, the findings revealed females were more attracted than males to six of the work environment aspects.

The first section of this chapter is a discussion of the major findings of the study. In this section, differences in attraction to work environment characteristics are discussed for Type A's and B's, for Holland types, and for males and females. Furthermore, the nature of the Type A/B pattern and Holland types relationship are examined. The second section of this chapter focuses on implications of these findings. Limitations of the study are presented in the third section, and future directions for research are discussed in the fourth and final section of this chapter.
Major Findings of the Study

Type A and B Differences

Perhaps the most central finding concerned the Type A and B differences in looking at a future job. The finding that Type A students and Type B students were differently attracted to aspects of the work environment in considering an upcoming career choice is an indication that the Type A behavior pattern plays a significant role in the career choice process. The results of this study support earlier speculations in the literature that the Type A pattern was an important job selection variable (Howard, et al., 1977). It is likely from the findings of this study that students who are getting ready to enter the work world are attracted to certain aspects of a prospective job that would reinforce their own Type A or Type B behaviors. Traditional vocational theories such as Holland’s (1973) have emphasized that career choices are made as people select jobs that match their own work traits and vocational interests. However, Holland’s theory has not expanded to consider other variables involved in the process of choosing a career such as the Type A behavior pattern.

Another conclusion that can be drawn from these findings is that Type A’s and Type B’s are attracted to aspects of jobs for different reasons. While some aspects of a potential job are viewed similarly by Type A’s and Type
B's, there are other aspects of a job which are more attractive to Type A's than Type B's, and some that are more attractive to Type B's than Type A's.

As predicted, there were six aspects of the work environment which were more attractive to Type A's than Type B's, which are consistent with the core aspects of Type A theory (Activity, Advancement, Social status, Autonomy, Creativity, and Responsibility). There was an additional aspect of the work environment which was more attractive to Type A's than Type B's (Ability utilization) and another aspect which was more attractive to Type B's than Type A's (Co-workers). Neither of these findings were predicted, but they seem consistent with the Type A theory. Lastly, there were unexpected findings on two of the work environment aspects (Achievement and Recognition). In both cases, it was predicted that Type A's would be more attracted to these two aspects than Type B's, but the findings demonstrated no differences.

The first area to be discussed concerns the findings of Type A and B differences which are consistent with the Type A theory. The aspects of a job that were found to be critical in distinguishing Type A's from Type B's preferences for a future job can be broken into three main categories: (a) the level of activity and pace, (b) the capacity for advancement and social status, and (c) the
degree of autonomy and individual responsibility versus a preference to work with others. Type A’s are attracted to a job in which they can stay busy and work long hours with hope for a promotion and increased prestige. They look forward to bearing much responsibility in a job, using their unique abilities, and working alone in a competitive manner. Type B’s prefer to work with others rather than alone and do not show the overriding desire to stay busy and keep-up a fast pace.

In contrast, there are other job factors which do not distinguish Type A’s from Type B’s preferences. The study exhibited that many work environment aspects cover a variety of non-Type A/B related job factors. These include job security, level of pay, fair working conditions, variety of work, quality of supervision, and social service aspects. For each of these factors, the level of importance was high for both Type A’s and Type B’s.

The three categories which differentiated Type A’s from Type B’s attraction to jobs are consistent with the core aspects of the Type A behavior pattern as described in the literature. The first category which differentiated Type A’s from Type B’s concerns the notion of chronic activity. As predicted, the study demonstrated that Type A persons were more attracted than Type B persons to the idea that in a prospective career, “workers on the job are busy all the
time" (Activity). This finding seems consistent with the literature which suggests that Type A’s are chronically active persons who always work at near maximum capacity, suppress fatigue to persist at a task, and juggle several tasks at one time (Snyder & Glass, 1974; Frankenhauser et al., 1980).

The second category of differences concerns the notion of opportunities for advancement in a company and increased prestige. In this study, Type A students were more attracted than Type B students to the notion that in a future career, workers on the job have "opportunities for advancement" (Advancement), and "the position of 'somebody' in the community" (Social Status). These findings are congruent with the unbridled ambition aspect of the Type A behavior pattern which refers to the constant setting of high work standards with the intent of reaching goals and being recognized as a high achiever (Jenkins et al., 1977).

The third category which differentiated Type A’s and Type B’s involves the idea of high responsibility and autonomy in a future job. Type A’s were more attracted than Type B’s to the idea that workers on the job "plan their work with little supervision" (Autonomy), "try out their own ideas" (Creativity), and "make decisions on their own" (Responsibility). All three of these findings seem to correspond with the independence aspect of the Type A
pattern. This characteristic suggests that Type A's persist in pursuing their work on their own because when they work with others they become very competitive and become impatient (Glass et al., 1974).

One finding did not turn out as expected, but in retrospect seems consistent with the Type A literature. Type B persons were more attracted than Type A persons to the notion that workers on the job "have co-workers who are easy to make friends with" (Co-workers). Although not originally predicted, this finding seems to agree with previous research showing that Type B's put much more emphasis on interpersonal relationships whereas Type A's place more value on the ability to be highly productive with their work (Jenkins et al., 1977; Zyzanski et al., 1979).

The other unexpected difference was related to the notion that workers on the job "make use of their individual abilities" (Ability utilization). The finding of a Type A and Type B difference was not predicted since it was originally thought that utilizing one's abilities and skills would be an equally important job consideration for both Type A's and Type B's. Although both types were very attracted to this dimension, the Type A's attraction was significantly higher than the Type B's. It may be that the use of one's unique or "individual" abilities in a job is attributable to the Type A person's preference to work
independently and competitively. Perhaps this "individual abilities" aspect belongs with the second cluster of Type A traits mentioned, the independence/autonomy aspects. Given this finding, the importance of "utilizing individual abilities" is a topic worthy of further investigation by Type A research.

