PERSONALITY CHARACTERISTICS OF GIVING- VERSUS RECEIVING-ORIENTED INDIVIDUALS

by

Edward Thomas Brewster

A Dissertation Submitted to the Faculty of the

COLLEGE OF EDUCATION

In Partial Fulfillment of the Requirements
For the Degree of

DOCTOR OF PHILOSOPHY

In the Graduate College

THE UNIVERSITY OF ARIZONA

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THE UNIVERSITY OF ARIZONA

GRADUATE COLLEGE

I hereby recommend that this dissertation prepared under my direction by Edward Thomas Brewster

entitled Personality Characteristics of Giving- Versus Receiving-Oriented Individuals

be accepted as fulfilling the dissertation requirement of the degree of Doctor of Philosophy

D W Smith — 4/15/71

Dissertation Director — Date

After inspection of the final copy of the dissertation, the following members of the Final Examination Committee concur in its approval and recommend its acceptance:*

D W Smith	4/15/71
Harold K Green	4/15/71
Marsden B. Stokes	4/15/71
Wallace Anderson	4-17-71
Paul R. Turner	4-21-71

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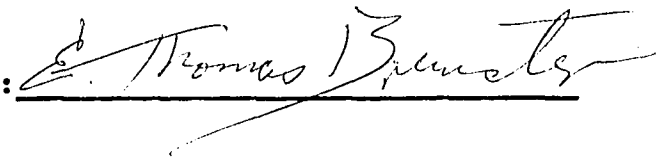
SIGNED: 

ACKNOWLEDGMENTS

The writer wishes to extend his appreciation to Dr. David W. Smith for the guidance he offered throughout this study. Appreciation is also extended to the other members of his doctoral committee for their assistance: Dr. Donald R. Ross, Dr. Paul R. Turner, Dr. Marsden B. Stokes and Dr. Waldo K. Anderson.

Acknowledgment is also made of the cooperation and assistance rendered by the administrators of the organizations participating in this study: Nathan Booth, Spanish Language School; Dr. Donald Larson, Toronto Institute of Linguistics; Orlando Romero and Harold Morse, Denver Department of Welfare; and Beulah Majors, R.N., Brackenridge Hospital of Austin, Texas. Appreciation is also extended to the numerous participants who endured hours of testing.

Dr. Paul G. Liberty of The University of Texas assisted in the interpretation of data, and Dr. Roger Weldon of The University of Arizona gave special assistance with the analysis of variance computer program.

A special appreciation is given to Dr. John S. Young and the staff of the Craig Rehabilitation Hospital

in Denver, Colorado who have convinced the writer that physical disability need pose minimal limitation.

Deepest gratitude and thanks go to the writer's deceased father and to his mother who have always encouraged his educational efforts and have provided much inspiration.

To his wife, Betty Sue, a very personal appreciation is extended for her unwavering love and devotion. She assisted in test administration and in typing the many drafts. She developed the computer program for calculating and listing item frequencies and gave many hours to punching the data for it. Her assistance in the preparation of the manuscript and her confidence in its completion are deeply appreciated.

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ABSTRACT

Meaningful satisfaction in life does not consist in what we receive but, paradoxically, in what we give of ourselves in service to others. The purpose of this study was to determine whether it would be possible to identify and measure psychological characteristics of the serving-oriented individual.

Procedure

Utilizing a sample of 54 female and 50 male subjects who were preparing for a life-time of service in Latin America as missionaries and educators, and who were operationally defined as being giving-oriented, an experimental psychological scale was developed through analysis of the Minnesota Multiphasic Personality Inventory item pool. The chi square test of significance was used to identify items which differentiated, beyond the .01 level of significance, the experimental sample from the MMPI standardization sample. This analysis was performed separately for males and females. Items which demonstrated discriminatory power for both sexes were combined to form an experimental scale.

