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RELATIONSHIPS BETWEEN PARENT'S AND THEIR CHILDREN'S VOCATIONAL PERSONALITY TYPES

By

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ABSTRACT

RELATIONSHIPS BETWEEN PARENT'S AND THEIR CHILDREN'S VOCATIONAL PERSONALITY TYPES

By

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The general purpose of this study was to explore John Holland's (1973, 1985) premise that children adopt the same personality types as their parents. More specifically, this study was designed to look further into Smart's (1989) assertion that the Social personality type when found in parents may have a greater probability of influencing the personality type of children than each of the other five personality types described by Holland. The data for this study were based on information provided by clients of the Lansing Community College Career and Exploration Assessment Center (CEAC) from 1988 through 1991. A total of 428 client intake sheets were selected for use based on form completion. CEAC provides services to both students and non-students from Ingham County, regardless of gender, race, age, education level, or work experience.

Each client's personality type was determined qualitatively from his or her current occupation as described in Dictionary

of Holland Vocational Profiles (Gottfredson, 1989). The chi-square goodness-of-fit test was used to determine statistical significance in comparisons between the proportions of parents and clients (children) as grouped by personality type and the corresponding variables of interest (gender, age, or education level). Among the results, fathers were found to more likely influence the personality types of their sons than their daughters. This relationship was particularly strong for fathers and clients with Realistic personality types. Mothers were more likely to influence the personality types of their daughters than their sons, particularly when mothers and clients had either Conventional or Social personality types.

The results of this study can help career counselors better understand the influence of parents on their children's occupational choice as indicated by parental personality type profiles.

Dedicated to

my parents, Bud and JoAnn Frye and

my grandmother, Jesteen Fischer,

for their unconditional love and encouragement

and

to my daughters Rachel and Audrey Montgomery,

with the hope that the world that they are growing into

will encourage them as women

to aspire to and realize their dreams.

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION AND OVERVIEW OF THE PROBLEM

Background and Need

In today's changing job market, there is an increasing need to make sound career choices and to establish a progressive career plan. It is estimated that on the average people will change careers eight times during the course of their working lives; the average job seeker changing jobs every three and one-half years (Bolles, 1985). In response to an increasingly competitive job market, many individuals are seeking assistance with career planning, career decision making, and job training through universities and community colleges. Career counselors at institutions of higher education are challenged to keep abreast of new ideas and approaches in the career planning and decision making process to better advise students.

Helping people make successful career decisions requires an analysis of an individual's skills, interests and personality. John Holland, a major researcher in the career development field, believed that interests and personality are one and the same. This idea provided one of the background principles for his theory of vocational

personalities and work environments.

> If vocational interests are construed as an expression of personality, then they represent the expression of personality in work, school subjects, hobbies recreational activities, and preferences. In short, what we have called 'vocational interests' are simply another aspect of personality (Holland, 1973, 1985).

Holland identified personality as a major factor in determining a successful career choice.

> Vocational satisfaction, stability, and achievement depend on the congruence between one's personality and the environment(composed largely of other people) in which one works. Just as we are more comfortable among friends whose tastes, talents, and values are similar to our own, so we are more likely to perform well at a vocation in which we 'fit' psychologically (Holland, 1973).

The incorporation of Holland's theory into the Strong-Campbell Interest Inventory (SCII) has made the interest inventory a valuable tool for career and curriculum decision making by college students. The Strong-Campbell Interest Inventory identifies the Holland personality type of the individual taking the interest inventory and provides information on work environments that reward individuals for those particular personality types. For example, a student scoring high in the personality type for organizing and need for structure would match a structured work environment such as accounting, secretarial, or computers. This process of

matching the personality to the work environment allows the counselor and student to identify which work environments the student would find most satisfying based on their personality type and preferences. College and university counseling centers use the Strong-Campbell Interest Inventory more frequently than any other test (Sell & Torres-Henry, 1979).

The analysis of interests has become a commonly accepted means for determining vocational personality type; however, according to Campbell (1981):

> almost no knowledge exists about the ways in which various patterns of interest develop. Virtually all of the previous research has concentrated on the technology of measuring interests, describing group characteristics, determining the degree of predictability of vocational behavior by inventoried interests, or studying other correlates of interests.

Holland believed that personality type, or patterns of interests, are developed in individuals initially through parental influence. This influence leads individuals to develop interests in certain types of activities and situations, and an avoidance of others. This initial personality development is re-evaluated through life experiences with peers, education, and work environments.

Holland (1985) suggested that the outcome of a personality type can be distinguished by a:

> characteristic disposition or personality type that is predisposed to exhibit characteristic behavior and to develop characteristic personality traits, attitudes, and behaviors that in turn form repertories collections of skills and coping mechanisms (Holland, 1985)

Holland (1973,1985) identified six different personality types: Realistic (R); Investigative (I); Artistic (A); Social (S); Enterprising (E); and Conventional (C).

Realistic (R) types are characterized by their:

> preference for activities that entail the explicit, ordered, or systematic manipulation of objects, tools, machines, animals, and to an aversion to educational or therapeutic activities. These behavioral tendencies lead in turn to the acquisition of manual, mechanical, agricultural, electrical, and technical competencies and to a deficit in social and educational competencies (Holland, 1973,1985).

The investigative, or (I), personality type is described as having:

> a preference for activities that entail the observational, symbolic,systematic, and creative investigation of physical, biological, and cultural phenomena in order to understand and control such phenomena: and to an aversion to persuasive, social, and repetitive activities. These behavioral tendencies lead in turn to an acquisition of scientific and mathematical competencies and to a deficit in persuasive competencies (Holland, 1973,1985)

The artistic (A) person is believed to have:

> a preference for ambiguous, free, unsystematized activities that entail the manipulation of physical, verbal, or human materials to create art forms or products, and to an aversion to explicit, systematic, and ordered activities. The behavioral tendencies lead, in turn, to an acquisition of artistic competencies - language, art, music, drama,writing - and to a deficit in clerical or business system competencies (Holland, 1973,1985).

The social (S) personality has an apparent:

> preference for activities that entail the manipulation of others to inform, train, develop, cure, or enlighten; and an aversion to explicit, ordered, systematic activities involving materials, tools, or machines. These behavioral tendencies lead in turn to an acquisition of human relations competencies such as interpersonal and educational competencies and to a deficit in manual and technical competencies (Holland, 1973,1985).

Holland (1973, 1985) describes the enterprising (E) personality type as one who demonstrates:

> a preference for activities that entail the manipulation of others to attain organizational goals or economic gain; and an aversion to observational, symbolic, and systematic activities. These behavioral tendencies lead in turn to an acquisition of leadership, interpersonal and persuasive competencies, and to a deficit in scientific competencies.

The conventional (C) personality type exhibits:

> a preference for activities that entail the explicit, ordered, systematic manipulation of data, such as keeping records, filing materials, reproducing materials, organizing written and numerical data according to a prescribed plan, operating business machines and data processing machines to attain organizational or economic goals; and to an aversion to ambiguous, free, exploratory, or unsystematized activities. These behavioral tendencies lead in turn to an acquisition of clerical, computational, and business system competencies and to a deficit in artistic competencies (Holland, 1973,1985).

According to Holland's theory, these characteristic preferences in personality greatly influence career choice. Therefore, to understand career decision making, it becomes increasingly important to understand how personality develops and how parental influences impact personality type development of their offspring. This influence has been documented by Eberhardt and Muchinsky (1982), Neiner and Owens (1985) and Smart (1989). Holland (1973, 1985) also believed that "To some degree, types produce types."

Smart (1989) investigated the relative influence of selected life history experiences (gender, socioeconomic status, parents' occupations) and their influence on the development of three vocational types proposed by Holland (Social, Enterprising, and Investigative). His findings support Holland's general premise that vocational type development is related to a complex series of events including family

backgrounds, initial personal orientations, occupational preferences and experiences in college. Based on his own research, Smart suggested that further research might examine the premise that Social type parents produce Social type offspring more than either Investigative or Enterprising parental types.

Purpose

The purpose of this study was to explore Smart's (1989) suggestion that the Social (S) personality type, when found in parents, may have a greater probability of influencing the personality type of their children than the other five personality types, as described by Holland (1973, 1985). The influence of parental personality type, as expressed by vocation, was investigated and compared to personality type development in children as expressed by chosen occupation. The influence of each of the six personality types was compared by gender, age, and educational level, as sample sizes permitted.

Broader studies on life history influences have been conducted by Eberhardt & Muchensky (1982, 1984), Neiner & Owen (1985), Smart (1989) and others. Other life history influences explored in prior studies included gender, ethnic background, parental income levels, type of college attended, and extent of college education as well as parental personality type. Although these studies cite that parent

personality type is an influencing factor, the studies have not determined if one or more of the six types have a greater probability of influencing their children's personality type.

The selection of parental personality type as a factor in influencing offspring was guided by the results of the Smart's (1989) study which suggested further investigation on the development of type, and to test the premise that Social type parents may have greater influence on their children than other personality types, specifically Enterprising (E) and Investigative (I). Research related to the influence of parental personality type on their children's personality type would contribute to existing knowledge of how personality and interests are developed, as well as provide a greater understanding for career counselors on factors influencing career choice, and further investigate the significance of Holland's theory.

Null Hypotheses

Allowing for Holland's premise that personality type in parents produce similar personality type in their offspring, as tested by Smart, the following research questions were developed:

1. Did each of the six personality types described by Holland (1973,1985) influence their offspring equally, and/or which types, if any, have a higher probability of influencing their offspring than the others?

2. Were females or males more or less likely to be influenced by their parents?
3. Were mothers or fathers more/or less likely to influence their children?
4. Did the significance of parental influence differ between same sex or opposite sex offspring?
5. Was it more/or less probable that non-college attendees show a positive relationship between their parents and their own personality types than college attendees?
6. Was it more probable that individuals age twenty two and under, twenty three to twenty nine, or thirty years and older show a positive relationship between parental influence and career choice.

To answer these questions the following six null hypotheses were developed:

1. The frequency distribution shows no significant difference between each of the parental personality type's influence on their children's personality type.
2. The frequency distribution for parental influence on females was not significantly different from the frequency distribution for parental influence on males.
3. The frequency distribution for mothers' influence on their offspring was not significantly different from the frequency distribution for fathers' influence on their offspring.

4. The frequency distribution for parental influence on same sex offspring was not significantly different from the frequency distribution for parental influence opposite sex offspring.
5. The frequency distribution for parental influence on non-college attendees was not significantly different from the frequency distribution for parental influence on college attendees, and college graduates.
6. The frequency distribution for parental influence on offspring age twenty two and under, and age twenty three to twenty nine, was not significantly difference from the frequency distribution for offspring thirty and over.

The significance of difference between the six personality types in parents and the extent to which they influence their children's personality type would add further understanding of the role that parental personality type plays in influencing the development of personality types in their children.

Theory

For the purpose of this study, Holland's theory of vocational personality and work environments (1973, 1985) was used. Among the principle factors in Holland's theory is that most individuals can be characterized by their resemblance to each of six personality types: realistic (R), investigative (I),

artistic (A), social (S), enterprising(E), and conventional (C), as described previously. Holland (1973,1985) suggested that the development of vocational types results from several genetic, cultural, personal, and environmental forces. Parent personality type would be a major contributing factor to initial type development in their children; however this initial influence is often challenged and sometimes confirmed as a result of participation in school, college, and employment.

According to Holland (1973, 1985):

> the pairing of persons and environments leads to outcomes that we can predict and understand from our knowledge of the personality types and the environmental models. These outcomes include vocational choice, vocational stability and achievement, educational choice and achievement, personal competence, social behavior, and susceptibility to influence.

Holland's theory is used in conjunction with many career counseling tools and thought by most professionals to be effective in establishing a foundation for discussing career options with clients. "Holland's work is exemplary for its continual revision and refinements made in response to substantive criticisms and disconfirmatory research findings. The theory is also simple and eminently practical, as Holland intended it to be" (Hacket, Lent, and Greenhaus, 1991).

Methodology

The raw data used for this study were obtained from client intake sheets completed by clients of the Lansing Community College Career Evaluation and Assessment Center (CEAC) during the 1988 through 1991 calendar years. CEAC services both Lansing Community College students and non-students from Ingham County. There are no restrictions of gender, race, age, education obtained or work experience gained. The services of the Center include career counseling, assessment of interests, values, basic skills (math, english, science, and mechanical aptitude), and personality through a variety of test batteries. Two career planning computer guidance programs (SIGI, and MOIS) are also available. Typically, clients learn about the Center's services through college literature, newspaper advertisements, and service contracts between the Center and area businesses and industries seeking assistance with employee career counseling services.

All clients are required to fill out a client intake sheet during their first visit to the Center. A total of 1,176 intake sheets were filled out during the calendar years of 1988 through 1991. For this study 428 of these were selected based on form completion. All the intake sheets that provided information on the client's (child) occupation and the occupation of both father and mother were selected for use in this study.

For this study parent and child personality type was determined qualitatively using Holland's typology based on their choice of vocation as indicated on the client intake sheet.

> Vocational personality type can be determined quantitatively by a person's score on selected scales from interest and personality inventories, or qualitatively by his/her choice of vocation, field of training, or his/her work history, or history of pre-employment aspirations, or a combination of these data (Holland, 1973, 1985).

The assignment of type came from "The Dictionary of Holland Occupational Codes" (Goffredson, 1989) which lists careers by Holland's personality type.

To determine statistical significance for research questions one through six, the chi-square goodness-of-fit test was applied to determine the significance of parental personality type influence on the child's personality type. "The chi-square goodness-of-fit test can be employed to test whether an empirical distribution departs significantly from the theoretical normal curve," and "...is commonly used as a test of normality." (Glass, 1984)

Holland's (1973, 1985) general premise regarding personality development states that "vocational type development is a function of a complex series of events resulting from (1)

family backgrounds, (2) initial personal orientations and occupational preferences, and (3) interactions with alternative environmental settings." To be consistent with Holland's theory on personality development these three considerations were reflected in this study through the following comparisons.

First, effect of parent personality type on the subjects personality type represented the impact of family background. The second premise of Holland's theory of personal development includes occupational preference as a factor of personality development and was determined from the career listed as "current occupation" on the subject intake sheet. The third consideration of Holland's theory regarding personal development allows for alternative environmental settings. In this example "experience in a collegiate setting" represented the alternative environmental setting and was considered as the educational level obtained by subjects. It was determined by the level of education obtained as indicated on the client intake sheet. Other variables considered in this study included gender and age, determined by client name (male or female) and date of high school graduation (assuming they were 18 years of age at graduation), respectively.

A Secondary Study on Client Aspirations

As described earlier, the vocational type for each child was determined by his or her current occupation. In some cases, this occupation may be temporary and not in the field or area of interest to which the individual aspires.

In addition to the primary study, it was suggested that a secondary study focusing on the occupations to which the CEAC clients aspired would provide additional evidence about the relationship between parents' and children's vocational personality types. The purpose of the secondary study was to replicate the major parts of the primary study using the occupations to which the clients aspired as the basis for determining the clients' vocational personality types. The secondary study looked specifically at the influence of parental personality types on children's personality types as indicated by the children's vocational aspirations.

The methods and analytical techniques for the secondary study were identical to the methods of the primary study.

Limitations

The primary limitation of this study, as described further in the chapter on methodology, was the process used to select participants. Clients of the College's counseling center are self-selected. Any student at the College or any resident of the County may receive services at the center. However, for

the purposes of this study, it was necessary to include only those clients who had two parents and who provided information on both parents. Since only about one of three clients provided information on both parents, the results of the study were limited to clients of two parent backgrounds. Obviously in an era of high divorce rates and a growing population of single parent households, this restriction should be considered when applying the results to career counseling theory or practice. Likewise, the intent of this study was to better understand relationships between select variables, but the research design did not allow for the demonstration of cause and effect between various dependent and independent variables.

Other limitations revolved around the way in which values were assigned to variables, particularly personality type, gender, age, and education. For example, all vocational personality types were determined in a qualitative fashion using Holland's theory that vocational personality type can be determined by career choice. Personality types were assigned using "The Dictionary of Holland Occupational Codes" (Gottfredson, 1989). For the purpose of this study only the major personality preference code (the first of the possible three used to describe different occupations) was used. Initial personal orientations and occupational preferences were determined from the "current occupation" section of the CEAC client intake sheet. There was no record of past career

experiences which may or may not have been influenced by parental personality type.