The next area of Type A/B findings which need to be addressed are those which seem inconsistent with the Type A theory. These two findings concern Type A’s and Type B’s attraction to the idea that workers on the job "receive recognition for the work they do" (Recognition), and "get a feeling of accomplishment" (Achievement). It was predicted that Type A persons would be more attracted than Type B persons to both of these aspects based on the achievement oriented, status-seeking characteristics of the Type A pattern (Carver et al., 1976; Shekelle et al., 1976; Wright, 1988). However, both Type A and Type B subjects were very attracted to the recognition and achievement aspects. These findings may suggest that college juniors and seniors are looking forward to achieving and obtaining recognition in a prospective first job. The difference of this finding from previous studies may also relate to the manner past research defined Type A’s achievement as competitive success (Wright, 1988).
Another consideration about the lack of Type A and Type B differences in attraction to the achievement aspect may be explained by a methodological problem. Both Type A's and B's scored near the ceiling of the range of ratings for the achievement aspect (rating mean = 10.12 and 9.85 out of 11, respectively), making it difficult to rule out the possibility of Type A and B differences. Since this is the case, future studies may want to more specifically define different types of achievement in order to detect any Type A and B differences.

Along with the methodological problem just addressed, there are several Type A and B findings that support the methods used. The first note of support is where the findings of Type A and B differences on eight of the 21 work environment aspects were supported by similar findings demonstrated through significant relationships between the Type A/B pattern and the same eight aspects (see Table 7). A potential problem with the validity of the findings of Type A and B differences was the classification system of Type A's and B's using a cutoff point. The correlational findings, which are based on continuous Type A/B scores, give support to the Type A versus Type B cutoff point used in the ANOVAs.

The other methodological consideration is the findings of Type A and B differences utilizing the rating system were
supported by the profiles developed using the MJDQ rank scoring system. Since subjects completed the 21 independent rating scales and also ranked the 21 scales against each other, the two methods could be compared post-hoc. The similarity of the Type A/B findings using these two different methods gives strength to the validity of the rating system developed for this study. In addition, the similar findings using the two different methods give strength to notion of Type A and B differences. However, it must be noted that the two different methods are actually two variations of the same instrument.

Finally, the question of the relative attractiveness of the Type A/B related versus non-Type A/B related work environment aspects is raised. When comparing the attractiveness of the 21 work aspects, six out of the seven Type A/B related work aspects were included in the ten most attractive for Type A persons (refer to Table 6). On the other hand, only one Type A/B related aspect was included in the ten most attractive for Type B persons. This may suggest that for Type A’s, the Type A/B related aspects of a job are more salient than other job aspects (salary, working conditions, etc.), while non-Type A/B related aspects are more important for Type B’s in choosing a career.

In summary, several points seem important regarding the role of the Type A/B pattern in the career choice process.
First, students getting ready to select a job emphasize certain work aspects which reinforce their own Type A or Type B behaviors. Second, Type A's and Type B's are attracted to jobs for different reasons, whereby Type A's see certain aspects of a job as attractive while Type B's see different qualities as appealing. Third, most aspects of a job seen as attractive by Type A's are consistent with the core aspects of the Type A pattern. Fourth, the Type A/B findings which seemed inconsistent with the Type A theory may be related to methodological problems. Fifth, the different data analyses utilized which supported the Type A and B differences were discussed. Finally, the relative importance of Type A/B related work aspects was greater than non-Type A/B related aspects for Type A's, while the reverse was demonstrated for Type B's.

**Holland Type Differences**

It was anticipated that the Holland personality types would have different levels of attraction to the work environment aspects that corresponded with each type's personality traits. Previous research had revealed differences between Holland types on the 21 work aspects, when looking at workers in a job (Toejnes & Borgen, 1974; Rounds et al., 1978; Gottfredson, 1980). However, the findings of this study did not support the Holland differences found in the previous studies. With the college
sample used in this study, there were no differences in attraction to the 21 aspects revealed between the five Holland types. This finding was surprising because earlier studies had demonstrated some differences and thus raises a question about the reason for this study's unique findings. If these results are valid, they create a need for reexamination of Holland's theory. On the other hand, since several previous studies had supported Holland's viewpoint, there are questions about the validity of the current results.

One issue that should be considered is the instrumentation used to classify a person's Holland type. Holland types were classified in this study by looking at an individual's personality type as measured by the VPI. The previously mentioned studies classified people according to their job and its Holland type listed in the Occupations Finder (Holland, 1977). Therefore, previous studies comparing Holland type differences to the 21 work aspects actually were comparing the responses of people who were classified as Holland types using different methods from this study.

Another problem is the classification system used by the VPI. In this study, Holland type classifications were based only on the highest personality type score, and the other type scores were ignored. Subjects classified as
Enterprising types, for example, in many cases had very
different scores on the other five type scales. However,
the VPI system ignores these scores, and may classify
diverse people all as Enterprising types. The subjects
grouped in one Holland classification could be very
different when considering all of their personality type
scores, while subjects grouped under different types may
have had similar looking profiles when considering all six
type scores. In conclusion, the VPI classification system
used in this study, indicates a weakness in the
classification of subjects’ Holland types.

Second, the inconsistent intercorrelations between the
Holland type scores in this sample and those reported in the
VPI manual may account for the lack of support for the
Holland type hypotheses. Holland (1985) has reported a
hexagonal relationship of the six types, such that those
closer in the hexagon are higher correlated than those
further apart. Rather than fitting Holland’s hexagonal
model, the correlations found in this study were all similar
in size. These findings do not support the typical
hexagonal pattern consistent with Holland’s theory.
Instead, the Holland types in this study seem fairly equally
related. Therefore, the measurement of the Holland types in
this study is questionable.
Finally, the failure of this study to replicate earlier findings of Holland type differences may be a function of the student population used for this study versus the worker populations used in the earlier studies (Toejnes & Borgen, 1974; Rounds, et al., 1978; Gottfredson, 1980). The earlier studies addressed workers already in a job, whereas this study examined students who were looking ahead to a prospective job.