Four additional samples of females were then compared with the original experimental sample of females: a

different sample of giving-oriented individuals, for replication purposes; a sample of hard-core welfare recipients who were operationally defined as being receiving-oriented, for contrastive purposes; and a sample of nurses and one of social workers, for comparison purposes.

The single-classification analysis of variance was used to test for significant differences between the means of the five samples on the Experimental Scale. The Experimental Scale was then analyzed with the thirteen standard MMPI scales and with those of the Sixteen Personality Factor Questionnaire, using analysis of variance and factor analysis procedures.

Findings and Conclusions

The Experimental Scale was found to differentiate between the giving- and receiving-oriented samples beyond the .01 level of significance. The two comparison sample means fell mid-way between the means of the giving-oriented and the receiving-oriented samples. It was found that the Experimental Scale was similar to other MMPI scales in that it was not bi-polar, thus the scale did not differentiate the receiving-oriented from the standardization norm.

When all thirty personality variables were factor analyzed, the Experimental Scale loaded on the first rotated factor along with the bi-polar 16 PF Factor L, and

the MMPI--K and Sc scales. Analysis of variance showed that the L, K, and Sc scales also significantly differentiated between the giving- and receiving-oriented samples. The Experimental Scale correlated positively with K, and negatively with the L and Sc scales.

It was concluded that the giving-oriented individual might be described in terms of characteristics measured by high K and low L and Sc. Such a person has a high acceptance of self, a healthy emotional adjustment, and is adaptable, outgoing, trustful, open, understanding, and cheerful.

CHAPTER 1

INTRODUCTION TO THE PROBLEM

Teachers, social volunteers, counselors, missionaries and many others have long demonstrated the paradoxical truth that the more we give of ourselves in service to others, the more meaningful our own life becomes. There is a story of a visitor to a lighthouse who said to the keeper, "Aren't you afraid to live here? It seems a dreadful place to reside with the storms and high winds constantly lashing the walls." "Oh," replied the man, "We're never concerned about ourselves. We think only of having our lamps burning brightly, and keeping the reflectors clear so that those in greater danger may be safe." Self-forgetful ones in the service of others find that in living for others they themselves receive a benefit.

The Problem

Deep satisfaction in life does not consist in what we receive, but rather, in what we give. Conversely, to pursue satisfaction, happiness, or meaning for one's life amounts to a self contradiction, for the more one strives the less he attains. These goals must be automatic

effects for they are self destroying as intentions. The phenomenon is evident in many realms from the neurotic to the normal. The person who strives for good health suffers from hypochondria to the degree in which he strives. In like manner, we strive for a good night's sleep and suffer from insomnia to the degree in which we strive. An anticipatory anxiety is the cause of this paradox. Satisfaction and meaning elude the seeker when they are pursued directly, because they are side effects of the achievement of a task and by-products of non-ego-directed activity.

People, then, whose lives are spent by giving themselves in service to others experience a paradoxical phenomenon. They strive not for personal satisfaction or meaning for existence yet these are effected. Philosophers have commented on this throughout the ages.

About 550 B.C. Lao Tzu (Sih 1961, p. 113) wrote,

> The more one lives for others,
> the fuller is his life.
> The more he gives,
> the more he abounds.

In the first century, Seneca (64 A.D.) wrote seven books on the morality of giving and receiving. The theme was not new, but Seneca's treatment of it is unusually comprehensive (1958). Later, George Macdonald (c 1890, p. 49) said, "In giving, a man receives more than he gives, and the more is in proportion to the worth of the thing given."

Jesus Himself said, "Happiness lies more in giving than in receiving" (Acts 20:35[1]).

An early psychologist (Bruce 1923, p. 149) refers to the concept of 'losing one's life in order to find it again' as the "paradox of Jesus." He said,

> The field of action is not a battlefield where duties to oneself contend against duties to others. It is a field where human life, like other things, is growing. And growth by its very nature means transmission, expansion, the giving of the root to the stalk and the stalk to the flower, a loss which is gain and a death which is life. Life was, as Jesus saw it, a process of development through service, of self-realization through self-sacrifice. The life that withheld itself was checked and dwarfed. The life that yielded itself was enriched.