Gender was determined by name and, when necessary, an assessment of other information available on the client intake sheet. Education levels were separated into the following categories: college graduate; current student; non-student/non-graduate, as determined by information provided on the CEAC client intake sheet. Graduates included those clients who had obtained an associate's degree, baccalaureate degree or post-baccalaureate degree. Age was determined by date of high school graduation listed on the CEAC client intake sheet (based on a client age of 18 at graduation).

Overview

In Chapter Two, Holland's (1973,1985) theory of vocational choice is reviewed, along with the purpose and findings of Smart's study (1989). Other relevant literature is reviewed and a more in-depth description of this study is given. The methodology is discussed in Chapter Three, including the design of this study and the method for analyzing the data. In Chapter Four the results of this study are reviewed and analyzed. Chapter Five contains a summary of the study's findings.

CHAPTER TWO

LITERATURE REVIEW

As the United States economy shifts from the manufacturing era to a computer/information age, futurists estimate that over the course of a lifetime, a person can expect to change jobs an average of eight different times (Bolles, 1989). As a result individuals are making decisions related to career choice more often today than ever before. As described in the following review of the literature, this major change in social structure and behavior has prompted extensive research in the area of career planning and decision making. The following review will include noteworthy theories of career decision making and personality development related to career choice.

When considering factors which will provide insight into individual career decision making strategies researchers in the field of career planning and development often begin with self assessment instruments which measure elements of personality such as interests, values, and skills. Other factors that have been considered include: gender, ethnic background, family income level, level of education obtained, and other life experiences. Neiner and Owens (1985)

indicated that a common theme in most vocational choice theories "is that an individual's life experiences either have a direct effect on the decision to pursue a certain vocation or an indirect effect through postulated precursors and determinants."

Super's (1980, 1990) developmental theory, has greatly influenced thinking about career behavior. He introduced the concept of career development as a dynamic process that individuals move through during the course of their life, rather than a static event. Life experiences encountered through developmental stages have been evaluated by career decision making theorists. A Personal Possibility theory was developed and discussed as early as 1968 by Tyler, Sundberg, Rohila and Green and subsequently by Tyler (1978, 1983), who theorized that at each stage of a person's development the individual is presented with a wide range of possibilities from which to choose. These choices are constrained by cognitive structures in which an individual evaluates the career possibilities by screening, organizing and creating experiences. They further believe that these cognitive structures are likely to be related to external environmental constraints or opportunities, which become internalized by the individual.

Most individuals will not describe their career choice as having been made systematically. Instead, they attribute

chance events and unintentional encounters with various people as having a major influence on their career choice (Roe, Baruch, 1964). Contrary to the Roe and Baruch findings, in the late 1970's Baumgardner (1976,1977) concluded that planning, quantitative information, and systematic evaluation are directly related to both successful career choice and finding a job.

Miller and Form (1964) reported that chance or happenstance experiences were cited more than any other contributor as being a major factor in an individuals career choice. Happenstance is recognized in career development theory from sociological perspectives. The sociological perspective considers environmental and situational circumstances which are beyond a clients control as being a relevant factor in the career decision making process.

Holland (1973, 1985) found that individuals have preferences for environments which value the characteristics of their own personality type. The natural tendency to seek out these environments increases the chances that these individuals will be influenced by a charismatic personality of the same type. People can increase their opportunities for chance encounters "by developing general life skills, such as interpersonal communication and an awareness of divergent life-styles" (Bandura, 1982).

Psychologists often use an understanding of "early recollections" (Ackerknecht, 1976; Mosak, 1958; Watkins, 1982) to gain insight into a person's career decisions. Early recollections are individual memories that represent single specific incidents, containing distinct mental images which occurred before eight years of age. It is believed that these early recollections can provide information on a client's "occupational focus, trend toward activity/passivity and affiliation/isolation, desire for superior, inferior, or egalitarian work relationships, and orientation toward people, data, or things, among other aspects" (McKelvie, 1979; McKelvie & Friedland, 1978; Watkins, 1984) Many early recollections are a result of early family life and influenced by immediate family members.

A link to family interaction and vocational development was provided by Eigen, Hartman, and Hartman (1987). These authors analyzed family interaction patterns reported by college students who were having difficulty making career decisions. They reported that undecided students were more likely than other career decisive groups to describe their family situations as being highly structured and emotionally involved, or having little structure or emotional involvement. Lopez & Andrews (1987) reported that ineffective family relationships contributed to career indecision in young adults.

Lack of knowledge about the variety of careers available to an individual is a basic constraint within the external environment. "Simply put, before considering a job or career, a person needs to be aware of that option. Yet research into awareness of occupations and perceived possibilities for self within preferred job categories has generally been lacking" (Poole & Cooney, 1985). Sinclair, Crouch, and Miler (1977) found that high school girls clustered their job choices around 'traditional female' occupations (e.g., teacher, nurse, clerical worker, shop assistant), suggesting that their perceived possibilities were constrained by their gender socialization.

Other factors which appear to have varying degrees of influence on career choice include developmental life stages, gender socialization, limitations related to knowledge of careers available, social class, self concept, ethnic background, interests, and personality. Researchers often begin exploring the impact of life experiences on career decision making by researching family influences. Roe (1957) first argued that the nature of early parent-child attachments shaped the individual's orientation to career opportunities in the world of work.

Developmental influences such as family income levels, and socioeconomic status have been reviewed by Brook, Whieman, Peisach, and Deutsch, (1974); Connell, Ashenden, Kessler, and

Dowsett, (1983); Connell, Stroobant, Sinclair, Conell, and Rogers, (1975). They found that individuals generally aspire to and obtain employment in occupational categories which resemble the socioeconomic status of their parents. However, both Poole (1983) and Sundberg (1980) suggested that individuals aspire to and expect to succeed to high socioeconomic status positions regardless of parental occupations.

Regarding family influence on career choice related to ethnic background, researchers Browning (1979), Marjoribanks (1979), Poole (1981), Seginer (1982), and Taft (1972) concluded that regardless of the social class of parents, ethnic background would be a major factor influencing adolescent career choice. A wide variety of factors related to family influence on career decision making has been documented by career choice theorist's. Holland proposed that an individual develops personality and interest through life experiences.

A child's special heredity and experience first lead to preferences for some kinds of activities and aversions to others. Later, these preferences become well-defined interests from which the person gains self-satisfaction as well as reward from others. Still later, the pursuit of these interests leads to the development of more specialized competencies as well as to the neglect of other potential competencies. At the same time a person's differentiation of

interests with age is accompanied by a crystallization of correlated values. These events - an increasing differentiation of preferred activities, interests, competencies, and values - create a characteristic disposition or personality type that is predisposed to exhibit characteristic behavior and to develop characteristic personality traits.

Parental influence as it relates to interest, and personality development is a major factor of Holland's theory of personality development as it relates to career choice (1979, 1985) however, Campbell (1981) indicated that "almost no knowledge exists about the ways in which various patterns of interest develop. Little has been done to learn how different patterns of interest form in the first place." Eberhardt and Muchinsky (1982) study on college students found that as much as 35% of the variance in vocational interests can be explained by life history experiences, and that the nature of these differences was generally consistent with the logic underlying Holland's theory. Neiner and Owens (1985) found similar evidence when studying employed adults.

Research by Astin & Panos (1969), and Weidman (1984), indicated that initial career intentions are strong predictors of later achievements. Holland's theory provided a basic understanding of different personality types and an idea of how they relate to different work environments.

> First, we can characterize people by their resemblance to each of six personality types: realistic, investigative, artistic, social, enterprising, and conventional. Second, the environments in which people live can be characterized by their resemblance to six model environments: realistic, investigative, artistic, social, enterprising, and conventional. Finally, the pairing of persons and environments leads to outcomes that we can predict and understand from our knowledge of the personality types and the environmental models. These outcomes include vocational choice, vocational stability and achievement, educational choice and achievement, personal competence, social behavior, and susceptibility to influence (Holland, 1973).

Holland (1973, 1985) provided in-depth descriptions of each of the six personality types and each of the corresponding environments as follows:

Realistic Type

> The special heredity and experiences of the realistic person lead to a preference for activities that entail the explicit, ordered, or systematic manipulation of objects, tools, machines, animals, and to an aversion to educational or therapeutic activities. These behavioral tendencies lead in turn to the acquisition of manual, mechanical, agricultural, electrical, and technical competencies and to a deficit in social and educational competencies.
>
> This development of a realistic pattern of activities, competencies, and interests creates a person who is predisposed to exhibit the following behavior:
>
> 1. Prefers realistic occupations or situations (for example, craftsman)in which he can engage in

preferred activities and avoid the activities demanded by social occupations or situation.
2. Uses realistic competencies to solve problems at work and in other settings.
3. Perceives himself as having mechanical and athletic ability and lacking ability in human relations.
4. Values concrete things or tangible personal characteristics - money, power, status.

Because he (she) possess these preferences, competencies, self perceptions, and values, the realistic person is apt to show himself to be:

- Asocial (shy)
- Materialistic
- Self-effacing
- Conforming
- Natural
- Stable
- Frank
- Normal
- Thrifty
- Genuine
- Persistent
- Not insightful
- Masculine
- Practical
- Uninvolved

Investigative Type

The special heredity and experiences of the investigative person lead to a preference for activities that entail the observational, symbolic, systematic, and creative investigation of physical, biological, and cultural phenomena in order to understand and control such phenomena: and to an aversion to persuasive, social, and repetitive activities. These behavioral tendencies lead in turn to an acquisition of scientific and mathematical competencies and to a deficit in persuasive competencies.

This development of an investigative pattern of activities, competencies, and interest creates a person who is predisposed to exhibit the following behavior:

1. Prefers investigative occupations or situations in which he can engage in his preferred activities and competencies and avoid the activities demanded by enterprising occupations or situations.
2. Uses investigative competencies to solve problems at work and in other settings.
3. Perceives himself as scholarly, intellectually self-confident, having mathematical and scientific ability, and lacking in leadership ability.
4 Values science.

Because he (she) possess these preferences, competencies, self perceptions, and values, the investigative person is apt to show himself to be:

- Analytical
- Introspective
- Rational
- Cautious
- Introverted
- Reserved
- Critical
- Methodical
- Unassuming
- Curious
- Passive
- Unpopular
- Independent
- Pessimistic
- Intellectual
- Precise

Artistic type

The special heredity and experience of the artistic person lead to a preference for ambiguous, free, unsystematized activities that entail the manipulation

of physical, verbal, or human materials to create art forms or products, and to an aversion to explicit, systematic, and ordered activities. The behavioral tendencies lead, in turn, to an acquisition of artistic competencies language, art, music, drama, writing - and to a deficit in clerical or business system competencies.

This development of an artistic pattern of activities, competencies, and interests creates a person who is predisposed to exhibit the following behavior:

1. Prefers artistic occupations or situations in which he can engage in preferred activities and competencies and avoid the activities demanded by conventional occupations or situations.
2. Uses artistic competencies to solve problems at work and in other settings.
3. Perceives himself as expressive, original, intuitive, feminine, non-conforming, introspective, independent, disorderly, having, artistic and musical ability (acting, writing, speaking).
4. Values esthetic qualities.

Because he (she) posses these preferences, competencies, self-perceptions, and values, the artistic person is apt to be:

- Complicated
- Imaginative
- Intuitive
- Disorderly
- Impractical
- Nonconforming
- Emotional
- Impulsive
- Original
- Feminine
- Independent
- Idealistic
- Introspective

Social Type

The special heredity and experiences of the social person lead to a preference for activities that entail the manipulation of others to inform, train, develop, cure, or enlighten; and an aversion to explicit, ordered, systematic activities involving materials, tools, or machines. These behavioral tendencies lead in turn to an acquisition of human relations competencies such as interpersonal and educational competencies and to a deficit in manual and technical competencies.

This development of a social pattern of activities, competencies, and interest creates a person who is predisposed to exhibit the following behavior:

1. Prefers social occupations and situations in which he can engage in his preferred activities and competencies and avoid the activities demanded by realistic occupations and situations.
2. Uses social competencies to solve problems at work and in other settings.
3. Perceives himself as liking to help others, understanding of others, having teaching ability, and lacking mechanical and scientific ability.
4. Values social and ethical activities and problems.

Because he (she) possesses these preferences, competencies, self-perceptions, and values, the social person is apt to be:

- Ascendant
- Helpful
- Responsible
- Cooperative
- Idealistic
- Social
- Feminine
- Insightful
- Tactful
- Friendly
- Kind

- Understanding
- Generous
- Persuasive

The Enterprising Type

The special heredity and experiences of the enterprising person lead to a preference for activities that entail the manipulation of others to attain organizational goals or economic gain; and an aversion to observational, symbolic, and systematic activities. These behavioral tendencies lead in turn to an acquisition of leadership, interpersonal and persuasive competencies, and to a deficit in scientific competencies.

This development of an enterprising pattern of activities, competencies, and interests creates a person who is predisposed to exhibit the following behavior:

1. Prefers enterprising occupations or situations in which one can engage in preferred activities and avoid the activities demanded by investigative occupations and situations.
2. Uses enterprising competencies to solve problems at work and in other situations.
3. Perceives self as aggressive, popular, self-confident, sociable, possessing leadership and speaking abilities, and lacking scientific ability.
4. Values political and economic achievement.

Because the enterprising person possesses these preferences, competencies, self perceptions, and values, the enterprising person is apt to be:

- Acquisitive
- Energetic
- Flirtatious
- Adventurous
- Exhibitionistic

- Optimistic
- Agreeable
- Excitement-seeking
- Self-confident
- Ambitious
- Sociable
- Domineering
- Extrovert
- Talkative

The Conventional Type

The special heredity and experiences of the conventional person lead to a preference for activities that entail the explicit, ordered, systematic manipulation of data, such as keeping records, filing materials, reproducing materials, organizing written and numerical data according to a prescribed plan, operating business machines and data processing machines to attain organizational or economic goals; and to an aversion to ambiguous, free, exploratory, or unsystematized activities. These behavioral tendencies lead in turn to an acquisition of clerical, computational, and business system competencies and to a deficit in artistic competencies.

This development of a conventional pattern of activities, competencies, and interests creates a person who is predisposed to exhibit the following behavior:

1. Prefers conventional occupations or situations in which he can engage in his preferred activities and avoid the activities demanded by artistic occupations or situations.
2. Uses conventional competencies to solve problems at work and in other situations.
3. Perceives himself as conforming, orderly, and as having clerical and numerical ability.
4. Values business and economic achievement.

Because he (she) possesses these preferences competencies,self-perceptions, and values, the conventional person is apt to show himself to be:

- Conforming
- Inhibited
- Prudish
- Conscientious
- Obedient
- Self-controlled (calm)
- Defensive
- Orderly
- Unimaginative
- Efficient
- Persistent
- Inflexible
- Practical

Holland's theory has been used in different forms to assess personality type. It can be assessed in a qualitative fashion by classifying the career an individual has chosen or the career in which an individual has expressed interest in or has engaged in educational training. "This classification is accomplished by comparing his educational or vocational interests with vocations assumed to be typical of each personality type" (Holland, 1973, 1985).

Quantitative methods can also be used. Various test instruments are available that incorporate Holland's typology to match personality to a particular type, including Holland's "Self Directed Search" and a modified approach called the Strong Vocational Interest Inventory (SVII).

Holland observed that personality types and work environments could be described in similar terms, enabling practitioners

to predict the outcome of matching people with work environments and to make assumptions about how successful specific personality types would be in different work environments. He described the matching work environments as follows:

Realistic Environment

> The realistic environment is characterized by the dominance of environmental demands and opportunities that entail the explicitly, ordered, or systematic manipulation of objects, tools, machines, and animals, and by a population dominated by realistic types. These demands, opportunities, and realistic people create a characteristic atmosphere that operates as follows:
>
> 1. It stimulates people to perform realistic activities such as using machines and tools.
> 2. It fosters technical competencies and achievements.
> 3. It encourages people to see themselves as having mechanical ability and lacking ability in human relations; it encourages them to see the world in simple, tangible, and traditional terms.
> 4. It rewards people for the display of conventional values and goods; money, power, and possessions.
>
> These environmental experiences lead to secondary effects. People become:
>
> 1. More susceptible to pragmatic, masculine, and conventional influences.
> 2. More attracted to realistic occupations and roles in which they can express themselves in realistic activities.
> 3. Less adept at coping with others; they learn instead simple, direct, masculine coping methods.