In summary, the failure of this study to replicate the findings of Holland type differences on occupational reinforcers raises measurement questions and sampling issues rather than suggesting that Holland's theory and the earlier findings are problematic. There are three considerations which may account for the failure of this study to find Holland type differences on the work environment aspects as expected. The first was the different methods of operationalizing Holland's types in this study versus previous studies. It was also suggested that the VPI system used to classify Holland types only employs the highest type score rather than the whole profile, thus grouping heterogenous persons into one type. Second, the sample's intercorrelations of the Holland type scores were inconsistent with the intercorrelations presented in the VPI manual and the hexagonal model, thus indicating weaknesses regarding the measurement of the Holland types. Third, the
student sample used in this study versus worker samples used in the previous studies may have accounted for some of the difference in findings. Each of these issues presents a question which needs to be addressed in future research.

Gender Differences

Although specific hypotheses were not formulated about gender differences, it is interesting to note that gender differences emerged in the level of attraction to certain aspects of a future job. The finding that males and females were differently attracted to work environment aspects in anticipating a future job is an indication that gender differences should be considered as a factor in the career choice process. This study’s findings support previous research in which men and women were shown to have different career orientations (Burke, 1983; 1985).

Another conclusion that can be derived from these findings is that males and females are attracted to jobs for different reasons. While many aspects of a job may be equally important for both males and females, the desire to achieve, help others, stay busy, and need for a fair and ethical work environment are more critical considerations for females than males getting ready to make a career choice. Specifically, those aspects of the job included the following: workers on the job "do their work without feeling it is morally wrong," "have good working conditions," "have
a company which administers its policies fairly," "have work where they do things for other people," "get a feeling of accomplishment," and "are busy all the time." Further support of these gender differences was provided by the profile differences developed for the 21 work aspects using the MJDQ rank scoring system. The consistency of the findings using two different methods gives strength to the notion of gender differences as an important consideration of how career choices are made.

The other important conclusion is the Type A/B pattern plays a different role for males and females when looking at their attraction to one aspect of a work environment. Specifically, Type A females are more attracted to the idea that "workers on the job have bosses who back up their workers with top management" than Type B females, while Type B males are more attracted to this notion than Type A males. It might have been anticipated that Type B males and females would be more attracted to this idea than Type A males and females, since Type B's are usually more concerned with interpersonal relationships than Type A's are. Although this notion was supported for males, surprisingly the reverse was true for females. This finding suggests that the level of managerial support in a job is most critical for Type A women, such that they not only need to achieve, but also to place importance on the supportiveness of
management. This finding needs further investigation to understand how Type A women perceive work environments differently than Type A men.

The Relationship of Type A/B Pattern and Holland Types

Another set of findings involves the relationship between the Type A/B pattern and the Holland types, as well as their interaction when considering the attraction to work environment aspects. Based on previous research findings (Martin, 1986) it was predicted that the Type A behavior pattern would be related to Holland's Enterprising and Investigative types. However, the findings of this study provided support for only a minor relationship between the Type A pattern and the Enterprising type, and demonstrated no support for the Type A - Investigative type relationship.

The findings suggest that the Type A pattern and the Holland types are separate constructs, with minimal relationship. The small association of Type A and Enterprising types may indicate that the two constructs share a few common traits such as ambitiousness, independence, and achievement-seeking. These qualities are listed in the description of both the Type A pattern and Enterprising type. It was these same components, which are also partially descriptive of the Investigative type, which made it seem likely for the Investigative type to be related to the Type A pattern. A possible explanation for the
failure to find a relationship between Type A pattern and the Investigative type may be that differences between the two constructs outweigh the few shared descriptive traits.

The study's findings suggest the Type A pattern and Holland types are two independent constructs, with a small overlap between characteristics of the Enterprising type and the Type A behavior pattern. The only other study examining the Type A-Holland types relationship (Martin, 1986) found a slightly greater association between the Type A pattern and the Enterprising type than this study (.22 versus .14, respectively), and additionally found a significant relationship between the Type A pattern and the Investigative type. Therefore, further research is needed to readdress this issue and solidify the definition of this relationship.

The previous discussion considered the relationship of the Holland types and the Type A/B constructs. Another question is whether the two constructs should be considered as independent factors in the career choice process. The findings demonstrated that Type A's and B's attraction to the work environment aspects was not moderated by their Holland type classification. This suggests that the Type A/B pattern is a separate factor in the career choice process from the personality and environment types described by Holland.
The findings of the study suggest that the Type A/B pattern and Holland types are largely independent constructs. Thus the Type A/B pattern and the Holland types need to be considered as independent factors in the career choice process. The Type A/B pattern should not be subsumed within one of Holland’s types, but rather should be recognized as an independent factor that plays a major role in the determination of a career choice.

Given that the Type A/B pattern and Holland types appear to play different roles in the career choice process, it is interesting to question why Holland’s occupational personality types and the Type A pattern might be tapping different factors in the career choice process. One possible suggestion may be that many of the characteristics of the Type A pattern seem to be more emotional, while Holland’s types appear more skill oriented. For example, the aggressive, time demanding, and competitive aspects of a potential job may tap into more of an emotional part of an individual’s decision. In contrast, the knowledge and skills required by a job may tap more into whether the job fits with a person’s vocational interests as measured by Holland’s types. However, since questions were raised earlier considering the methods used to measure Holland types, it is difficult to say whether or not the Type A/B
pattern is actually an independent factor from the Holland types in the career choice process.

In summary, several conclusions can be drawn from the findings of this study. First, the Type A/B pattern is an important factor in the career choice process, such that Type A's and B's are attracted to future jobs for different reasons. Second, Holland type is not understood to be associated with differences in the attractiveness of work environment aspects, although these findings are inconsistent with other research. Third, gender differences were noted as a factor which needs to be considered in the career choice process. It appears males and females are likely to view prospective jobs differently, and Type A females consider the supervision aspect of a job more importantly than do Type B females. Fourth, the Type A/B construct and Holland's occupational personality types seem to be two largely independent constructs. They were shown to have little overlap and may be considered as two major factors in the career choice process. Finally, concerns were presented regarding the weakness of the findings related to the Holland types. Sample and instrumentation problems may have affected these findings.

Implications of the Study

The notion that individuals consider how a prospective job will allow them to maintain and even reinforce their
Type A or Type B behavior at work appears to be an important factor in the career choice process as evidenced by this study. A major implication of this finding is the depth it gives to the understanding of the Type A pattern. Before this study, the Type A pattern was studied as a behavior related to work, yet little was voiced about whether or not it was a factor in how a person chooses an occupation. Not only can we know how a Type A or Type B person functions in a job or what behaviors they exhibit on the job, but we can also begin to address how their Type A or B tendencies may influence the choice of a job.

Furthermore, much of the Type A research has focused on describing and defining the components of the pattern, yet few studies have explored how it develops. A question which needs to be addressed is how the Type A/B pattern influences and is influenced by environments, particularly the work environment. Some previous research has raised the controversial question of whether the Type A pattern develops in adulthood as a compensatory mechanism (Steinberger, 1986) or is formed in early childhood (Matthews & Jennings, 1984). Also, although some researchers have raised the theoretical question of whether the Type A pattern is an inherent personality trait or a behavior which is reinforced by the environment (Friedman &
Rosenman, 1974), there have been few published studies which specifically examined this issue.

The present study gives one piece of data addressing these issues and raises further questions. It appears that Type A and Type B preferences are already manifested by college students who are getting ready to enter the work world. It appears that many college age individuals have already developed their Type A or Type B tendencies, whereby they seek a work environment which would reinforce these behaviors. This contradicts the assumption that Type A/B behavior is only developed after individuals are in their jobs where they are influenced by the unforeseen demands or rewards of their job.

Despite the suggestion that Type A/B preferences exist prior to beginning a career, the work environment’s role in the Type A pattern’s developmental course remains cloudy. It is uncertain what happens to Type A or B behavior when college students’ expectations of the work environment in an upcoming job are reinforced or not reinforced in their job. There may be another process where the environment of a job changes some people from Type A to Type B or vice versa after they have worked there for a period and are "shaped" by the environment. The exploration of how people change in their Type A/B behaviors before and after obtaining a job,
and how occupations reinforce those behaviors would be fruitful topics for future research in the Type A area.

The other theoretical implication of this study is that vocational choice research needs to consider factors such as the Type A/B behavior pattern. Similar to the career choice process of the vocational interests-job match is the independent process of a job potentially reinforcing a person's Type A or Type B behaviors. Therefore, vocational choice theory should focus not only on the matching of vocational interests and personalities with suitable work environments, but also on whether or not a work environment reinforces a person's Type A or Type B characteristics. Specifically, those aspects of a career choice which make a difference for Type A's and Type B's are their need for: a) trying out one's own ideas, b) making decisions on one's own, c) having opportunities for advancement, d) staying busy all the time, e) having the position of "somebody" in the community, f) planning one's work with little supervision, g) making use of one's individual abilities, and h) having co-workers who are easy to make friends with.

The importance of the Type A/B pattern in the career choice process also has practical implications for those who professionally deal with career guidance. The most obvious implication is that practitioners be sensitive to and discuss the Type A/B qualities of the client. The focus of
career counseling must be open to considering Type A/B characteristics in addition to vocational interests, abilities and other factors. This would be particularly important when problems such as stress and job-related anxiety or depression are evidenced by a client. It may be appropriate to add an evaluation or measurement of the Type A/B pattern to the battery of tests given in career counseling. This would aid both the client and counselor in discussing Type A/B considerations of a future career choice.

Finally, organizational psychologists need to focus more on the implications of how Type A versus Type B work environments influence employees. These psychologists need to be aware that Type A or B aspects of a work environment are factors for many individuals' choice of a job. Questions such as what jobs are doing to reinforce Type A behavior and the ethical problems about physical and emotional health need to be addressed. Interventions could be implemented on the job in order to treat the emotional and physical manifestations of the Type A behavior.

Limitations of the Study

There are several limitations to be discussed which are classified as internal and external validity issues. The internal validity issues pertain to how the variables in the study were measured. The first limitation concerns the
self-report nature of the data which was obtained using paper and pencil measures of the variables. Subjects' responses may have been affected by a variety of factors which biased the data collected. The large number of items each subject answered (231 items) could have led subjects to respond in a determined manner, such as agreeing with more positive than negative items or responding in a socially desirable manner. These are problems inherent in any study utilizing self-report, paper and pencil measures to collect data.

Related to the nature of the instruments are internal validity issues concerning the scoring of the instruments. For the Jenkins Activity Survey-student version, the scoring procedure used a cut-off point to differentiate Type A's from Type B's. Although this method has been validated in the past, there is a risk of subjects who scored near the cut-off point being misclassified. Those subjects near the middle were still classified as Type A's or B's, yet they may be very different conceptually from those who have more extreme scores. A scoring system which uses more stringent classification criteria and only classifies more extreme scores as Type A's or Type B's may identify "truer" Type A and Type B individuals. Although there are no such instruments currently available, efforts to more accurately assess the active components of the Type A pattern are in
progress (McCurdy & Wright, 1986; Wright & Schimdt-Walker, 1986).

The Vocational Preference Inventory, used for classifying the Holland types, also has an inherent weakness as mentioned earlier. Although subjects receive scores along all six scales (which correspond with the six types) they are only classified as a single type utilizing their highest score. Although the subjects' type gives information about their most predominant personality characteristics, it omits the second through sixth highest scores. A view of a subject's profile of scores, considering all six Holland types would give a more complete and accurate description of their personality traits.