People acquire, or are reinforced in, these traits - they are:

- Conforming
- Normal
- Stable
- Frank
- Persistent
- Thrifty
- Genuine
- Practical
- Not insightful
- Masculine
- Self-effacing
- Uninvolved
- Materialistic
- Shy

The Investigative Environment

The investigative environment is characterized by the dominance of environmental demands and opportunities that entail the observation and symbolic, systematic, creative investigation of physical, biological, or cultural phenomena, and by a population dominated by investigative types.

These demands, opportunities, and investigative people create a characteristic atmosphere that operates to produce the following outcomes:

1. It stimulates people to perform investigative activities.
2. It encourages scientific competencies and achievements.
3. It encourages people to see themselves as scholarly, as having mathematical and a scientific ability, and as lacking in leadership ability; it encourages them to see the world in complex, abstract independent, and original ways.
4. It rewards people for the display of scientific values.

These environmental experiences lead to secondary effects. People become:

1. More susceptible to abstract, theoretical, and analytic influences.
2. More attracted to investigative occupations and roles in which they can express themselves in investigative activities.
3. More apt to cope with others in rational, analytic and indirect ways.

People acquire, or are reinforced in, these traits - they are:

- Analytical
- Introspective
- Rational
- Cautious
- Introverted
- Reserved
- Critical
- Methodical
- Unassuming
- Curious
- Passive
- Unpopular
- Independent
- Pessimistic
- Intellectual
- Precise

The Artistic Environment

The artistic environment is characterized by the dominance of environmental demands and opportunities that entail ambiguous, free, unsystematized activities and competencies to create art forms or products, and by the dominance of artistic types in the environment.

These demands, opportunities, and artistic people create a characteristic atmosphere that operates to produce the following outcomes:

1. It stimulates people to engage in artistic activities.
2. It fosters artistic competencies and achievements.
3. It encourages people to see themselves as expressive, original,

intuitive, feminine, nonconforming, independent, and as having artistic abilities (acting, writing, speaking). It encourages people to see the world in complex, independent, unconventional and flexible ways.

4. It rewards people for the display of artistic values.

These environmental experiences lead to secondary effects. People become:

1. More susceptible to personal, emotional, and imaginative influences.
2. More attracted to artistic occupations and roles in which they can express themselves in artistic activities.
3. More likely to cope with others in personal, emotional, expressive, and unconventional ways.

People acquire, or are reinforced in, these traits - they are:

- Complicated
- Imaginative
- Intuitive
- Disorderly
- Impractical
- Nonconforming
- Emotional
- Impulsive
- Original
- Feminine
- Independent
- Idealistic
- Introspective

The Social Environment

The social environment is characterized by the dominance of environmental demands and opportunities that entail the manipulation of others to inform, train, develop, cure, or enlighten, and by a population dominated by social types.

These demands, opportunities, and social people create a characteristic atmosphere

that operates to produce the following goals and outcomes:

1. It stimulates people to engage in social activities.
2. It fosters social competencies.
3. It encourages people to see themselves as liking to help others, understanding others, cooperative, and sociable; it encourages them to see the world in flexible ways.
4. It rewards people for the display of social values.

These environmental forces lead to secondary effects. People become:

1. More susceptible to social, humanitarian, and religious influences.
2. More attracted to social occupations and roles in which they can express themselves in social activities.
3. More apt to cope with others by being friendly, helpful, cooperative.

People acquire, or are reinforced in, these traits - they are:

- Ascendant
- Helpful
- Responsible
- Cooperative
- Idealistic
- Sociable
- Feminine
- Insightful
- Tactful
- Friendly
- Kind
- Understanding
- Generous
- Persuasive

The Enterprising Environment

The enterprising environment is characterized by the dominance of environmental demands and opportunities

that entail the manipulation of others to attain organizational and self-interest goals, and by the dominance of enterprising types. These demands, opportunities, and enterprising people create a characteristic atmosphere the operates to produce the following goals and outcomes:

1. It stimulates people to engage in enterprising activities, such as selling, or leading others.
2. It fosters enterprising competencies and achievements.
3. It encourages people to see themselves as aggressive, popular, self-confident, sociable, and as possessing leadership and speaking ability. It encourages people to see the world in terms of power, status, responsibility, and in stereotyped, constricted, dependent. and simple terms.
4. It rewards people for the display of enterprising values and goals: money power and status.

These environmental experiences lead to secondary effects. People become:

1. More susceptible to social, emotional and materialistic influences.
2. More attracted to enterprising occupations and roles in which they can express themselves in enterprising activities.
3. More prone to compete with others in a enterprising manner - by dominance, talkativeness, and so on.

People acquire, or are reinforced in these traits - they are:

- Acquisitive
- Dependent
- Impulsive
- Adventurous
- Energetic
- Pleasure-seeking
- Ambitious
- Exhibitionistic

- Self Confident
- Argumentative
- Flirtatious
- Sociable

The Conventional Environment

The conventional environment is characterized by the dominance of environmental demands and opportunities that entail the explicit, ordered, systematic manipulation of data, such as keeping, records, filing materials, reproducing materials, organizing written and numerical data according to a prescribed plan, operating business and data processing machines, and by a population dominated by conventional types.

These demands, opportunities and conventional people create a characteristic atmosphere that operates to produce the following goals and outcomes:

1. It stimulates people to engage in conventional activities, such as recording and organizing data or record.
2. It fosters conventional competencies and achievements.
3. It encourages people to see themselves as conforming, orderly, non-artistic, and as having clerical competencies; it encourages them to see the world in conventional, stereotyped, constricted simple dependent ways.
4. It rewards people for the display of conventional values: money, dependability, conformity.

These environmental experiences lead to secondary effects. People become:

1. More susceptible to materialistic influences; money, position, power.
2. More attracted to conventional occupations and roles.
3. More prone to cope with others in a conventional manner - to be controlling, conforming, practical.

> People acquire, or are reinforced in, these traits - they are:
>
> - Conforming
> - Inhibited
> - Prudish
> - Conscientious
> - Obedient
> - Self-controlled
> - Defensive
> - Orderly
> - Unimaginative
> - Efficient
> - Persistent
> - Inflexible
> - Practical

According to Holland's theory, personality type is a major determinant of career success. Therefore the way that personality types develop becomes an increasingly important element to study and include in analysis of career choice and success. Holland and others determined that personality types are strongly influenced by the environment. The home environment has been widely accepted as an influence of personality development. Specific influences of the home environment have been documented by Eberhardt and Muchinsky (1982), Neiner and Owens (1985), and others. Holland also stated that to some degree, "types produce types" with each parental type providing opportunities for development to their child in a limited fashion, based on their own interests, as well as discouraging interests and opportunities in other areas of interest.

> Presumably, the more a child resembles a particular parent, the more reward he will receive, so parent-child

> relationships, like other personal relationships, may demonstrate that types are attracted to types. When parental and child data are organized in the typology, positive associations among types should occur because large clusters of characteristic activities, competencies, vocational preferences, and so on are being assessed, not just subtle attitudes that can be easily distorted by the assessment process and that constitute only a small portion of the multiple and varied influences parents exert (Holland, 1973, 1985).

Holland (1973, 1985) has presented a multidimensional view of personality. He asserts that, relatively speaking, most people can be categorized into one of six personality types: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). He has suggested five important constructs to operationalize his model: (i) consistency, (ii) differentiation, (ii) identity, (iv) congruence, and (v) calculus (Alvi, S.A., Khan, S.B., Kirkwood, K.J.,1990)

J.C. Smart studied factors of career choice in college students, including the socioeconomic status of the subject's families, the number of parents who have the same vocational type, and subject gender. The subjects of his study were university students who were pursuing a science degree (Holland's Investigative type, I), students pursing a degree in business (Holland's Enterprising type, E), and subjects pursuing a degree in social science (Holland's Social type,

S). Smart did not include Holland's Conventional (C) type, Realistic (R) type, or the Artistic (A) type as these types were not as clearly recognizable in the given population of students. Smart (1989) reported that the development of all three vocational types (S,E, I,) was strongly influenced by gender and family socioeconomic background variables". Smart went on to report that:

> subjects are influenced initially by sex and family background characteristics. These exogenous variables in the model lead subjects to develop distinctive personal orientations that reflect their preferences for and aversions to selected attitudes and activities. The combined influence of these measures contribute to subjects' precollege occupational aspirations. These collective precollege characteristics influence their entry into different types of colleges and universities which, in turn, influence the nature of their undergraduate experiences.....and then their occupational choice" (Smart, 1989)

He concluded that the subjects of his study who were social types tended to be "predominately women from less affluent backgrounds and whose parents were employed in social occupations." He also reported that the (I) and (E) subjects he studied tended to be "men from more affluent backgrounds whose parents are not as likely to be employed in these respective occupational groups."

Smart (1989) reported that "these collective findings clearly demonstrate that the vocational types included in Holland's

theory have different life histories, and that those differences are generally consistent with the underlying logic of the theory. He showed that parental occupation did influence offspring, but found that to be true to a different extent for each of three personality types he studied. "Both family socioeconomic status and initial occupation aspiration exert significant indirect effects in all three equations (I, E, S)."

> Family affluence has a permeating influence throughout the model for Investigative types. That is to say, affluent families tend to instill an Investigative orientation in their children prior to college to promote their attendance at institutions that confer a larger proportion of their total degrees in scientific fields, and to encourage higher educational attainment levels in their children. All these attributes have a significant positive direct effect on the development of investigative types. At the same time, family affluence contributes to the development of attributes that inhibit the development of Social types, that is to say, family affluence tends to promote higher levels of Investigative and Enterprising orientations and attendance at higher quality/more selective undergraduate institutions, all being factors with significant negative direct effect on the development of Social types (Smart, 1989).

Smart felt that the data used in his study were limited to aspects of life histories measured by his primary research instrument, the "Biographical Questionnaire," and suggested that:

> differences in other aspects of life histories among the six vocational types would further strengthen the current understanding of the relationship between life experiences and vocational development, as well as add further understanding of the distinctive personal, cultural, and environmental conditions that characterized the development of the vocational types proposed in Holland's theory (Smart, 1989).

"Further research," Smart suggested, "might examine the premise that social type parents produce social type offspring more than either investigative or enterprising parental types."

Smart (1989) also found that:

> While the finding that being a women has a greater influence on Social type development is not surprising, the stronger influence of the two family measures has potentially important implications for Holland's (1985) general premise that "types produce types" through biological endowments of physical and psychological potential and through attitudes shaped by alternative child-rearing styles (Grotevant, Scarr, & Weinberg, 1977; Roberts & Johansson, 1974). The relative affluence of the family and the number of parents employed in the occupation (vocational type) subsequently chosen by the child appears to have a decidedly stronger influence on the vocational development of Social types. Further research might examine the premise that Social type parents 'produce' Social type offspring more that either Investigative or Enterprising parental types (Smart, 1989).

Smart's findings are consistent with Holland's theory that vocational development involves both individual characteristics and environmental settings.

Chapter Summary

In chapter two related literature was reviewed. Smart's study like Eberhardt and Muchinsky (1982, 1984) and Neiner and Owens (1985) show that life history experiences can be used to understand the differences between development of personality types in Holland's theory (1973, 1985). Chapter three will discuss the data collected to study parental type influence on children's type development. The variables of this data are reviewed. Research questions are developed and a statistical method for evaluating the data is presented.

CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this study was to investigate the relationship between vocational personality types of children (based on Holland's theory of vocational personality type) and their parents. The influence of gender, educational level, and age on this relationship was also examined. The raw data for this study were obtained from client intake sheets completed by clients of the Lansing Community College Career Evaluation and Assessment Center (CEAC) during the 1988 through 1991 calendar years. Clients seeking assistance from the CEAC office represented a wide range of ages, national origins, ethnic backgrounds, educational backgrounds, and professional experiences.

Target Population and Sample Population

Conover (1971) stated that "If each possible sample (of size *n*) is represented by one point in the sample space, and if each point in the sample space has equal probability of being selected as the sample, then the sampling method is random and the resulting sample is random." The CEAC services are available to anyone (users of these services are over 16

years of age), and therefore it can be assumed that each client with CEAC has an equal probability of being selected. However, of the 1,176 clients who completed intake sheets for services during the four year span of this study, only intake sheets which provided information on the clients (child) occupation and the occupation of both father and mother (parent) were selected for use in this study. This resulted in a total of 428 usable client intake sheets. Yet, the sample population represented only individuals who provided data about both parents. It was difficult to determine whether the sample population might have eliminated a certain segment of the target population, e.g., individuals with only one parent, parents who were deceased, etc. For the purposes of this study, it was assumed that the sample is random even though it may have been biased by the possible exclusion of individuals from single parent homes or the exclusion of individuals who were not able to provide information about one or both parents for any reason.

Variables

This study considered the following variables:

1. The client's (child's) personality type (R,I,A,S,E,C,) based on chosen occupation listed on the client intake sheet and typed using "The Dictionary of Holland's Occupational Codes" (Gottfredson, 1989).
2. Gender, determined by name, and when necessary an assessment of other information on the intake sheet.

3. Age, determined by date of high school graduation listed on the client intake sheet (based on a client age of 18 for the year of graduation) and stratified into three groups: (1) 22 years and below; (2) 23 to 29 years of age; and (3) 30 years old and above.
4. Education obtained; four groups of clients including those who: (1) have a baccalaureate degree or higher; (2) have an associate's degree; (3) are currently enrolled but have not completed a degree program; or (4) have never attended college.
5. Parent's personality type (R,I,A,S,E,C,) based on chosen occupation listed on the client intake sheet and typed using "The Dictionary of Holland's Occupational Codes" (Gottfredson, 1989).

In addition, a separate variable was included for use in the secondary study of client vocational aspirations. This variable was described as follows:

6. The client's personality type based on 'occupations thought about' as listed on the client intake sheet and typed using "The Dictionary of Holland's Occupational Codes" (Gottfredson, 1989).

For variables 1 and 5, parent and child personality types were determined qualitatively using Holland's typology based on choice of vocation as indicated on the client intake sheet. For variable 6 in the secondary study, each client

could list up to four possible occupations which he or she had "thought about" as a career. Clients who did not list a career aspiration were eliminated from the secondary study. Clients who listed only one occupation were assigned that occupation. Clients who listed two or more occupations were assigned each type that they indicated but the same type was not assigned to a client more than once. The assignment of type came from "The Dictionary of Holland Occupational Codes" (Gottfredson, 1989). As described in Chapter 2, the possible types include: realistic (R), investigative (I), artistic (A), social (S), enterprising (E), and conventional (C).

Given Holland's (1973, 1985) general premise that "vocational type development is a function of a complex series of events resulting from: (1) family backgrounds, (2) initial personal orientations and occupational preferences, and (3) interactions with alternative environmental settings," each parent's vocational preference and personality type as listed by the client (child) was the measure of family background and influence in this study. The measure of initial personal orientations and occupational preferences was determined from the career listed as "current occupation" on the client intake sheet. The educational level obtained by the subjects (child) was the measure of alternative environmental settings (measuring impact of the educational experience and attainment on personality type).

Research Questions and Null Hypotheses

A total of seven questions were considered in this study. Each of these questions was considered on the basis of the clients' current occupation or the occupation which was thought about. Under this design, comparisons between clients' vocational personality types and parents' vocational personality types included both those vocations which the clients currently occupy and those vocations which the clients stated that they desire. Therefore, if a client was in transition to another vocation with a different personality type under Holland's typology, then the client's preferred vocation was captured in part two of the analysis. Each question is described below.

Question 1.

There were two parts to this question. In the first part, it was asked whether a child's personality type was independent of his or her father's personality type. Concurrently, it was asked whether a child's personality type was independent of his or her mother's personality type. In other words, for each personality type, is the child's personality type the same as the parent's personality type. This question was exhibited as a null hypothesis:

Ho: Children's personality types are independent of the personality types of their fathers/mothers

The statistical test and decision criteria for each question are described together in the following section, since each question uses the same test and criteria.

Part two of question 1 examined the same question from a different angle. It asked whether a child's personality type was independent of a father's personality type compared with each of the five other personality types. The same question was presented for the mother's personality type. In other words, were certain parental personality types more likely to influence their children's personality type more than others. The null hypothesis for this question was:

Ho: Each of the personality types are independent of the other three personality types in influencing the personality type of the children.

Question 2.

This question asked whether a child's personality type was different from his or her parent's personality type based on the child's gender. Stated another way, this question asked whether sons or daughters were more likely to exhibit their father's personality type. It also asked whether sons or daughters were more likely to exhibit a mother's personality type. The null hypothesis for this question was:

Ho: The personality types of sons are independent of the personality types of daughters when matched with fathers'/mothers' personality types

Question 3.

This question reversed the emphasis in question 2 from child to parent and asked whether a child's personality type was significantly different from his parent's personality type based on the parent's gender. In other words, is it more likely that a child's personality type will be identical to the mother's personality type or to the father's personality type? In hypothetical form, the question becomes:

Ho: The personality types of fathers are independent of the personality types of mothers when matched with their children's personality types

Question 4.

Were sons more likely to exhibit a father's personality type or a mother's personality type? The null hypothesis for this question was:

Ho: The personality types of fathers are independent of the personality types of mothers when matched with their sons' personality types

Question 5.

This question was identical to question 4 but included daughters only.

Ho: The personality types of fathers are independent of the personality types of mothers when matched with their daughters' personality types

Question 6.

Was a child more or less likely to exhibit the same personality type as his or her parents than other clients (children) in the study with different levels of educational attainment? The level of education was grouped into four categories and examined separately for mothers and fathers. The question asked whether the level of education achieved by a child influenced the relationship between a child's personality type and his or her parent's type.

Ho: The personality types of CEAC clients (children) are independent of the personality types of fathers/mothers when children are grouped by educational attainment

Question 7.

Did age have an effect on the independence between a child and his or her parent's personality type? Ages were stratified into three classes and this question was examined separately for fathers and then for mothers.

Ho: The personality types of CEAC clients (children) are independent of the personality types of fathers/mothers when children are grouped by age

A Secondary Study on Client Aspirations

The seven questions and hypotheses in the primary study were also posed in a secondary study which included variables 2 through 6. The purpose of the secondary study was to analyze whether the clients' personality types as determined from their lists of career aspirations ("occupations thought

about") on CEAC client intake sheets were independent of their parents' personality types. The following statistical techniques were used for both the primary and secondary studies.

Statistical Analyses

The hypotheses in the seven questions were tested with the chi-square test for goodness of fit. This test is designed to compare the sample obtained with the type of sample one would expect from the hypothesized distribution, to see if the hypothesized distribution function fits the data in the sample (Conover, 1971). In other words, do the given proportions (e.g., the proportion of sons who exhibit their fathers' personality types or the proportion of daughters who exhibit their fathers' personality type) differ significantly from the expected proportion determined under the chi-square distribution and hence from each other?

Although this test is used frequently in the social sciences, it has several drawbacks. For example, in any goodness of fit test, the null hypothesis will be rejected if the sample size is large enough. Also, cells with a sample of 5 or less should be discarded or combined in some meaningful way with other cells if possible.

For this study, the level of significance, or α, was selected at the .05 level. There are two ways of making an incorrect

decision in hypothesis testing. If the null hypothesis is true, it might be rejected falsely, called a Type I error. The second way of committing an error in hypothesis testing is by accepting the null hypothesis when the null hypothesis is false. This error is known as a Type II error. The level of significance, or $\propto$, is the maximum probability of rejecting a true null hypothesis. It is typically set at either .05 or .01 for reasons of convention. A small $\propto$ decreases the likelihood of committing a Type I error; however, lowering $\propto$ too far increases the probability of committing a Type II error. Therefore, an $\propto$-level of .05 appears to be an appropriate compromise for this study.

The decision rule, then, for each of the hypotheses in this study was to not reject the null hypothesis (Ho) when $p > \propto$, which has been selected as .05. The outcomes of the statistical analyses included p which is the probability of obtaining a proportion that differs from chi-square by an amount as large or larger than that which was observed. Therefore, when p was below .05, Ho was rejected, i.e., the given proportions in each question were not independent. For example, if the null hypothesis in question 4 was rejected, it was concluded that the gender of the parent does have an effect on the personality type of the son, i.e. the proportions are not independent. More or fewer sons would have the same personality type as either their mothers or their fathers depending on the proportions.

The data were entered onto a spreadsheet in Microsoft's software package Excel®. Depending on the research question, the data were sorted by gender, age, and educational attainment. Analyses were performed with the StatView® software package.

Limitations

The major limitation to the study methodology was the exclusion of client intake sheets which did not contain information on two parents or which were incomplete. Client intake sheets which listed the client's current occupation and both parents' occupations were included in this study. This sample selection process limited the study to clients (children) who had both parental influences and did not include clients who may have been raised in single parent households. Thus, the generalization of the results is limited to individuals with two parents.

Some of the other data elements were determined subjectively. For example, the vocational type of both the subject and the subject parents were classified qualitatively by using "The Dictionary of Holland's Occupational Codes" (Gottfredson, 1989) to match current occupation with personality type. For the purpose of this study only the first (the most influential) of the three digit personality code was used.

Occupational preferences were determined from the "current occupation" section of the CEAC client intake sheet which does not record employment history. There were not recordings of past work experiences which may or may not have been influenced by parental personality types.

Gender was determined by name, and when necessary, an assessment of other information available on the client intake sheet was also considered. Education level was determined by information provided on the CEAC client intake sheet and categorized as: college graduate; current student; non-student/non-graduate. Age was determined by date of high school graduation listed on the client intake sheet (based on a client age of 18 at high school graduation).

Chapter Summary

Over 428 individuals participated in the study. Each individual was a client at a community college career assessment center between 1988 and 1991. The clients provided data about themselves and their parents on assessment forms. Data included name, vocation, desired vocation and educational level including year of graduation from high school. Data on parents were also provided. Age was determined by assuming a standard age of 18 at the time of high school graduation. Gender was ascertained by the type of first name.

Only clients who provided information about both parents were included in the study. This decreased the total number of clients with usable data to around 430. The data were entered onto the database spreadsheet Excel® and sorted by personality type, gender, age class, and level of educational attainment.

Seven research questions were developed, each designed to investigate the relationship between a child's vocational personality type and the vocational personality type of his or her parent. A secondary study was developed designed to investigate the relationship between a child's vocational personality type based on career aspiration and the vocational personality type of his/her parent. The Chi-square goodness of fit test was selected for testing for independence between the given proportions in each area of interest. Several limitations of the data collection and analysis process were discussed. Results of the analyses are provided in the following chapter.

CHAPTER FOUR

RESULTS

Data Source and Background Information

The raw data for this study were obtained from 1,176 intake sheets completed by clients of the Lansing Community College Career Evaluation and Assessment Center (CEAC) during the 1988 through 1991 calendar years.

The CEAC services include counseling related to career choice based on assessment of: personality characteristics, occupational and personal values; occupational interests; past work and educational experiences; educational skills assessment. Clients of CEAC utilize these services for a variety of career planning reasons including: mid-career transition as a result of job dissatisfaction, personal need, or in a forced move due to impending lay-off or skill obsolescence; students seeking assistance with career planning related to educational goals; individuals re-entering the job market after spending time raising children or working at home; businesses, industry, and government who seek services to match current employees with anticipated or real openings.

Fees are assessed for services and discounted for currently enrolled Lansing Community College students. The CEAC center distributes pamphlets and flyers on the Lansing Community College campus and to area business and industry. Upon initial contact with CEAC an intake appointment is arranged. The CEAC office is open from 8 a.m. to 5 p.m., Monday through Friday, and two evenings each week to 8:00 p.m. Hours for special contract services are negotiated on an individual basis. The initial interview allows clients to meet personally with a licensed counselor who assists clients in determining the most effective activities for their decision making process.

Resources made available to clients include a wide selection of career interests and aptitude assessment tools that are tailored to the clients personal needs and situation; various computerized career planning activities are also available. The Lansing Community College Career Exploration and Information Center is available to both students and community members making available an up-to date collection of career descriptive texts, newspapers, journal articles, college catalogs, audio tapes, microfiche and filmstrips. Two computerized career planning systems are available: System of Interactive Guidance and Information (SIGI Plus) and the Michigan Occupational information System (MOIS) and the Eureka system. The services are available to students or non-students regardless of their educational aspirations.

Clients seeking assistance from the CEAC office represent a variety of age ranges (typically beginning at sixteen), national origins, ethnic backgrounds, educational backgrounds, professional experiences, and both genders. A total of 1,176 clients completed intake sheets for services during the four year span of this study. The sample used in this study included information collected from a total of 428 client intake sheets which were selected for this study based on form completion. All intake sheets collected during the calendar years of 1988 through 1991 that provided information on the client's (child) occupation and the occupation of both father and mother (parent) were selected for use in this study.

Purpose of the Study and Variables

This study was designed to help practicing career counselors learn more about the relationship between parents vocational personality type and child vocational personality type. The following variables were included in the study:

1. The client's (child) personality type (R,I,A,S,E,C,) based on chosen occupation listed on the client intake sheet and typed using "The Dictionary of Holland Occupational Codes" (Gottfredson, 1989).
2. Gender, determined by name, and when necessary an assessment of other information available on the client intake sheet.

3. Age, which was determined by date of high school graduation listed on the client intake sheet (based on a client age of 18 for the year of graduation).
4. Education obtained; graduate, which includes those clients who have obtained degrees at the Associate level, Bachelors level or Graduate level; or non-graduate, which includes clients who have not attended college, clients who have attended college but who have not completed a degree program, and current students.
5. Parent personality type (R,I,A,S,E,C,) based on chosen occupation listed on the client intake sheet and typed using "The Dictionary of Holland Occupational Codes". (Gottfredson, 1989).
6. The clients' personality type based on 'occupations thought about' as listed on the client intake sheet and typed using "The Dictionary of Holland Occupational Codes" (Gottfredson, 1989).

The relationships between parental personality type as expressed by vocation with child personality type as expressed by vocation were explored using variables 1 and 5 for the primary study and variables 5 and 6 for a secondary study on career aspiration. The effect of gender (variable 2), age (variable 3) and educational level (variable 4) on the relationship between parental and child vocational personality type was also studied.

Descriptive Statistics

For this study parent and child personality types were determined qualitatively using Holland's typology based on their choice of vocation as indicated on the client intake sheet. The assignment of type was based on "The Dictionary of Holland Occupational Codes" (Gottfredson, 1989) which lists careers by Holland's personality type.

Of the 1,176 intake sheets, 428 were selected for use in this study based on form completion. The client (child) and parents' personality types were determined based on their chosen occupation listed on the client intake sheet and designated a type using "The Dictionary of Holland Occupational Codes" (Gottfredson, 1989). The types possible are realistic (R), Investigative (I), artistic (A), social (S), enterprising (E), and conventional (C), as described previously. The distribution of vocational personality types for CEAC clients (children) and their parents in this study is shown below (Table 1).

The 65 Investigative personality types (21 clients) and the 22 Artistic personality types (7 clients) were eliminated from the study due to the small sample size. Recall from Chapter 3 that the Chi-square goodness of fit test requires at least a sample size of five elements per cell. However, the number of A-types or I-types was consistently below five when sample distributions were broken down to answer each of

Table 1. Frequency distribution of CEAC clients and their parents by vocational personality type.

Type	Number of Fathers	Mothers	Children	Total
Realistic (R)	211	31	125	367
Investigative (I)	30	14	21	65
Artistic (A)	6	9	7	22
Social (S)	56	224	60	340
Enterprising (E)	104	41	89	234
Conventional(C)	21	109	126	256
Total	428	428	428	

the individual research questions. For example, no A-type father had an A-type son or an A-type daughter. Also, there was only one I-type mother who had an I-type son and one I-type mother who had and I-type daughter. Therefore, these two vocational personality types were excluded from the study leaving the R, S, E, and C types.

In Questions one through five of this study the proportion of clients with vocational personality types identical to their parents were compared to the proportion of clients with personality types that were different from their parents. These comparisons were often broken down by gender - father/mother and son/daughter in several combinations.

Tables 2 and 3 report the distribution of clients by vocational personality type matched with the distribution of their fathers' (Table 2) and mothers' (Table 3) vocational personality types. For example, there was a total of 369 fathers and 369 children in the study. The largest number of types for fathers was the 201 R-type fathers. Of these R-type fathers, 76 had children who were also R-type, while there were 35 S-type, 30 E-type and 60 C-type. There were only 21 C-type fathers but 110 C-type children.

Table 2. Number of CEAC clients (children) and their fathers matched by vocational personality type.

Number of ...	fathers by type				
children by type	R	S	E	C	Total
Realistic (R)	76	17	25	4	122
Social (S)	35	9	11	2	57
Enterprising (E)	30	19	25	6	80
Conventional (C)	60	8	33	9	110
Total	201	53	94	21	369

There was a total of 380 mothers and children in the study (Table 3). Most mothers (210) were of the S-type. Children of the S-type mothers included 41 S-types, 70 R-types, 42 E-types, and 57 C-types. Most children in the study were of the R-type (120) or C-type (120).

Table 3. Number of CEAC clients (children) and their mothers matched by vocational personality type.

Number of ...	mothers by type				
children by type	R	S	E	C	Total
Realistic (R)	10	70	11	29	120
Social (S)	6	41	5	7	59
Enterprising (E)	5	42	12	22	81
Conventional(C)	8	57	9	46	120
Total	29	210	37	104	380

Question 2 reviewed the effect of gender to ask if male or female children are more likely to be influenced by their parents' personality type. Table 4 includes data on 165 fathers and their 165 sons. Over one-half of the fathers and sons were of the R-type.

Table 4. Number of CEAC clients (sons) and their fathers matched by vocational personality type.

Number of ...	fathers by type				
sons by type	R	S	E	C	Total
Realistic (R)	65	13	18	1	97
Social (S)	4	2	0	1	7
Enterprising (E)	11	8	12	2	33
Conventional(C)	8	4	12	4	28
Total	88	27	42	8	165

Table 5 provides data on fathers and their daughters. Of the 199 fathers and daughters, 109 fathers were of the R-type, while the largest number of daughters (81) was of the C-type.

Table 5. Number of CEAC clients (daughters) and their fathers matched by vocational personality type.

Number of ...	fathers by type				
daughters by type	R	S	E	C	Total
Realistic (R)	11	4	7	2	24
Social (S)	29	7	11	1	48
Enterprising (E)	18	11	13	4	46
Conventional(C)	51	4	21	5	81
Total	109	26	52	12	199

There were 167 mothers and 167 sons in the primary study (Table 6). Most (93) of the mothers were of the S-type and

Table 6. Number of CEAC clients (sons) and their mothers matched by vocational personality type.

Number of ...	mothers by type				
sons by type	R	S	E	C	Total
Realistic (R)	7	56	9	24	96
Social (S)	0	5	0	2	7
Enterprising (E)	2	16	4	10	32
Conventional(C)	0	16	4	12	32
Total	9	93	17	48	167

most of their sons were of the R-type (96). Table 7 shows the number of mothers and daughters by vocational personality type. Of the 208 mothers and daughters, over one-half of the mothers were of the S-type, while the greatest number of daughters was of the C-type.

Table 7. Number of CEAC clients (daughters) and their mothers matched by vocational personality type.

Number of ...	mothers by type				
daughters by type	R	S	E	C	Total
Realistic (R)	3	13	2	5	23
Social (S)	6	35	4	5	50
Enterprising (E)	3	26	7	12	48
Conventional(C)	8	40	5	34	87
Total	20	114	18	56	208

In Question 6 the effect of educational experience and attainment on the influence of parental personality type on children personality type was examined. The data were divided into two groups: children and their fathers (Tables 8-11) and children and their mothers (Table 12-15). In the fathers and children group, 128 children had no college education or experience, 163 were currently attending college, 29 had an associate's degree, and 39 had a baccalaureate degree or higher. Eighty-five of the 128 children who had no college experience were R-types (Table 8).

Table 8. Number of CEAC clients (children) with no completed college education and their fathers matched by vocational personality type.

Number of ...	fathers by type				
children by type	R	S	E	C	Total
Realistic (R)	35	9	8	2	54
Social (S)	15	0	2	0	17
Enterprising (E)	11	3	7	0	21
Conventional(C)	24	3	7	2	36
Total	85	15	24	4	128

Table 9. Number of CEAC clients (children) currently enrolled in college, but no degree, and their fathers matched by vocational personality type.