Lastly, the adaptation of the Minnesota Job Description Questionnaire from rankings to Likert rating scales for the 21 work environment dimensions has untested reliability and validity. The scores from the sample used in this study demonstrated considerable variability across the eleven points of each scale, yet many scores were distributed at the upper limits of the scale, thus causing ceiling effects. This problem may be attributed to the general nature of the work dimensions. Future studies looking at college students' job preferences should develop dimensions which tap more specific aspects of a future job.
A major limitation concerning the external validity is the nature of the college sample. The generalization of the study's findings is limited by the fact of the undergraduate students, while representing several academic fields of study, do not fully represent the wide variety of majors that subjects could have come from. Students majoring in the arts and sciences were underrepresented in the sample. Consequently, the findings do not generalize to broader undergraduate student populations. In addition, the findings are not generalizable beyond an undergraduate population to a population of professional workers. The findings are limited to a college student population, not people in general.

Second, conclusions made about the career choice process are based on anticipations of a future career choice by students rather than actual career choices. Studies which examine the past career choices of individuals in a job would give a more behavioral measure of how job choices are made.

A third external validity issue is the limited scope of the study in regard to the developmental aspects of the Type A/B behavior pattern. This study measured the Type A/B pattern during the later college years, yet it does not address how the college environment has reinforced or elicited the Type A or Type B pattern. In addition, this
study is limited because it does not address the Type A/B pattern’s development before the college years. Although this study does provide one link in ascertaining the developmental course of the Type A/B pattern, more research is needed at earlier, as well as later, points in life.

In summary, the major limitations of the study can be divided into internal and external validity issues. They include the self-report nature of the data, instrumentation problems, and generalizability of the findings to other populations. It is important to remember that the findings concerning the Holland types and its relationship to the Type A/B pattern are limited due to the nature of the measurement used for the Holland types. The findings of this study must be interpreted cautiously, keeping in mind both the internal and external validity issues.

Future Directions for Research

There are several potentially interesting directions for future research concerning Type A behavior and its role in the career choice process. The first direction involves clarifying the external validity of this study’s findings by further exploration of the Type A pattern’s role in the career choice process with different populations. This study’s findings only begin to address this issue, and many questions remain to be answered. While the present findings suggest that the Type A behavior pattern is an important
factor in the career choice process, future research could address the same question from a retrospective position. By studying working professionals rather than college students, it could be determined if workers viewed the Type A/B aspects of the work environment as influencing a past job choice or job change.

A second issue that could be further addressed is the relative importance of Type A behavior in the career choice process compared to other factors. Not only was Type A behavior shown to be an important factor, but the question of how significant it is relative to other variables was addressed. Future research comparing the Type A/B variable to other career choice variables such as vocational interests, skills and abilities, salary level, and others would help determine the degree of importance that the Type A/B pattern has in the career choice process.

A third issue for future research about the Type A/B pattern is whether particular jobs have more Type A reinforcers than other jobs. The Type A pattern may be a more salient factor for choosing specific kinds of jobs. If some types of jobs are more reinforcing of Type A behavior, the next question then is which jobs are the most reinforcing. Future research using systems of job classifications such as Holland’s Occupations Finder or other systems could explore the possibility of locating
certain Type A-prone jobs and further study job-related aspects of the Type A pattern. In addition, the identification of potential Type A-prone jobs would help pinpoint populations for health care education, prevention, and treatment interventions for the physical and psychological aspects of the Type A behavior pattern.

Research which further investigates the critical components comprising the Type A pattern and its developmental course would be fruitful. In addition, better measurement is essential for further defining the Type A/B behavior pattern. Recent research by Wright (1988) appears to be making headway in defining and measuring some of the core aspects of the Type A pattern. However, the role of the environment and issues related to the development of the Type A pattern remain to be answered. Do the Type A characteristics develop in the pre-career stage of childhood or adolescence (Matthews & Volkin, 1981) and cause a person to choose reinforcing circumstances throughout life which reinforce that behavior? Or does Type A behavior usually develop as a response to uncontrollable stress or high job demands in adulthood or later life (Steinberger, 1986)? Longitudinal research which follows the course of Type A and Type B behavior throughout the lifespan would contribute much needed information about its origin and developmental
course, and provide valuable data about its relationship with both career and non-career related variables.

Finally, future research in the Type A/B and Holland type areas require moving beyond self-report measures to more behavioral measures. In particular, different methods are necessitated for operationalizing the Holland types, and considerations should be made for using Holland profiles of all six type scores rather than a only a single type.

In summary, several directions for future research have been suggested. First, it was proposed that the role of the Type A behavior pattern in career choice should be further explored. Addressing career choice questions to workers already in a job was suggested, along with tapping the relative importance of the Type A/B factor compared with other career choice variables. Second, questions were raised about the Type A-proneness of particular occupations and the ethical and intervention issues that would need to be addressed with these jobs. Finally, it was stated that although the Type A literature continues to research various behavior and health-related aspects, more attention is needed in redefining the critical components of the Type A behavior pattern, with emphasis placed on defining the role of the environment and the developmental course of the pattern.
Summary

This study demonstrated that the Type A/B pattern is a significant factor in the career choice process. Type A's and Type B's displayed different levels of attraction to several aspects of a work environment in anticipating a career choice. The study also revealed that the Type A/B pattern and Holland types are largely independent constructs and play separate roles in the career choice process. Gender was also demonstrated as a factor to be considered in the vocational choice process. Females were more attracted than males to several aspects of a work environment.

The internal and external validity of the study's findings need to be considered. There were several questions raised about the validity of the measurements, most notably the Holland type classification system. Future research about the Type A/B pattern's role in the career choice process should examine worker populations who have already made a career choice. Finally, more research is needed investigating the critical components and development of the Type A pattern.
APPENDIX A

INFORMED CONSENT
Informed Consent

Your participation is requested in the following research study. You will be asked to complete three questionnaires for the study which measure several components of personality and the attractiveness of different work conditions. This information will be used to gain more understanding of the role of personality variables in the career choice process.