Number of ...	fathers by type				
children by type	R	S	E	C	Total
Realistic (R)	27	6	14	1	48
Social (S)	12	4	6	1	23
Enterprising (E)	11	9	10	6	36
Conventional(C)	25	3	21	7	56
Total	75	22	51	15	163

Table 10. Number of CEAC clients (children) with an earned associates degree and their fathers matched by vocational personality type.

Number of ...	fathers by type				
children by type	R	S	E	C	Total
Realistic (R)	7	1	3	1	12
Social (S)	1	2	1	0	4
Enterprising (E)	3	0	2	0	5
Conventional(C)	5	0	3	0	8
Total	16	3	9	1	29

Table 11. Number of CEAC clients (children) with a four-year or graduate degree and their fathers matched by vocational personality type.

Number of ...	fathers by type				
children by type	R	S	E	C	Total
Realistic (R)	3	1	0	0	4
Social (S)	4	3	2	1	10
Enterprising (E)	4	7	6	0	17
Conventional(C)	4	2	2	0	8
Total	15	13	10	1	39

Table 12. Number of CEAC clients (children) with no completed college education and their mothers matched by vocational personality type.

Number of ...	mothers by type				
children by type	R	S	E	C	Total
Realistic (R)	4	33	4	12	53
Social (S)	2	12	0	3	17
Enterprising (E)	1	13	3	6	23
Conventional(C)	4	19	1	14	38
Total	11	77	8	35	131

Table 13. Number of CEAC clients (children) currently enrolled in college, but no degree, and their mothers matched by vocational personality type.

Number of ...	mothers by type				
children by type	R	S	E	C	Total
Realistic (R)	4	25	7	14	50
Social (S)	3	14	2	4	23
Enterprising (E)	2	19	5	8	34
Conventional(C)	4	27	8	24	63
Total	13	85	22	50	170

Table 14. Number of CEAC clients (children) with an earned associates degree and their mothers matched by vocational personality type.

Number of ...	mothers by type				
children by type	R	S	E	C	Total
Realistic (R)	1	6	0	2	9
Social (S)	0	4	1	0	5
Enterprising (E)	2	1	0	3	5
Conventional(C)	0	4	0	3	7
Total	3	15	1	7	26

Table 15. Number of CEAC clients (children) with a four-year or graduate degree and their mothers matched by vocational personality type.

Number of ...	mothers by type				
children by type	R	S	E	C	Total
Realistic (R)	1	3	0	0	4
Social (S)	0	10	1	0	11
Enterprising (E)	0	9	3	6	18
Conventional(C)	0	5	0	5	10
Total	1	27	4	11	43

In Question 7 the effect of age, determined by year of high school graduation (assuming they were 18 years of age at graduation), on the relationship between parents' and their

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children's vocational personality types was analyzed. When grouped with fathers, there were 144 clients who were 22 years old and under, 114 clients of age 23 through 29 years, and 89 clients who were age 30 years and above. Over one-half of the fathers in each group were of the R-type. However, distribution by type between children in the different age groups was inconsistent. For example, most of the youngest clients were of the C-type (Table 16), while the largest number of clients in the middle age group (Table 17) and the oldest age group (Table 18) were of the R-type.

Table 16. Number of CEAC clients (children), 22 years old and under, and their fathers matched by vocational personality type.

Number of ...	fathers by type				
children by type	R	S	E	C	Total
Realistic (R)	22	5	9	0	36
Social (S)	9	2	5	0	16
Enterprising (E)	14	8	10	5	37
Conventional(C)	29	4	17	5	55
Total	74	19	41	10	144

Table 17. Number of CEAC clients (children) age 23 through 29 and their fathers matched by vocational personality type.

Number of ...	fathers by type				
children by type	R	S	E	C	Total
Realistic (R)	26	10	8	2	46
Social (S)	8	1	4	2	15
Enterprising (E)	8	6	8	1	23
Conventional(C)	19	1	9	1	30
Total	61	18	29	6	114

Table 18. Number of CEAC clients (children), 30 years old and above, and their fathers matched by vocational personality type.

Number of ...	fathers by type				
children by type	R	S	E	C	Total
Realistic (R)	21	1	6	2	30
Social (S)	15	5	2	0	22
Enterprising (E)	5	5	7	0	17
Conventional(C)	19	1	9	1	20
Total	51	12	21	4	89

When grouped with mothers, the number of clients was 144 in the youngest age group (Table 19), 118 in the middle age group (Table 20), and 94 in the oldest age group (Table 21). Most of the mothers in each age group were of the S-type. Most of the children were either C-type or R-type.

Table 19. Number of CEAC clients (children), 22 years old and under, and their mothers matched by vocational personality type.

Number of ...	mothers by type				
children by type	R	S	E	C	Total
Realistic (R)	1	19	4	9	33
Social (S)	2	8	2	4	16
Enterprising (E)	4	16	4	12	36
Conventional(C)	5	22	5	27	59
Total	12	65	15	52	144

Table 20. Number of CEAC clients (children) age 23 through 29 and their mothers matched by vocational personality type.

Number of ...	mothers by type				
children by type	R	S	E	C	Total
Realistic (R)	6	21	5	14	46
Social (S)	2	11	1	2	16
Enterprising (E)	1	14	4	6	25
Conventional(C)	3	16	3	9	31
Total	12	62	13	31	118

Table 21. Number of CEAC clients (children), 30 years old and above, and their mothers matched by vocational personality type.

Number of ...	mothers by type				
children by type	R	S	E	C	Total
Realistic (R)	3	19	2	6	30
Social (S)	2	19	1	1	23
Enterprising (E)	0	10	3	4	17
Conventional(C)	0	15	0	9	24
Total	5	63	6	20	94

Results

Question 1. Independence between parents' and their children's vocational personality types.

There were two parts to this question. In the first part, it was asked whether a child's personality type was independent of his/her father's personality type. Concurrently, it was asked whether a child's personality type is independent of his/her mother's personality type. In other words, for each personality type, was the child's personality type the same as the parent's personality type. This question was exhibited in hypothetical form as follows:

Ho: Children's personality types are independent of their parents' (father and mother separately) personality types

The results of the chi-square analyses of children's personality types compared for independence from their father's types are shown for each type in Tables 22-29. For R-type fathers, the results indicated that children of R-type fathers were more likely to be R-types than were children of non-R fathers (χ^2=4.039, p=.0445). The null hypothesis that the R-personality type children were not independent of the R-personality type father was rejected. The null hypothesis was not rejected for S-type fathers (χ^2=.017, p=.8977), E-type fathers (χ^2=1.427, p=.2322), and C-type fathers (χ^2=1.211, p=.2712). Although the independence of fathers and children of the E-type and C-type was not statistically significant, a higher proportion of children from each type were the same types as their fathers than as fathers of other types. For example, 43 percent of the C-type fathers had C-type children, whereas only 29 percent of the other types of fathers (R, S, or E) had C-type children (Table 25).

Table 22. Number and percentage of R-type and non-R-type CEAC clients (children) matched with their R-type and non-R-type fathers (χ^2=4.039, p=.0445).

	Number (%) of fathers who are ...	
Number (%) of children who are ...	Realistic (R)	Not Realistic (Non-R)
Realistic (R)	76 (38%)	46 (27%)
Not Realistic (Non-R)	125 (62%)	122 (73%)
Total	201 (100%)	168 (100%)

Table 23. Number and percentage of S-type and non-S-type CEAC clients (children) matched with their S-type and non-S-type fathers (χ^2=.017, p=.8977).

Number (%) of children who are ...	Number (%) of fathers who are ... Social (S)	Not Social (Non-S)
Social (S)	9 (17%)	48 (15%)
Not Social (Non-S)	44 (83%)	268 (85%)
Total	53 (100%)	316 (100%)

Table 24. Number and percentage of E-type and non-E-type CEAC clients (children) matched with their E-type and non-E-type fathers (χ^2=1.427, p=.2322).

Number (%) of children who are ...	Number (%) of fathers who are ... Enterprising (E)	Not Enterprising (Non-E)
Enterprising (E)	25 (27%)	55 (20%)
Not Enterprising (Non-E)	69 (73%)	220 (80%)
Total	94 (100%)	275 (100%)

Table 25. Number and percentage of C-type and non-C-type CEAC clients (children) matched with their C-type and non-C-type fathers (χ^2=1.211, p=.2712).

Number (%) of children who are ...	Number (%) of fathers who are ... Conventional (C)	Not Conventional (Non-C)
Conventional (C)	9 (43%)	101 (29%)
Not Conventional (Non-C)	12 (57%)	247 (71%)
Total	21 (100%)	348 (100%)

The results of the chi-square analyses of children's personality types compared for independence from their mother's types are shown for each type in Tables 26-29. The null hypothesis was not rejected for R-type mothers (χ^2=.02, p=.8869) and E-type mothers (χ^2=2.331, p=.1269). However, the null hypothesis was rejected for S-type mothers (χ^2=5.058, p=.0245) or C-type mothers (χ^2=9.817, p=.0017). The Chi-square test showed that a significantly higher proportion of the mothers of S-type children were S-type as opposed to non-S type. This relationship was even stronger for C-type mothers and their C-type children.

Table 26. Number and percentage of R-type and non-R-type CEAC clients (children) matched with their R-type and non-R-type mothers (χ^2=.02, p=.8869).

Number (%) of children who are ...	Number (%) of mothers who are ... Realistic (R)	Not Realistic (Non-R)
Realistic (R)	10 (34%)	110 (31%)
Not Realistic (Non-R)	19 (66%)	241 (69%)
Total	29 (100%)	351 (100%)

Table 27. Number and percentage of S-type and non-S-type CEAC clients (children) matched with their S-type and non-S-type mothers (χ^2=5.058, p=.0245).

Number (%) of children who are ...	Number (%) of mothers who are ... Social (S)	Not Social (Non-S)
Social (S)	41 (20%)	18 (11%)
Not Social (Non-S)	169 (80%)	152 (89%)
Total	121 (100%)	170 (100%)

Table 28. Number and percentage of E-type and non-E-type CEAC clients (children) matched with their E-type and non-E-type mothers (χ^2=2.331, p=.1269).

Number (%) of children who are ...	Number (%) of mothers who are ... Enterprising (E)	Not Enterprising (Non-E)
Enterprising (E)	12 (32%)	69 (20%)
Not Enterprising (Non-E)	25 (68%)	274 (80%)
Total	37 (100%)	343 (100%)

Table 29. Number and percentage of C-type and non-C-type CEAC clients (children) matched with their C-type and non-C-type mothers (χ^2=9.817, p=.0017).

Number (%) of children who are ...	Number (%) of mothers who are ... Conventional (C)	Not Conventional (Non-C)
Conventional (C)	46 (44%)	74 (27%)
Not Conventional (Non-C)	58 (56%)	202 (73%)
Total	104 (100%)	276 (100%)

Part two of question 1 examined the same question from a different angle. It asked whether a child's personality type was independent of a father's personality type compared with each of the three other personality types. The same question was presented for the mother's personality type. In other

words, are certain parental personality types more likely to influence children's personality type than other types. This question, examined separately for fathers and mothers, was exhibited in as the following null hypothesis:

Ho: A personality type is independent from the other personality types in its influence over the personality types of offspring

The results of the chi-square analysis for fathers and their children showed that the null hypothesis was rejected (χ^2=10.957, p=.012). Fathers with Holland vocational personality types R and C showed a greater percentage of being exhibited by their children than the other personality types (Table 30). The null hypothesis was also rejected for

Table 30. Number (percent) of CEAC clients (children) with the same vocational personality types as their fathers (χ^2=10.957, p=.012).

	Personality type				
Number (%) of children with ...	R	S	E	C	Total
Same type as fathers	76	9	25	9	119
(Percent same)	38%	17%	27%	43%	32%
Different type from fathers	125	44	69	12	250
(Percent different)	62%	83%	73%	57%	68%
Total	201	53	94	21	369
(Total percent)	100%	100%	100%	100%	100%

mothers (χ^2=21.633, p=.0001). Children's Holland vocational personality type C was the same as their mothers' more often than the other three personality types (Table 31).

Table 31. Number (percent) of CEAC clients (children) with the same vocational personality types as their mothers (χ^2=21.633, p=.0001).

	Personality type				
Number (%) of children with ...	R	S	E	C	Total
Same type as mothers	10	41	12	46	109
(Percent same)	34%	20%	32%	44%	29%
Different type from mothers	19	169	25	58	271
(Percent different)	66%	80%	68%	56%	71%
Total	29	210	37	104	380
(Total percent)	100%	100%	100%	100%	100%

Question 2. The effect of clients' (children's) gender on the independence between parents' and their children's vocational personality types.

This question asked whether sons' personality types were independent from daughters' personality types in relation to their fathers' personality types. Stated another way, are sons or daughters more likely to exhibit their fathers' personality types?

Ho: The personality types of sons are independent of the personality types of daughters when matched with fathers' personality types

The results of the chi-square test indicated that the null hypothesis was rejected for independence of the fathers' influence on their sons as opposed to their daughters (χ^2=41.087, p=.0001). Fathers had a significantly greater influence on their sons vocational personality type than on their daughters (Table 32). Whereas over 50 percent of the sons had the same personality types as their fathers, only 18 percent of the daughters had the same types as their fathers.

Table 32. Number (percentage) of CEAC clients (sons and daughters) with the same vocational personality types as their fathers (χ^2=41.087, p=.0001).

Number (%) of children with ...	Sons	Daughters
Same types as fathers	83 (50%)	36 (18%)
Different types from fathers	82 (50%)	163 (82%)
Total	165 (100%)	199 (100%)

The same question was asked for mothers. It asked whether sons or daughters were more likely to exhibit their mother's personality type.

Ho: The personality types of sons are independent of the personality types of daughters when matched with mothers' personality types

The results of the chi-square test indicated that the null hypothesis was rejected (χ^2=19.416, p=.0001). Mothers had a

greater influence on daughters' than on sons' vocational personality type. Whereas 38 percent of the daughters had the same personality types as their mothers, only 17 percent of the sons exhibited the same personality types as their mothers (Table 33).

Table 33. Number (percentage) of CEAC clients (sons and daughters) with the same vocational personality types as their mothers (χ^2=19.416, p=.0001).

Number (%) of children with ...	Sons	Daughters
Same types as mothers	28 (17%)	79 (38%)
Different types from mothers	139 (83%)	129 (62%)
Total	167 (100%)	208 (100%)

Question 3. The effect of parents' gender on the independence between parents' and their children's vocational personality types.

This question reversed the emphasis in question 2 from child to parent and asked whether children's personality types were significantly different from parents' personality types based on parents' gender. In other words, is it more likely that a child's personality type will be identical to the mother's personality type or to the father's personality type, based on gender? The null hypothesis for this question was:

Ho: The personality types of fathers are independent of the personality types of mothers when matched with their children's personality types

The results of the chi-square test indicated that the null hypothesis was not rejected. Fathers did not have greater influence than mothers on their children (sons and daughters combined) (χ^2=1.315, p=.2514). About 33 percent of the fathers had the same personality type as their children, while about 29 percent of mothers had the same personality type as their children (Table 34).

Table 34. Number (percentage) of CEAC clients (children) with the same vocational personality types as their fathers and mothers (χ^2=1.315, p=.2514).

Number (%) of children with ...	Fathers	Mothers
Same type as parents	119 (33%)	107 (29%)
Different type from parents	245 (67%)	268 (71%)
Total	364 (100%)	375 (100%)

Question 4. The effect of parents' gender on the independence of parents' and their sons' vocational personality types.

Were sons more likely to exhibit the father's personality type or the mother's personality type. The null hypothesis for this question was:

Ho: The personality types of fathers are independent of the personality types of mothers when matched with their sons' personality types

The results of the chi-square test in question 4 indicated that the null hypothesis was rejected. Fathers showed a greater influence on sons' vocational personality type than mothers (χ^2=40.45, p=.0001). Over 50 percent of the sons had the same personality types as their fathers, while only 17 percent of the sons in this study had the same personality types as their mothers (Table 35).

Table 35. Number and percentage of CEAC clients (sons) with the same vocational personality types as their fathers and mothers (χ^2=40.45, p=.0001).

Number (%) of sons with ...	Fathers	Mothers
Same types as parents	83 (50%)	28 (17%)
Different types from parents	82 (50%)	139 (83%)
Total	165 (100%)	167 (100%)

Question 5. The effect of parents' gender on the independence of parents' and their daughters' vocational personality types.

This question is identical to question 4 but included daughters only.