There will be no physical or psychological risks in participating in this study, and your responses will remain completely confidential. At any time you may choose not to continue in this research study; if you choose not to go on, I thank you for considering to serve as a subject. If you choose to continue, I will assume that you are giving your consent to be a subject. For those who participate in the study and would like a summary of the results after the study’s completion, please request this below and give a mailing address for the results to be sent to you.

I have received a clear explanation and understand the nature of this study, and I have received an explanation of the benefits of the research. I understand that I may withdraw my consent at any time. Having received this information, I voluntarily consent to participate in the study.

Name

Date

I would like a summary of the results mailed to me. Yes No

Street Address

City/State Zip
APPENDIX B

COVER LETTER
Dear Participant:

I am currently engaged in a study looking at the role of specific personality variables in the career choice process. Enclosed are three relatively brief questionnaires which measure behavior patterns, occupational personality and career interests, and the attractiveness of different work conditions. On the three questionnaires, please respond to all items and answer directly on the questionnaires themselves.

Please take these questionnaires home, complete them within the next few days, and bring the entire packet with all 3 completed questionnaires back to your class. I have specified that I will come to pick up the packets on [specified date] from your class. Messages or questionnaires can also be left in Dr. Campbell’s box in the Psychology Office, Terrill Hall Room 351, or sent through campus mail. If you have further questions concerning the study or the questionnaires, please feel free to call me at (214) 348-0847.

Thank you very much for your cooperation.

Kyle Martin

__________________________________________
Last 4 digits of Soc. Security # Date

__________________________________________
Major Class (Fr, Soph, Jr, Sr, Grad)

Age Sex

Projected Career Field
This questionnaire is concerned with career choice and the attractiveness of specific conditions of a job that influence career choice. In anticipating your own selection of a career, you are asked to read these statements, and rank them on how attractive they would be to you in a job.

Statements about the job conditions are in groups of five. You are asked to consider each group of five individually and rank the five statements for their attractiveness to you, using the numbers "1" to "5". Then go to the next group of five statements and make the same kind of ranking.

For example, your answers on a group of statements might look like this:

Workers on the job...

__4__ get full credit for the work they do.
__3__ are of service to other people.
__1__ have freedom to use their own judgment.
__5__ do new and original things on their own.
__2__ have the chance to get ahead.

This means that, of the five statements, you consider "have freedom to use their own judgment" as most attractive to you; "have the chance to get ahead" as the next most attractive; and so on.

You will find some of these comparisons more difficult to make than others, but it is important that you rank every statement in each group.

All information will be held in the strictest confidence.
Please rank the five statements in each group about work environments for their attractiveness to you. Write a "1" by the statement which is most attractive; write a "2" by the statement which is next most attractive; continue ranking all five statements, using a "5" for the statement which is the least attractive to you.

1. Workers on the job...

    _____ are busy all the time.
    _____ have work where they do things for other people.
    _____ try out their own ideas.
    _____ are paid well in comparison with other workers.
    _____ have opportunities for advancement.

2. Workers on the job...

    _____ have work where they do things for other people.
    _____ have something different to do every day.
    _____ get a feeling of accomplishment.
    _____ have bosses who train their workers well.
    _____ have a company which administers its policy fairly.

3. Workers on the job...

    _____ do work without feeling that it is morally wrong.
    _____ have bosses who back up their workers (w/ top management).
    _____ have something different to do every day.
    _____ make use of their individual abilities.
    _____ are busy all of the time.

4. Workers on the job...

    _____ have a company which administers its policies fairly.
    _____ try out their own ideas.
    _____ make use of their individual abilities.
    _____ have co-workers who are easy to make friends with.
    _____ have the position of "somebody" in the community.
5. Workers on the job...

- have bosses who train their workers well.
- plan their work with little supervision.
- have bosses who back up their workers (w/ top management).
- try out their own ideas.
- have good working conditions.

6. Workers on the job...

- receive recognition for the work they do.
- do work without feeling that it is morally wrong.
- plan their work with little supervision.
- have work where they do things for other people.
- have co-workers who are easy to make friends with.

7. Workers on the job...

- have bosses who back up their workers (w/ top management).
- have a company which administers its policies fairly.
- are paid well in comparison with other workers.
- receive recognition for the work they do.
- tell other workers what to do.

8. Workers on the job...

- have something different to do every day.
- have co-workers who are easy to make friends with.
- make decisions on their own.
- have good working conditions.
- are paid well in comparison with other workers.

9. Workers on the job...

- make use of their individual abilities.
- tell other workers what to do.
- have good working conditions.
- have steady employment.
- have work where they do things for other people.
10. Workers on the job...

- make decisions on their own.
- are busy all of the time.
- have steady employment.
- have a company which administers its policies fairly.
- plan their work with little supervision.

11. Workers on the job...

- get a feeling of accomplishment.
- make decisions on their own.
- tell other workers what to do.
- do work without feeling that it is morally wrong.
- try out their own ideas.

12. Workers on the job...

- have co-workers who are easy to make friends with.
- have steady employment.
- have opportunities for advancement.
- have bosses who back up their workers (w/ top management).
- get a feeling of accomplishment.

13. Workers on the job...

- plan their work with little supervision.
- have opportunities for advancement.
- have the position of "somebody" in the community.
- tell other workers what to do.
- have something to do different every day.

14. Workers on the job...

- are paid well in comparison with other workers.
- get a feeling of accomplishment.
- do their work alone.
- plan their work with little supervision.
- make use of their individual abilities.

15. Workers on the job...

- tell other workers what to do.
- have bosses who train their workers well.
- have co-workers who are easy to make friends with.
- are busy all of the time.
- do their work alone.
16. Workers on the job...

- have steady employment.
- are paid well in comparison to other workers.
- have bosses who train their workers well.
- have the position of "somebody" in the community.
- do work without feeling that it is morally wrong.

17. Workers on the job...

- do their work alone.
- have the position of "somebody" in the community.
- have work where they do things for other people.
- have bosses who back up their workers (w/ top management).
- make decisions on their own.