Ho: The personality types of fathers are independent of the personality types of mothers when matched with their daughters' personality types

The results of the chi-square test indicated that the null hypothesis was rejected. Mothers showed a greater influence on daughters' vocational personality types than fathers (χ^2=18.879, p=.0001). Whereas only 18 percent of daughters had the same personality types as their fathers, nearly 38 percent of daughters had the same personality types as their mothers (Table 36).

Table 36. Number and percentage of CEAC clients (daughters) with the same vocational personality types as their fathers and mothers (χ^2=18.879, p=.0001).

Number (%) of daughters with ...	Fathers	Mothers
Same types as parents	36 (18%)	79 (38%)
Different types from parents	163 (82%)	129 (62%)
Total	199 (100%)	208 (100%)

Question 6. The effect of clients' educational level on the independence between parents' and their children's vocational personality types.

Do proportionately more children with a certain level of educational experience or attainment exhibit their parents' vocational personality type than children with other levels of educational attainment? The level of education was

stratified into four categories and examined separately for mothers and fathers. The question asked whether the level of education achieved by a child influenced the relationship between a child's personality type and his or her parent's type.

Ho: The personality types of CEAC clients (children) are independent of the personality types of fathers when children are grouped by educational attainment

The results of the chi-square test indicated that the null hypothesis was not rejected (χ^2=1.315, p=.7256). Educational levels did not influence significantly the relationship between children's and fathers' vocational personality types. The level of congruence varied from a low of 29 percent of the children currently who are enrolled in college and have the same personality types as their fathers to a high of 38 percent of the children who have an associate's degrees and the same personality types as fathers (Table 37).

The null hypothesis for independence between the personality types of children and their mothers when children were grouped by educational attainment is stated below.

Ho: The personality types of CEAC clients (children) are independent of the personality types of mothers when children are grouped by educational attainment

The results of the chi-square goodness of fit test indicated that the null hypothesis was not rejected (χ^2=5.939, p=.1146).

Table 37. Number (percent) of CEAC clients (children) by educational attainment with the same personality type as their fathers (χ^2=1.315, p=.7256).

Number (%) of children with ...	Level of educational attainment*				
	none	some	assoc	bacc	Total
Same type as fathers	44	48	11	12	115
(Percent same)	34%	29%	38%	31%	31%
Different type from fathers	84	115	18	27	244
(Percent different)	66%	71%	62%	57%	69%
Total	128	163	29	39	359
(Total percent)	100%	100%	100%	100%	100%

*notes: none: no college experience, some: currently enrolled in college but no degree attained, assoc: associate's degree, bacc: four- year degree or higher

Educational levels did not influence significantly the relationship between children's and mothers' vocational personality types, although the percent differences between levels was much smaller than in the comparison between children and their fathers. As the level of education increases, a greater percent of the children have identical personality types to their mothers. Only 25 percent of children in the study with no college education had the same personality types as their mothers. On the other hand, over 44 percent of children with a four-year degree or higher have the same personality types as their mothers (Table 38).

Table 38. Number of CEAC clients (children) by educational attainment with the same personality type as their mothers (χ^2=5.939, p=.1146).

Number (%) of children with ...	Level of educational attainment*				
	none	some	assoc	bacc	Total
Same type as mothers	33	47	8	19	107
(Percent same)	25%	28%	31%	44%	29%
Different type from mothers	98	123	18	24	263
(Percent different)	75%	72%	69%	56%	71%
Total	131	170	26	43	370
(Total percent)	100%	100%	100%	100%	100%

*notes: none: no college experience, some: currently enrolled in college but no degree attained, assoc: associate's degree, bacc: four- year degree or higher

Question 7. The effect of clients' age level on the independence between parents' and their children's vocational personality types.

Does age have an effect on the independence between a child and his or her parent's personality type? Ages were stratified into three classes and this question was examined separately for fathers and for mothers.

Ho: The personality types of CEAC clients (children) are independent of the personality types of fathers when children are grouped by age

The results of the chi-square test showed that the null hypothesis was not rejected (χ^2=3.809, p=.1489). Age did not have a significant effect on the similarity of vocational personality type. Although the differences were not statistically significant, older children in this study (age 30 and older) tended to be more similar in personality type to their parents than the relatively younger children (under age 22, and age 23 though 29) (Table 39).

Table 39. Number of CEAC clients (children) by age with personality types the same as their fathers and the number with personality types different than their fathers (χ^2=3.809, p=.1489).

Number (%) of children with ...	Age group (years) ≤22	23-29	≥30	Total
Same type as fathers	39	36	35	110
(Percent same)	27%	32%	39%	32%
Different type from fathers	105	78	54	237
(Percent different)	73%	68%	61%	68%
Total	144	114	89	347
(Total percent)	100%	100%	100%	100%

The same null hypothesis was posed in comparing the personality types of mothers and children when stratified by age group.

Ho: The personality types of CEAC clients (children) are independent of the personality types of mothers when children are grouped by age

The results of the chi-square test showed that the null hypothesis was not rejected (χ^2=3.163, p=.2057). As in the comparison between children's types and fathers' types, the children in the oldest age class (age 30 and older) tended to be more similar in personality type to their parents than the other two age groups (under 22, and 23 though 29) (Table 40). However, children in the youngest age class tended to be more similar to their mothers than children in the middle age class.

Table 40. Number (percent) of CEAC clients (children) by age with the same vocational personality types as their mothers (χ^2=3.163, p=.2057).

Number (%) of children with ...	Age group (years) ≤22	23-29	≥30	Total
Same type as mothers	40	30	34	104
(Percent same)	28%	25%	36%	29%
Different type from mothers	104	88	60	252
(Percent different)	72%	75%	64%	71%
Total	144	118	94	356
(Total percent)	100%	100%	100%	100%

Results of a Secondary Study on Clients' Career Aspirations

Of the 428 CEAC clients who comprised the sample in the primary study, most also listed on their intake sheets from one to four occupations which they had "thought about."

These were occupations to which they aspired and as such provided a unique opportunity to further investigate the relationship between the vocational personality types of children and their parents.

As described in the chapter on methodology, clients who failed to list a career aspiration were eliminated from the secondary study. As shown below, this resulted in about 90 fewer fathers and children and 90 fewer mothers and children than in the primary study. Clients who listed one career aspiration were assigned that aspiration. Clients who listed more than one career aspiration were assigned each listed career aspiration once. However, no clients were assigned the same career aspiration (vocational personality type) more than once.

The data from the secondary study were used to answer the same seven questions posed in the primary study. The same methods and analytical tools were also used. The results of the secondary study are provided below.

Question 1. Independence between parents' and their children's (aspired) vocational personality types.

The results of the chi-square analyses of children's personality types compared for independence from their father's types are shown for each type in Tables 41-48. The results indicate that the null hypothesis was not rejected

for all types and both parents. In other words, the proportion of R-types fathers who have R-type children was not significantly different from the proportion of non-R type fathers who have R-type children (χ^2=.828, p=.3628). Although nearly 41 percent of R-type fathers had R-type children, nearly 35 percent of non-R-type fathers also had R-type children (Table 41). The null hypothesis was also not rejected for S-type fathers (χ^2=2.815, p=.0934), E-type fathers (χ^2=2.89, p=.0891), and C-type fathers (χ^2=.091, p=.7628). Although not statistically significant, higher proportions of S-type, E-type and C-type children aspired to the same career types as their fathers than did the children of non-S-type, non-E-type and non-C-type fathers, respectively.

The results of the chi-square goodness of fit test for independence between the proportion of clients' personality type aspirations the same as or different from their mothers' types are shown for each type in Tables 45-48. The null hypothesis was not rejected for R-type mothers (χ^2=.089, p=.7653), S-type mothers (χ^2=.093, p=..7599), E-type mothers (χ^2=.125, p=.7236), or C-type mothers (χ^2=.005, p=.946). Unlike the relationship between fathers and their children, there was no evidence of a higher proportion of children aspiring to careers which have the same vocational personality types as the career of their mothers.

Table 41. Number of CEAC clients (children) who aspire to be in R-type or non-R-type occupations matched with their R-type and non-R-type fathers (χ^2=.828, p=.3628).

Number of children who aspire to be...	Number (%) of fathers who are ... Realistic (R)	Not Realistic (Non-R)
Realistic (R)	58 (41%)	47 (35%)
Not Realistic (Non-R)	84 (59%)	88 (65%)
Total	142 (100%)	135 (100%)

Table 42. Number of CEAC clients (children) who aspire to be in S-type or non-S-type occupations matched with their S-type and non-S-type fathers (χ^2=2.815, p=.0934).

Number of children who aspire to be...	Number (%) of fathers who are ... Social (S)	Not Social (Non-S)
Social (S)	17 (40%)	62 (26%)
Not Social (Non-S)	25 (60%)	173 (74%)
Total	42 (100%)	235 (100%)

Table 43. Number of CEAC clients (children) who aspire to be in E-type or non-E-type occupations matched with their E-type and non-E-type fathers (χ^2=2.89, p=.0891).

Number of children who aspire to be...	Number (%) of fathers who are ... Enterprising (E)	Not Enterprising (Non-E)
Enterprising (E)	34 (45%)	66 (33%)
Not Enterprising (Non-E)	42 (55%)	135 (67%)
Total	76 (100%)	201 (100%)

Table 44. Number of CEAC clients (children) who aspire to be in C-type or non-C-type occupations matched with their C-type and non-C-type fathers (χ^2=.091, p=.7628).

Number of children who aspire to be...	Number (%) of fathers who are ... Conventional (C)	Not Conventional (Non-C)
Conventional (C)	5 (29%)	60 (23%)
Not Conventional (Non-C)	12 (71%)	200 (77%)
Total	17 (100%)	260 (100%)

Table 45. Number of CEAC clients (children) who aspire to be in R-type or non-R-type occupations matched with their R-type and non-R-type mothers (χ^2=.089, p=.7653).

	Number (%) of mothers who are ...	
Number (%) of children who are ...	Realistic (R)	Not Realistic (Non-R)
Realistic (R)	6 (32%)	101 (38%)
Not Realistic (Non-R)	13 (68%)	166 (62%)
Total	19 (100%)	267 (100%)

Table 46. Number of CEAC clients (children) who aspire to be in S-type or non-S-type occupations matched with their S-type and non-S-type mothers, S-type mothers (χ^2=.093, p=.7599).

	Number (%) of mothers who are ...	
Number (%) of children who are ...	Social (S)	Not Social (Non-S)
Social (S)	54 (36%)	47 (34%)
Not Social (Non-S)	94 (64%)	91 (66%)
Total	148 (100%)	138 (100%)

Table 47. Number of CEAC clients (children) who aspire to be in E-type or non-E-type occupations matched with their E-type and non-E-type mothers (χ^2=.125, p=.7236).

	Number (%) of mothers who are ...	
Number (%) of children who are ...	Enterprising (E)	Not Enterprising (Non-E)
Enterprising (E)	15 (44%)	99 (39%)
Not Enterprising (Non-E)	19 (56%)	153 (61%)
Total	34 (100%)	343 (100%)

Table 48. Number of CEAC clients (children) who aspire to be in C-type or non-C-type occupations matched with their C-type and non-C-type mothers (χ^2=.005, p=.946).

	Number (%) of mothers who are ...	
Number (%) of children who are ...	Conventional (C)	Not Conventional (Non-C)
Conventional (C)	20 (24%)	49 (25%)
Not Conventional (Non-C)	65 (76%)	149 (75%)
Total	85 (100%)	198 (100%)

Part two of question 1 asked whether the client aspired to an occupation/personality type which was independent of his or her father's personality type when compared with each of the three other personality types. The same question was

presented for the mother's personality type. In other words, are certain parental personality types likely to influence the personality type to which the client aspires more than others.

The results of the chi-square analysis showed that the null hypothesis was not rejected for fathers (χ^2=.071, p=.7092). No vocational personality types to which clients aspired showed a greater percentage of being exhibited by their fathers than the other personality types (Table 49). The null hypothesis was also not rejected for mothers (χ^2=6.153, p=.1041). Children are equally likely to aspire to an occupation of any of the four vocational personality types regardless of the parents' vocational personality type (Table 50).

Table 49. Number of CEAC clients (children) who aspire to vocational personality types that are the same as or different than their fathers' type (χ^2=.071, p=.7092).

	Personality type				
Number (%) of children with ...	R	S	E	C	Total
Same type as fathers	58	17	34	5	114
(Percent same)	41%	40%	45%	29%	41%
Different type from fathers	84	25	42	12	163
(Percent different)	59%	60%	55%	71%	68%
Total	142	42	76	17	277
(Total percent)	100%	100%	100%	100%	100%

Table 50. Number of CEAC clients (children) who aspire to vocational personality types that are the same as or different than their mothers' type (χ^2=6.153, p=.1041).

Number (%) of children with ...	Personality type R	S	E	C	Total
Same type as mothers	6	54	15	20	95
(Percent same)	32%	36%	44%	24%	33%
Different type from mothers	13	94	19	65	191
(Percent different)	68%	64%	56%	76%	67%
Total	19	148	34	85	286
(Total percent)	100%	100%	100%	100%	100%

Question 2. The effect of clients' gender on the independence between parents' vocational personality types and their children's aspirations.

This question asked whether a client's gender affects the relationship between the client's personality type to which he or she aspires and the personality type of his or her father. Stated another way, this question asked whether sons or daughters are more likely to aspire to their fathers' personality type.

The null hypothesis was not rejected for independence between fathers' influence on their sons as opposed to their daughters (χ^2=18.224, p=.0001). As in the primary study,

fathers were found to have a significantly greater influence on the vocational personality types to which the sons aspire than those to which the daughters aspire (Table 51). Nearly 58 percent of the sons aspired to the same personality type as their fathers. About 31 percent of the daughters aspired to the same vocational personality type as their fathers.

Table 51. Number (percent) of CEAC clients (sons and daughters) with vocational personality type aspirations the same as their fathers' vocational personality types (χ^2=18.224, p=.0001).

Number (%) of children who ...	Sons	Daughters
aspire to same type as their fathers	72 (58%)	42 (31%)
aspire to different type from their fathers	53 (42%)	95 (69%)
Total	125 (100%)	137 (100%)

The second part of question 2 asked whether sons or daughters are more likely to aspire to their mother's personality type. As a result of the chi-square test, the null hypothesis was rejected (χ^2=6.402, p=.0114), indicating that mothers have a greater influence on daughters' than on sons' vocational personality type aspirations. Whereas over 41 percent of the daughters aspired to the same personality type as their mothers, about 26 percent of the sons aspired to the same personality types as their mothers (Table 52).

Table 52. Number (percent) of CEAC clients (sons and daughters) with vocational personality type aspirations the same as their mothers' vocational personality types (χ^2=6.402, p=.0114).

Number (%) of children with ...	Sons	Daughters
aspire to same type as their mothers	34 (26%)	60 (41%)
aspire to different types from their mothers	96 (74%)	85 (59%)
Total	130 (100%)	145 (100%)

Question 3. The effect of parents' gender on the independence between parents' vocational personality types and their children's aspirations.

Is it more likely that a child will aspire to the mother's personality type or to the father's personality type? The results of the chi-square test indicated that the null hypothesis was rejected. Unlike clients in the primary study, clients in the secondary study were more likely to aspire to an occupation with the same vocational personality type as their fathers as opposed to their mothers (χ^2=4.536, p=.0332). Nearly 44 percent of the clients aspired to an occupation with the same personality type as their father, while about 34 percent of the clients aspired to an occupation with the same vocational personality type as their mother (Table 53).

Table 53. Number of CEAC clients (children) with vocational personality type aspirations the same as their parents' (fathers' or mothers') vocational personality types (χ^2=4.536, p=.0332).

Number (%) of children with ...	Fathers	Mothers
Same type as parents	114 (43%)	94 (34%)
Different type from parents	148 (57%)	181 (66%)
Total	262 (100%)	275 (100%)

Question 4. The effect of parents' gender on the independence between parents' vocational personality types and their sons' aspirations.

Are sons more likely to aspire to vocations with their fathers' personality type or their mothers' personality type?

Ho: The personality types of fathers are independent of the personality types of mothers when matched with the personality types to which their sons aspire

As a result of the chi-square test, the above null hypothesis was rejected. Fathers were found to have a greater influence on the vocational aspirations of sons than did mothers (χ^2=24.665, p=.0001). The proportion of sons who aspired to the same personality types as their fathers was more than double the proportion who aspired to the same types as their mothers (Table 54).

Table 54. Number of CEAC clients (sons) with vocational personality type aspirations the same as their parents (fathers' or mothers') vocational personality types (χ^2=24.665, p=.0001).

Number (%) of sons with ...	Fathers	Mothers
Same types as parents	72 (58%)	34 (26%)
Different types from parents	53 (42%)	74 (83%)
Total	125 (100%)	130 (100%)

Question 5. The effect of parents' gender on the independence between parents' vocational personality types and their daughters' aspirations.

Question 5 is identical to question 4 but includes daughters rather than sons.

Ho: The personality types of fathers are independent of the personality types of mothers when matched with their daughters' personality type aspirations

Although a higher proportion of daughters' aspired to the same vocational personality types as their mothers than their fathers, the difference was not statistically significant (χ^2=3.059, p=.0803) and the null hypothesis was not rejected. Over 41 percent of the daughters aspired to the same personality types as their mothers, while about 31 percent of of the sons aspired to the same personality types as their fathers (Table 55).

Table 55. Number (percent) of CEAC clients (daughters) with vocational personality type aspirations the same as their parents' (fathers' or mothers') vocational personality types (χ^2=3.059, p=.0803).

Number (%) of daughters with ...	Fathers	Mothers
Same types as parents	42 (31%)	60 (41%)
Different types from parents	95 (69%)	85 (59%)
Total	137 (100%)	145 (100%)

Question 6. The effect of clients' educational level on the independence between parents' vocational personality types and their children's vocational personality type aspirations. Do proportionately more children with a certain level of educational experience or attainment aspire to their parents' vocational personality type than children with other levels of educational attainment? The level of education was stratified into four categories and examined separately for mothers and fathers.

Ho: The personality types to which CEAC clients (children) aspire are independent of the personality types of fathers when children are grouped by educational attainment

The results of the chi-square test indicated that the null hypothesis was not rejected (χ^2=1.54, p=.6731). Educational levels do not influence significantly the relationship

between fathers' vocational personality types and the types to which their children aspire. Clients with an associate's degree represented the group with the lowest proportion of clients who aspired to the same personality types as their fathers (35 percent). Clients with a baccalaureate or post-baccalaureate degree represented the highest proportion of clients who aspired to the same personality types as their fathers (48 percent) (Table 56).

Table 56. Number (percent) of CEAC clients (children) by educational attainment who aspire to vocational personality types that are the same as their fathers (χ^2=1.54, p=.6731).

Number (%) of children with ...	Level of educational attainment*				
	none	some	assoc	bacc	Total
Same type as fathers	34	53	7	16	110
(Percent same)	37%	41%	35%	48%	40%
Different type from fathers	57	75	13	17	162
(Percent different)	63%	59%	65%	52%	60%
Total	91	128	20	33	272
(Total percent)	100%	100%	100%	100%	100%

*notes: none: no college experience, some: currently enrolled in college but no degree attained, assoc: associate's degree, bacc: four- year degree or higher

The chi-square test for goodness of fit between personality types to which CEAC clients (children) aspire and the personality types of their mothers when children are grouped by educational attainment indicated that the null hypothesis

was not rejected (χ^2=2.53, p=.4699). Educational levels did not influence significantly the relationship between the personality types to which CEAC clients (children) aspire and mothers' vocational personality types. However, as the education level increased, more of the children aspired to identical personality types as their mothers. Whereas about 29 percent of children in the study with no college education aspired to the same personality types as their mothers, over 41 percent of children with an associate's degree or higher aspired to the same personality types as their mothers (Table 57).

Table 57. Number (percent) of CEAC clients (children) by educational attainment who aspire to vocational personality types that are the same as their mothers (χ^2=2.53, p=.4699).

Number (%) of children with ...	Level of educational attainment*				Total
	none	some	assoc	bacc	
Same type as mothers	28	42	7	15	92
(Percent same)	29%	31%	41%	42%	33%
Different type from mothers	68	92	10	21	191
(Percent different)	71%	69%	59%	58%	67%
Total	96	134	17	36	283
(Total percent)	100%	100%	100%	100%	100%

*notes: none: no college experience, some: currently enrolled in college but no degree attained, assoc: associate's degree, bacc: four- year degree or higher

Question 7. The effect of clients' age level on the independence between parents' vocational personality types and their children's vocational personality type aspirations. Ages of clients were stratified into three classes and the following hypothesis was examined separately for fathers.

Ho: The personality types to which CEAC clients (children) aspire are independent of the personality types of fathers when children are grouped by age

The results of the chi-square test for clients and their fathers showed that the null hypothesis was not rejected (χ^2=.732, p=.6934). Age did not have a significant effect on the similarity of vocational personality types (Table 58). However, in comparison with results from the primary study, a higher proportion of clients, ≤22 years, aspire to the same types as their fathers than actually work in the same types.

Table 58. Number of CEAC clients (children) by age group who aspire to vocational personality types that are the same as their fathers (χ^2=.732, p=.6934).

Number (%) of children with ...	Age group (years) ≤22	23-29	≥30	Total
Same type as fathers	49	33	25	107
(Percent same)	44%	38%	40%	41%
Different type from fathers	63	54	38	155
(Percent different)	56%	62%	60%	59%
Total	112	87	63	262
(Total percent)	100%	100%	100%	100%

The same hypothesis was posed in comparing the personality types of mothers with the personality type aspirations of clients stratified by age group.

Ho: The personality types to which CEAC clients (children) aspire are independent of the personality types of mothers when children are grouped by age

The results of the chi-square test showed that the null hypothesis was not rejected (χ^2=4.472, p=.1069). Unlike the comparison between clients' and their fathers' types, however, the clients in the oldest age class (age 30 and older) tended to be more similar in personality type to their mothers than were clients in the other two age groups (age 22 and under and age 23 though 29) (Table 59).

Table 59. Number of CEAC clients (children) by age group who aspire to vocational personality types that are the same as their mothers (χ^2=4.472, p=.1069).

Number (%) of children with ...	Age group (years) ≤22	23-29	≥30	Total
Same type as mothers	33	28	30	91
(Percent same)	29%	31%	44%	34%
Different type from mothers	79	62	38	179
(Percent different)	71%	69%	56%	66%
Total	112	90	68	270
(Total percent)	100%	100%	100%	100%

Highlights of the Results by Question Area

A general review of the data base for the study and results from the seven question areas are summarized below and discussed in Chapter 5. Totals of 369 fathers and 369 children were included in the study. The largest number of types for fathers was the 201 R-type fathers. Of these R-type fathers, 76 had children who were also R-type, while there were 35 S-type, 30 E-type and 60 C-type. There were only 21 C-type fathers but 110 C-type children.

There was a total of 380 mothers and children in the study. Most mothers (210) were of the S-type. Children of the S-type mothers included 41 S-types, 70 R-types, 42 E-types, and 57 C-types. Most children in the study were of the R-type (120) or C-type (120).

Question 1. Were children's personality types the same as their parents' personality types? The results indicated that children of R-type fathers were more likely to be R-types than were children of non-R fathers. Children of S-type fathers, E-type fathers, and C-type fathers were just as likely to have had fathers that were any of the other three personality types. Although the independence of fathers and children of the E-type and C-type was not statistically significant, a higher proportion of children from each type were the same types as their fathers than as fathers of other types.

A significantly higher proportion of the mothers of S-type children were S-type as opposed to non-S type. This relationship was even stronger for C-type mothers and their C-type children. However, R-type mothers and E-type mothers were just as likely to have children that were any of the other three types.

Question 2. Were sons or daughters more likely to exhibit their fathers personality types? Were sons or daughters more likely to exhibit their mothers' personality types. In this study, fathers had a significantly greater influence on their sons vocational personality type than on their daughters. Whereas over 50 percent of the sons had the same personality types as their fathers, only 18 percent of the daughters had the same types as their fathers.

Conversely, mothers had a greater influence on daughters' than on sons' vocational personality type. Whereas 38 percent of the daughters had the same personality types as their mothers, only 17 percent of the sons exhibited the same personality types as their mothers.

Question 3. Were proportionately more of the children's personality types identical to their mothers' or their fathers' personality types? About the same proportion of fathers and mothers had identical personality types as their children. About 33 percent of the fathers had the same

personality types as their children, while about 29 percent of mothers had the same personality types as their children.

Question 4. Were sons more likely to exhibit the father's personality type or the mother's personality type. The results indicated that fathers had a greater influence on sons' vocational personality type than mothers. Over 50 percent of the sons had the same personality types as their fathers, while only 17 percent of the sons in this study had the same personality types as their mothers.

Question 5. This question is identical to question 4 but included daughters only. Mothers showed a greater influence on daughters' vocational personality types than fathers . Whereas only 18 percent of daughters had the same personality types as their fathers, nearly 38 percent of daughters hade the same personality types as their mothers.

Question 6. Do proportionately more children with a certain level of educational attainment exhibit their parents' vocational personality type than children with other levels of educational attainment? Educational levels did not influence significantly the relationship between children's and fathers' vocational personality types. The level of congruence varied from a low of 29 percent of the children currently who are enrolled in college and have the same personality types as their fathers to a high of 38 percent of

the children who have an associate's degrees and the same personality types as fathers .

Likewise, educational levels did not influence significantly the relationship between children's and mothers' vocational personality types. However, the percent differences between levels were much smaller than in the comparison between children and their fathers. As the level of education increased, a greater percent of the children had identical personality types to their mothers. Only 25 percent of children in the study with no college education had the same personality types as their mothers. On the other hand, over 44 percent of children with a four-year degree or higher have the same personality types as their mothers.

Question 7. Did age have an effect on the independence between a child and his or her parent's personality type? Although age did not have a statistically significant effect on the similarity of vocational personality type, older children in this study (age 30 and older) tended to be more similar in personality type to their fathers than the other two age groups (under 22, and 23 though 29). As in the comparison between children's types and fathers' types, the children in the oldest age class (age 30 and older) tended to be more similar in personality type to their mothers than the other two age groups (under 22, and 23 though 29) (Table 39). However, children in the youngest age class tended to be more

similar to their mothers than children in the middle age class.

The results of the secondary study revealed that most of the null hypotheses were not rejected. In other words, most differences between proportions were not statistically significant. Therefore, children's career aspirations as indicated by personality type did not tend to show distinctive differences from one another. Children were equally likely to aspire to the same personality type as their parents.

As in the primary study, however, fathers were found to have a significantly greater influence on the vocational personality types to which the sons aspired than those to which the daughters aspired. Whereas nearly 58 percent of the sons aspired to the same personality type as their fathers, about 31 percent of the daughters aspired to the same vocational personality type as their fathers. As in the primary study, mothers were also shown to have had a greater influence on daughters' than on sons' vocational personality type aspirations. Whereas over 41 percent of the daughters aspired to the same personality type as their mothers, about 26 percent of the sons aspired to the same personality types as their mothers.

Unlike results in the primary study, clients in the secondary study were more likely to aspire to an occupation with the same vocational personality type as their fathers as opposed to their mothers. Nearly 44 percent of the clients aspired to an occupation with the same personality type as their father, while about 34 percent of the clients aspired to an occupation with the same vocational personality type as their mother.

Fathers in the secondary study also showed a greater influence on the vocational aspirations of sons than did mothers. The proportion of sons who aspired to the same personality types as their fathers was more than double the proportion who aspired to the same types as their mothers. However, although a higher proportion of daughters' aspired to the same vocational personality types as their mothers than their fathers, the difference was not statistically significant. Over 41 percent of the daughters aspired to the same personality types as their mothers, while about 31 percent of of the sons aspired to the same personality types as their fathers.

As in the primary study, results of the secondary study indicated that educational levels do not influence significantly the relationships between parents' vocational personality types and the types to which their children aspire for either fathers or mothers. Likewise, age was not

shown to have a significant effect on the similarity of vocational personality types for either fathers or mothers. The results are discussed in Chapter 5. Comparisons are drawn between the findings of this study and the work of Holland, Smart and others.

CHAPTER FIVE

SUMMARY

Introduction

Research was conducted to explore Smart's (1989) suggestion that the Social (S) personality type, when found in parents, may have a greater probability of influencing the personality type of their children than the other five personality types, as described by Holland (1973, 1985). This study investigated the influence of parental personality type, as expressed by vocation, on personality type development in their children as sample sizes allow. The influence of this factor was compared by gender, age, and educational level.

Broader studies on life history influences were completed by Eberhardt & Muchensky (1982, 1984), Neiner & Owen (1985), Smart (1989) and others. Other life history influences explored in these prior studies included gender, ethnic background, parental income levels, type of college attended, and extent of college education as well as parental personality type. Although these studies cite that parent personality type is an influencing factor, the studies have not determined if one or more of the six types have a greater probability of influencing children's personality type.

The selection of parental personality type as a factor in influencing offspring was guided by the results of Smart's (1989) study which suggested the need to further investigate the development of type and to test the premise that Social type parents may have greater influence on their children than other personality types, specifically Enterprising (E) and Investigative (I). (His study involved only Social, Enterprising, and Investigative types rather than all six Holland Vocational Personality types.) Research related to the influence of parental personality type on children's personality type would: (1) contribute to existing knowledge of how personality and interests are developed, (2) provide a greater understanding for career counselors on factors influencing career choice, and (3) further investigate the significance of Holland's theory.

This study allowed for Holland's premise that personality type in parents produces similar personality type in their offspring, as has been tested by Smart (1989). The null hypotheses explored in this study and the results of statistical analyses are discussed in this chapter.

Major Findings and Conclusions

Fathers' and Mothers' Influence On Children

The first research question addressed the influence of each of the six different personality types of parents, as described by Holland (1973, 1985), on children to determine

if any of the types would show a more significant influence on offspring than others. Smart in his 1989 research had suggested that Social type parents may influence their children's personality type more often than other types. The question was posed, do each of the six personality types described by Holland (1973, 1985) influence their offspring equally, and/or which types, if any, have a higher probability of influencing their offspring than the others?

A null hypothesis was presented for study of the independence of fathers' and their children's personality types, and mothers' and their children's personality types, type by type. Of the six personality types described by Holland, Investigative (I) and Artistic (A) were not included in this study as the sample sizes were too small. When comparing all types of fathers simultaneously, Realistic (R) and Conventional (C) type fathers were found to influence their children more often than Social (S) or Enterprising (E) types. When looking at all four types of personalities in the mothers, the C personality type influenced their children more often than any of the others.

In the second part of question one, comparing each of the four types to the individual personality types of the children, the null hypotheses were rejected in separate comparisons involving fathers and mothers. Of the four personality types the R-type fathers were significantly more

likely to have R-type children than non-R-type fathers. Children with the S, E, or C personality type were independent of their fathers' personality type. S-type mothers and C-type mothers were more likely to have children who exhibited the S-type and C-type, respectively. Children of R-type and E-type mothers were not as likely to have children with their same types.

Holland (1985) believed that the development of vocational types result from several genetic, cultural, personal, and environmental forces. For example, he suggested that "types produce types" through parental influence of physical and psychological potential and manipulation of environmental opportunities. This parental influence reinforces preferences for certain activities and aversions to others at early stages in a child's development. This influence can be re-evaluated through an individual's involvement with other individuals and environments. However, this early influence creates a "characteristic disposition or personality type that is predisposed to exhibit characteristic behavior and to develop characteristic personality traits, attitudes, and behaviors that in turn form repertories or collections of skills, and coping mechanisms" (Holland, 1985).

Holland's work may lead to one possible explanation for the greater influence of Realistic and Conventional type fathers over their children than other types. Holland described both

R- and C-types as persistent and practical. Both personality types show a preference for activities that entail the explicit, ordered, systematic manipulation of either tools (R) or data (C). The other two types included in this study, S and E, are not described as having either of these two characteristics, and demonstrate an aversion to both explicit, ordered, systematic activities (S) and to observational, symbolic, and systematic activities (E).

Holland's research has defined work environments in which each personality type may be rewarded for exhibiting the personality traits specific to that type. If the home environment can be manipulated by types to reflect given traits and values and, if it can be assumed that these types would also recreate the defined work environment in their homes, then the similarities between an R and C home environment could be assessed to evaluate the impact of others' (children) development in that environment. For example, in this researcher's experience as a career counselor working with telephone operators and testing for personality type, a trend has been observed that operators, employed for ten years or more, had personality types that more likely matched the personality type of a telephone operator work environment. However, operators (and other clients) with less than five years experience often have personality types which vary from the expected type. Although no specific research has been done in this regard,

Holland believed that in general long-term exposure to a work environment tends to reinforce personality traits necessary for success in that work environment and to discourage personality traits that would not contribute to success in that environment.