18. Workers on the job...

- try out their own ideas.
- receive recognition for the work they do.
- have something different to do every day.
- do their work alone.
- have steady employment.

19. Workers on the job...

- have opportunities for advancement.
- make use of their individual abilities.
- receive recognition for the work they do.
- make decisions on their own.
- have bosses who train their workers well.

20. Workers on the job...

- have good working conditions.
- do their work alone.
- have a company which administers its policies fairly.
- have opportunities for advancement.
- do work without feeling that it is morally wrong.
21. Workers on the job...

____ have the position of "somebody" in the community.
____ have good working conditions.
____ are busy all the time.
____ get a feeling of accomplishment.
____ receive recognition for the work they do.
On this page you are asked to do something different. This time, consider each statement individually and rate on a "1 to 11" scale how attractive it is to you in a potential job, giving a "1" for "not attractive," and giving an "11" for "very attractive".

<p>| | | | | | | | | | | |</p>
<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
|    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11
| not attractive |   |   |   |   |   |   |   |   |   |   |   |
| very attractive |

Circle the appropriate number for each of these statements.

Workers on the job...
1. make use of their individual abilities.
   1 2 3 4 5 6 7 8 9 10 11

2. get a feeling of accomplishment.
   1 2 3 4 5 6 7 8 9 10 11

3. are busy all the time.
   1 2 3 4 5 6 7 8 9 10 11

4. have opportunities for advancement.
   1 2 3 4 5 6 7 8 9 10 11

5. tell other workers what to do.
   1 2 3 4 5 6 7 8 9 10 11

6. have a company which administers its policies fairly.
   1 2 3 4 5 6 7 8 9 10 11

7. are paid well in comparison with other workers.
   1 2 3 4 5 6 7 8 9 10 11

8. have co-workers who are easy to make friends with.
   1 2 3 4 5 6 7 8 9 10 11

9. try out their own ideas.
   1 2 3 4 5 6 7 8 9 10 11

10. do their work alone.
    1 2 3 4 5 6 7 8 9 10 11
11. do work without feeling that it is morally wrong.
   1  2  3  4  5  6  7  8  9  10  11

12. receive recognition for the work they do.
   1  2  3  4  5  6  7  8  9  10  11

13. make decisions on their own.
   1  2  3  4  5  6  7  8  9  10  11

14. have steady employment.
   1  2  3  4  5  6  7  8  9  10  11

15. have work where they do things for other people.
   1  2  3  4  5  6  7  8  9  10  11

16. have the position of "somebody" in the community.
   1  2  3  4  5  6  7  8  9  10  11

17. have bosses who back up their workers (with top management).
   1  2  3  4  5  6  7  8  9  10  11

18. have bosses who train their workers well.
   1  2  3  4  5  6  7  8  9  10  11

19. have something different to do every day.
   1  2  3  4  5  6  7  8  9  10  11

20. have good working conditions.
   1  2  3  4  5  6  7  8  9  10  11

21. plan their work with little supervision.
   1  2  3  4  5  6  7  8  9  10  11
APPENDIX D

QUESTIONNAIRE #2
THE VOCATIONAL PREFERENCE INVENTORY

This is an inventory of your feelings and attitudes about many kinds of work. Fill in the blank next to each item listed with either a "1" or "2" by following the directions given below:

1. Show which occupations interest or appeal to you by writing a "1" in blank next to the occupation.
2. Show which occupations you dislike or find uninteresting by writing a "2" in the blank next to the occupation.
3. Do not write anything in the blank when you are undecided about an occupation.

1. Airplane Mechanic
2. Meteorologist
3. Sociologist
4. Bookkeeper
5. Speculator
6. Poet
7. Fish & Wildlife Specialist
8. Biologist
9. High School Teacher
10. Business Teacher
11. Buyer
12. Symphony Conductor
13. Auto Mechanic
14. Astronomer
15. Juvenile Delinquency Expert
16. Budget Reviewer
17. Advertising Executive
18. Musician
19. Carpenter
20. Medical Laboratory
21. Speech Therapist
22. Certified Public Accountant
23. Manufacturer's Representative
24. Author
25. Power Shovel Operator
26. Anthropologist
27. 33. School Principal
34. Court Stenographer
35. Hotel Manager
36. Free-Lance Writer
37. Construction Inspector
38. Chemist
39. Playground Director
40. Bank Teller
41. Business Executive
42. Musical Arranger
43. Radio Operator
44. Independent Research Scientist
45. Clinical Psychologist
46. Tax Expert
47. Restaurant Manager
48. Journalist
49. Gas Station Worker
50. Writer of Science Articles
51. Social Sciences Teacher
52. Inventory Controller
53. Master Ceremonies
54. Portrait Artist
55. Tree Surgeon
56. Journal Editor
57. Welfare Agency Director
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<th>Occupation</th>
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<tr>
<td>27.</td>
<td>Marriage Counselor</td>
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<td>28.</td>
<td>Credit Investigator</td>
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<td>Television Producer</td>
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<td>30.</td>
<td>Commercial Artist</td>
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<td>31.</td>
<td>Surveyor</td>
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<td>32.</td>
<td>Zoologist</td>
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<td>58.</td>
<td>IBM Equipment Operator</td>
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<td>Salesperson</td>
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<td>Concert Singer</td>
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<td>61.</td>
<td>Long Distance Bus Driver</td>
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<td>62.</td>
<td>Geologist</td>
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<td>63.</td>
<td>Youth Camp Director</td>
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<td>64.</td>
<td>Financial Analyst</td>
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<td>65.</td>
<td>Real Estate Salesperson</td>
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<td>66.</td>
<td>Composer</td>
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<tr>
<td>67.</td>
<td>Locomotive Engineer</td>
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<tr>
<td>68.</td>
<td>Botanist</td>
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<tr>
<td>69.</td>
<td>Personal Counselor</td>
</tr>
<tr>
<td>70.</td>
<td>Cost Estimator</td>
</tr>
<tr>
<td>71.</td>
<td>Publicity Director</td>
</tr>
<tr>
<td>72.</td>
<td>Scultor/Sculptress</td>
</tr>
<tr>
<td>73.</td>
<td>Machinist</td>
</tr>
<tr>
<td>74.</td>
<td>Scientific Research Worker</td>
</tr>
<tr>
<td>75.</td>
<td>Psychiatric Case Worker</td>
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<td>76.</td>
<td>Payroll Clerk</td>
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<td>77.</td>
<td>Sports Promotor</td>
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<td>78.</td>
<td>Playwright</td>
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<tr>
<td>79.</td>
<td>Electrician</td>
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<tr>
<td>80.</td>
<td>Physicist</td>
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<td>81.</td>
<td>Vocational Counselor</td>
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<td>82.</td>
<td>Bank Examiner</td>
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<td>83.</td>
<td>Sales Manager</td>
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<tr>
<td>84.</td>
<td>Cartoonist</td>
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APPENDIX E

QUESTIONNAIRE #3
Please answer the questions on the following pages by circling the number of the best answer for each item for you. Each person is different, so there are no "right" or "wrong" answers. Of course, all you tell us is strictly confidential-- to be seen only by the research team. Do not ask anyone else about how to reply to the items. It is your personal opinion that we want. Your cooperation will be greatly appreciated.

1. Is your everyday life filled mostly by:
   1. Problems needing solutions.
   2. Challenges needing to be met.
   3. A rather predictable routine of events.
   4. Not enough things to keep me interested or busy.

2. When you are under pressure or stress, do you usually:
   1. Do something about it immediately.
   2. Plan carefully before taking any action.

3. Ordinarily, how rapidly do you eat?
   1. I'm usually the first one finished.
   2. I eat a little faster than average.
   3. I eat at about the same speed as most people.
   4. I eat more slowly than most people.

4. Has a good friend (or spouse) ever told you that you eat too fast?
   1. Yes, often.
   2. Yes, once or twice.
   3. No, no one has told me this.

5. When you listen to someone talking, and this person takes too long to come to the point, do you feel like hurrying him/her along?
   1. Frequently.
   2. Occasionally.
   3. Almost never.

6. How often do you actually "put words in his/her mouth" to speed things up?
   1. Frequently.
   2. Occasionally.
   3. Almost never.
7. If you tell a close friend (or spouse) that you will meet them somewhere at a definite time, how often do you arrive late?
   1. Once in a while.
   2. Rarely.
   3. I am never late.

8. Do most people consider you to be:
   1. Definitely hard-driving and competitive?
   2. Probably hard-driving and competitive?
   3. Probably more relaxed and easy-going?
   4. Definitely more relaxed and easy-going?

9. Nowadays, do you consider yourself to be:
   1. Definitely hard-driving and competitive?
   2. Probably hard-driving and competitive?
   3. Probably more relaxed and easy-going?
   4. Definitely more relaxed and easy-going?

10. How would your closest friend (or spouse) rate you?
    1. Definitely hard-driving and competitive?
    2. Probably hard-driving and competitive?
    3. Probably more relaxed and easy-going?
    4. Definitely more relaxed and easy-going?

11. How would your best friend (or spouse) rate your general level of activity?
    1. Too slow. Should be more active.
    2. About average. Is busy much of the time.
    3. Too active. Needs to slow down.

12. Would people who know you well agree that you have less energy than most people?
    1. Definitely Yes.
    2. Probably Yes.
    3. Probably No.
    4. Definitely No.

13. How was your temper when you were younger?
    1. Fiery and hard to control.
    2. Strong, but controllable.
    3. No problem.
    4. I almost never got angry.
14. How often are there deadlines in your courses? (If deadlines occur irregularly, please circle the closest answer below.)
   1. Daily or more often.
   2. Weekly
   3. Monthly
   4. Never

15. Do you ever set deadlines or quotas for yourself in courses or other things?
   1. No.
   2. Yes, but only occasionally.
   3. Yes, once per week or more often.

16. In school, do you ever keep two projects moving forward at the same time by shifting back and forth rapidly from one to the other?
   1. No, never.
   2. Yes, but only in emergencies.
   3. Yes, regularly.

17. Do you maintain a regular study schedule during vacations such as Thanksgiving, Christmas, and Easter?
   1. Yes.
   2. No.
   3. Sometimes.

18. How often do you bring your work home with you at night or study materials related to your courses?
   1. Rarely or never.
   2. Once a week or less often.
   3. More than once a week.

19. When you are in a group, do other people tend to look to you to provide leadership?
   1. Rarely.
   2. About as often as they look to others.
   3. More often than they look to others.

20. In sense of responsibility, I am:
   1. Much more responsible.
   2. A little more responsible.
   3. A little less responsible.
   4. Much less responsible.

21. I approach life in general:
   1. Much more seriously.
   2. A little more seriously.
   3. A little less seriously.
   4. Much less seriously.
APPENDIX F

DISTRIBUTION OF COLLEGE MAJORS
## Distribution of College Majors

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<th>Frequency</th>
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<td>Finance</td>
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<td>Journalism</td>
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<td>(Liberal Arts)</td>
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<td>Industrial Technology</td>
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<td>Radio, Television, Film</td>
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<td>Clothing &amp; Textiles</td>
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APPENDIX G

DISTRIBUTION OF PROJECTED CAREERS
## Distribution of Projected Careers

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<td>Business</td>
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<td>Speech</td>
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<td>Consulting/Teaching</td>
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<td>Probation/Corrections</td>
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<td>Radio, Television, Film</td>
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<td>Industrial Arts</td>
<td>1</td>
<td>.4%</td>
</tr>
</tbody>
</table>

| SUBTOTAL                          | 224       |
| MISSING DATA                      | 61        |
| TOTAL                             | 285       |
REFERENCES