In comparing the R and C work environments, Holland has shown similarities -- (R) reward people (children) for the display of conventional values: money, power, possessions and (C) reward people (children) for values associated with money, dependability, and conformity.

The personality traits that would be acquired or reinforced which are similar between both R and C include: Conforming, Persistent, and Practical. When comparing these personality traits to the rewarding work environment of S and E types, Holland concluded that the preferred work environments (home environments) of S-types was to reward people (children) for the display of social values (friendly, helpful, cooperative); while the rewarding E-type environment was to reward people (children) for displaying enterprising values (money, power, status). Neither S nor E sought to acquire or reinforce personality traits such as conforming, persistent or practical.

Mothers were found to influence the personality type of their daughters if they were a C- or an S-type. When comparing the

preferences, competencies, self perceptions, and values of the C- and the S-personality types, there are no similar traits. When comparing the work environments (home environment), the Conventional environment encourages people (children) to see themselves as conforming, orderly, non-artistic, and as having clerical competencies. It also encourages them to see the world in conventional, stereotyped, constricted, simple and dependent ways and rewards people (children) for the display of conventional values: money, dependability, conformity. On the other hand, the social type encourages people to see themselves as liking to help others, understanding others, cooperative, and sociable. It also encourages them to see the world in flexible ways and rewards people (children) for the display of social values.

The E-personality type in parents did not show a significant influence on their children in any of the study areas. Perhaps this was due to how E-types relate to others including their children. When comparing the secondary effects that Holland (1973,1985) describes for the environments of the different types, the four types in these studies are described as relating to others as follows.

The Realistic type is "less adept at coping with others; they learn instead simple, direct, masculine coping methods" (Holland). This researcher interprets Holland's term

"masculine" to refer to a physical means of expressing oneself. Realistic types have difficulty expressing their emotions verbally, and are uncomfortable communicating their feelings. The Social type is "more apt to cope with others by being friendly, helpful, cooperative." The Conventional type is "more prone to compete with others in a conventional manner - to be controlling, conforming, practical." And the Enterprising type is "more prone to compete with others in an enterprising manner - by dominance, talkativeness, and so on."

The Influence of Fathers on Sons vs. Daughters and the Influence of Mothers on Sons vs. Daughters.

The second question in this study examined whether the gender of children influenced the relationship of children and parental personality type. Are females or males more or less likely to be influenced by their parents? The researcher presented a null hypothesis that gender would not be a factor when considering parental influence. Of the 165 sons in this study 83 sons had the same personality types as their fathers compared with 82 which had a different personality from their fathers. Of the 199 daughters in the study only 36 had similar personalities as their fathers.

When comparing daughters to their mothers, the test showed that 79 of the 208 daughters had similar personality types as their mothers while only 28 of the 167 sons had similar

personality types as their mother (p=.0001 for both genders). These results indicated that fathers have more influence on their sons' personality type than on their daughters' personality type, and mothers have more influence on their daughters' personality type than their sons' personality type.

Newman and Newman (1984) discussed children's development and identification with parents. They addressed the question of why a child alters his or her behavior in the direction of becoming more like one parent than another and the motives that are satisfied. The psychoanalytical theory and the social learning theory were reviewed in their book as possible explanations of why children choose to imitate one parent over the other. The psychoanalytical theory suggested two different processes. The first process is the fear of loss of love, which occurs when a child discovers their dependence on the parent. "Children behave like the parent in order to ensure a continued positive relationship. Eventually they incorporate aspects of the loved ones personality; into their own self concept"(Newman and Newman, 1984). The second process is identification with the aggressor, "this motive is aroused when children experience some degree of fear of their parents. In order to protect themselves from fear, they perform behaviors that are similar to those they fear"(Newman and Newman, 1984).

The Social Learning Theory provides another possible explanation for the higher degree of similarity in parental and children types (Bandura, 1977). This theory proposes that status and power motivate children, therefore the person who controls resources are imitated as long as that behavior is reinforced.

The Influence of Mothers vs. Fathers on Children's personality types.

Question three asked about the relationship between parental role, i.e. mother or father, and its influence on the children. Are mothers or fathers more or less likely to influence their children? Again, a null hypothesis indicating no differentiation in influence was proposed. In this test the null hypothesis was not rejected, indicating that there was not a significant difference between mothers and fathers in their influence on children's personality types (sons and daughters combined). Although traditionally mothers have spent more time and accepted a greater role in the upbringing of children in society, their vocational personality type was not shown to be more influential on their children than fathers, except in terms of mother to daughter as demonstrated in the results of research question five discussed below. In assigning type to chosen occupations a homemaker was classified as a Social type. However, the personality type shown to influence most often in the mother-daughter relationship was found in the Conventional

personality type classification. This C-type is a type most commonly associated with ordered and structured behavior.

Mothers' vs. Fathers' Influence on Sons' and/or Daughters' Personality Type

Questions four examined parental influence from a slightly different gender perspective -- a comparison of the influence of the mother's type versus the father's type on their son's type. Does a father or mother have greater influence on their son's personality type? The results of this study indicated that fathers had a significantly greater influence over sons, with over 50 percent of sons having the same type as their fathers, while only 17 percent of the sons in this study had the same personality types as their mothers. Question five was presented to determine whether mothers or fathers had a greater influence on their daughters. The results of this study indicated that mothers had a greater influence over the personality type of their daughters. "The paths toward career decision making and career development are simply not the same for men and women in any social class or racial subgroup" (Newman & Newman,1984).

Newman and Newman (1984) state in their work on psychological development that during the early school age "some significant conceptual and emotional changes occur that give sex role a greater degree of clarity and highlight the relevance of one's sex in the overall self concept."

Initially in early childhood children: 1) define sex-related labels, 2) begin to use gender labels, 3) recognize that gender is stable, and 4) understand the genital basis of gender. Later in childhood, children move to an understanding of cultural expectations about appropriate gender behavior.

A study by Langlois & Downs (1980) compared reactions of fathers and mothers to cross-sex toys and found that girls experienced a more consistent sex role socialization from parents and peers than boys. Boys encountered rewards from their mothers for playing with opposite gender toys. "Fathers appeared to be more consistent than mothers in guiding girls and boys toward traditional play behavior. Mothers seemed to direct both boys and girls toward female sex-typed activities." Newman and Newman (1984) stated that "by the time children reach school age, they have been encouraged to adapt those standards (parents' sex-role standards) and are punished for what their parents view as sex-inappropriate behavior. Young boys are warned to 'stop acting like a sissy'."

College students were asked to evaluate their ability to complete the educational requirements and fulfill the job duties of ten traditionally male occupations and ten traditionally female occupations (Betz & Hackett, 1981). Males reported higher self-efficacy on five male occupations:

accountant, drafter, engineer, highway patrol officer, and mathematician. Females reported higher self-efficacy on five female occupations: dental hygienist, elementary school teacher, home economist, physical therapist, and secretary. Males thought that the most difficult job duties of the twenty occupations listed were those of an art teacher. Females thought that the most difficult duties were those of an engineer. The differences expressed regarding ability to succeed were not justified in the student's ability tests in Math or English. The data presented suggest gender-related stereotypes regarding the requirements of different careers. Such preconceived limitations may eliminate certain choices and emphasize others before the individual begins to plan for a career.

The Influence of Parents on the Personality Type of Children Categorized by Educational Attainment Levels

Question six examined the educational experience as an external factor of career choice. Are non-college attendees influenced more by their parents than college attendees? The data were compared at three levels of education, i.e. no college degree earned, current student, graduate, and then a second time making a distinction in the graduate column between associate degree holders, and 4-year or graduate degree recipients. In both sets of analyses, no parental type had a significantly greater influence on children's types, regardless of the levels of education.

The Influence of Parents' Personality Type on Children of Different Age Groups

The last question addressed the issue of age. Keeping in mind Holland's (1973, 1985) premise that life experiences affect vocational personality, the last question looked at personality type of children at various ages in comparison to parent's personality type. Do individuals age twenty-two and under, twenty-three to twenty-nine, or thirty years and older show a positive relationship between parental influence and career choice? About 27% of the sample in the age range of twenty-two and under had similar personality types as their parents, while 73% had different personality types. For ages twenty-three through twenty-nine, 31.6% of the sample had similar personality types as their parents and 68.4% had different personality types. About 39 percent of the thirty years of age and older group had the same personality types as their parents, while 61 percent had a different personality type. These results indicated that the older group studied had the largest percentage of clients with vocational personality types similar to their parents, although the difference was not statistically significant.

Secondary Study on Clients Career Aspirations

A secondary study was conducted to investigate the relationships between parental personality types and the personality types of clients (children) as indicated by occupations which the clients had "thought about." Each of

the seven research questions and corresponding null hypotheses were posed in the secondary study. More of the null hypotheses were rejected in the primary study than in the secondary study. As such, fewer significant differences were found in the secondary study.

Suggestions for Career Counselors

Although further research is necessary to more completely understand the relationship between parental and children personality types, some important general observations can begin to be formed.

The differences between the personality types in parents and the extent to which they influence their children's personality types adds further understanding of the role that parental personality type plays in influencing the development of personality types in their children. "Recent efforts to apply a family systems perspective to the study of important career development processes are premised on the belief that individual development is better understood when viewed within the context of immediate, as opposed to historical, family relationships. In short, the family is conceived as a dynamic network of emotional inter-dependencies that, at any given moment, exerts functional constraints on the behavior of individual members" (Lopez, 1989). While immediate influences may be important to career decision making, the results of this study indicated that the

behavior of individuals in terms of the selection of given careers can be influenced significantly by more stable environmental factors such as parental personality types as manifested in the work (home) environment. Such influences were shown to be particularly significant between fathers and sons and mothers and daughters.

The R-type father is most likely to influence the personality type of their sons. Of significance to career counselors are the findings that show among the traits of the R-personality is the avoidance of traditional educational settings. However, continuing education is becoming more important for future job placement.

In reviewing the results related to the R-type influence it is important to understand that a large number of the R-type clients used in this study (children) are employed in the local automobile factory. This type of employment is attractive to the Realistic personality type as it rewards them for personality traits described by Holland, but it must also be acknowledged that this type of employment is attractive for the following reasons. It requires little or no advanced education to obtain a position (Realistic types avoid traditional education settings). There was mass hiring, therefore it was fairly easy to find employment with the auto companies, which may not be true in the future. And they offered better than average wage and benefit packages.

Many of these clients had parents who were employed by the same employer and may have encouraged them to seek employment at the factory. Current trends show that automobile factories will not be mass hiring in the near future. It is likely that layoffs and factory closings will be more common which is why many of the R-types in this study are pursuing career counseling to discuss other options. The Occupational Outlook Quarterly (1991) indicates that "about half the declining occupations are concentrated in manufacturing."

If a client is a true R-type as described by Holland other work environments which will reward them for their individual personality traits include: agriculture, nature, adventure, military activities, and mechanical activities (Strong, 1985). A review of career opportunities within these fields show that employment in agriculture, nature and farming occupations are projected to have the greatest decline with an anticipated drop of 224,000 jobs over the next decade (Occupational Outlook Quarterly, 1991). Employment in mechanical activities or skilled trades (which in Michigan can be seasonal and are directly effected by the economy) are also expected to decline, as are jobs in adventure and military areas. Both adventure and military employers are also downsizing and are not expected to see a large demand in the future, with the exception of correction officers which is expected to show a growth rate of 61 percent between 1990 and 2005 (Occupational Outlook Quarterly, 1991).

The Occupational Outlook Quarterly reports that "education is important in getting higher paying jobs; people with more education have higher earnings within virtually all occupations" (1991). Because of the Realistic personalities' inherent behavioral tendency to avoid traditional educational settings, the opportunities for retraining is limited, yet education will be important in preparing Realistic types for future careers. Career counselors must find a way to confront the behavioral tendencies that encourage R-type personalities to avoid advanced educational opportunities.

Another concern for career counselors highlighted in this study involved the traits of the C-personality in mothers which encourage organization and structure. It was suggested that these behaviors are encouraged and rewarded in their children, with mothers having more influence on their daughters than on their sons. Conventional type personalities would traditionally have been found in mid level careers like, secretarial, nursing, and accounting/bookkeeping. Women with C characteristics may have opportunities for advanced level careers in the technical age due to their personality preferences and that compatibility with career opportunities with computer systems and other technological advances.

Although not significant, the older participants of this survey show more similar personalities to their parents based

on career choice than younger participants. This may reflect society's an increasing acceptance of females pursuing non-traditional careers in society today. Older women who are returning to college after raising children explain that the perceived choices they had twenty or more years ago consisted mostly of employment in the clerical, nursing, and teaching fields. The younger generation of women have more options since educational institutions actively recruit women for non-traditional degree programs, and women from these programs are recruited by business and industry to work in fields such as the hard sciences, engineering, and business.

Conclusions

In the primary study, personality types associated with children's chosen occupations were more likely to be the same as their parents' types than types associated with occupations to which the children aspire. This stronger relation between parents and their children in the primary study suggests that the parental type influence may be stronger than the external influences which increase the client's perceived career options and may be different from their parental types.

While immediate influences may be important to career decision making, the results of this study indicated that the behavior of individuals in terms of the selection of given careers can be influenced significantly by more stable

environmental factors such as parental personality types as manifested in the work (home) environment. Such influences were shown to be particularly significant between fathers and sons and mothers and daughters.

Conventional characteristics which seem to be encouraged in the mother to daughter relationships may have more opportunities in the technical age due to opportunities and rewards in expressing their need for organization and structure with computer systems and other systematic technological advances. Whereas Realistic type personalities which are encouraged through father to son relationships and who are described as having an aversion to education will find less career opportunities in the future. The need to learn through 'doing' or hands-on activities should be addressed in the K-12 systems to allow these types more opportunities for interactive learning as opposed to lecture format structures.

Recommendations for Further Research

Further research can be done utilizing Holland's theory and personality type to look at parental influence in the single parent family. This study showed that fathers significantly influenced the personality type of their sons, and mothers significantly influenced the personality type of their daughters. When children are being raised in the home environment with only one parent, how strongly does that

parent influence the personality type of the children. Is there a gender difference?

In society today many households are dual income, with both parents working full-time and children being placed in day-care centers. How will this affect the influence of parent personality type on these children? What impact does the care-giver have on an individual's personality?

Holland indicates that Realistic personality types have developed an aversion to educational settings. This could be explained by their need to be physically active. The current educational system relies heavily on lecture format learning. Therefore Realistic personality types are more likely to be found (if given a choice) in vocational studies. Further research of innovative learning centers, both K through 12 and higher education, should be conducted to learn more about how Realistic personality types perceive their learning experience. Such studies may be increase the understanding of Realistic career paths for the future. Is it possible to create a learning environment that is attractive to Realistic types and still convey conventional learning?

Along these same findings is a concern that R-type fathers have a significant influence on their sons. Research which considers whether these children are at risk of not pursuing a college education could help career and educational

counselors to intervene in the process to ensure that R-type children are matched with programs that will give them the advanced training needed for future employment.

Many older women returning to the world of work discuss their perceptions about limitations in career choice. More research needs to be done to investigate what is being done to broaden the career role of women in our society.

It would be interesting to study a group of individuals who have degrees in a particular field but are not using them. Consider what factors these individuals see as influencing their choices related to different college majors and then the respective influences on career choice.

Additional studies in which Holland's personality type is collected quantitatively through testing, followed by comparisons of influences, could collaborate the findings of this study.

A final suggestion for further research would include an ethnographical study of high school students and college students to follow the influences of career choice.

Reflections

An individual's status and lifestyle depend on their occupational choice. Supposedly the person has decided, and is aware of, how to carry out the decision to achieve satisfying work. Yet, research indicates that many people do not deliberately choose their occupations (Renwick & Lawler, 1978).

The results of this study support the premise that there are many factors influencing an individual's career choice process. Factors of home environment, parental influence, and gender, begin to shape an individual's perceived choices early in a person's development before career options are known to them. And, as Holland surmised, some types can produce types. Parental personality type can be influential in determining what interests and activities a child will pursue -- particularly the R-personality type in fathers and the C- personality type in mothers. Additional research in these areas can provide insight to career counselors in a time when more individuals are making complex career decisions.

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