More recently Ulich (Kroll 1970, p. 189) has written,

> If someone has 'found himself' he has not been engaged in an act of isolating himself from the rest of mankind. On the contrary, he has found his self only because he has entered into a ground of human existence where mutuality, love, and responsibility count more than personal gain.

The principal emphasis of this study was to identify and measure psychological characteristics of the serving-oriented individual. Much has been said in recent years about ensuring the quality of life for every American. This concern has been for individuals of a large receiving-oriented subculture who have not been motivated

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1. New English Bible.

or have not had the opportunity to become service-oriented. Insights into the personality of those who give their lives in service to others could be valuable as ways are sought to enable the welfare recipient to experience meaning for existence and quality of life.

Importance of the Problem

A patient in a hospital can become "institutionalized" when his needs are satisfied and he becomes dependent on the institution for his security. The prospect of leaving this security can be very threatening. In much the same way, thousands of Americans are institutionalized -- dependent on a system which satisfies their needs. Behavior directed toward the satisfaction of needs becomes an end in itself which fails to provide meaning and purpose for existence. Such behavior restricts the relationship between man and individuals in the world around him. There is then

> ...no place for any true encounter between man on the one hand and the world and its objects on the other. The objects in the world are no longer seen in their objective essence but, instead, only as more or less useful tools for the maintenance of homeostasis. There is no room left for anything such as commitment to a cause for its own sake or participation with a partner for the partner's sake. Instead, causes and partners are devaluated to the level of mere means to an end, namely the end of restoring certain conditions to the subject's psychic system. As means, they appear to the subject to have no <u>value</u> in themselves but to be only of <u>use</u> to him (Frankl 1960, p. 6).

In contrast, the present response to emerging social values has resulted in the "commitment to a cause" by an increasing number of young people. Writing on the values of youth, Havinghurst (Kroll 1970, p. 17) said, "The principal social value emerging...is the form of love we know as agape, or charity. This is the value that gives such dynamic force to the Peace Corps, VISTA, and other volunteer activities. This type of activism -- helping people -- has been, no doubt, the result of hard thinking about social problems of all kinds. Since the side effect of this kind of activity fills the inner hunger for purpose in life, it can be hoped that projects will be conceived which will motivate and involve members of the receiving-oriented segment of American society. It is probable that nothing would be more effective in developing the concept of personal dignity and worth among the socially and culturally "disadvantaged." Each individual

> ...may be helped to raise his sights and to recognize his own abilities. And he may be assisted in the development of values which will give meaning and direction to his own fulfillment. Happiness, despite popular notions to the contrary, is not best conceived as a state in which all one's wishes are satisfied and all one's hopes fulfilled. For most human beings, happiness is more surely found in striving toward meaningful goals. Education can help young people to develop such goals (Gardner 1961, p. 103).

An understanding of the contrasts between the educational, psychological and environmental factors which

are at work in individuals who are motivated to serve others and in receiving-oriented individuals might give educators and psychologists valuable information. If we believe with Gardner that education is the fundamental method of bringing about social change, then educators must provide greater encouragement for pupils to establish a frame of reference which will foster the development of meaningful, purposeful lives.

The present study has been an effort to gain psychological understanding of the personality characteristics of giving- versus receiving-oriented individuals.

Definition of Terms

Giving-Oriented. For the purpose of this study a giving-oriented individual is operationally defined as an American who is dedicated to a life of service to others in a foreign culture. This dedication has been made evident through attendance at an intensive language and cultural orientation program. Giving-oriented and serving-oriented are herein used synonymously.

Receiving-Oriented. A receiving-oriented individual is operationally defined as a "hard-core," or long-term welfare recipient.

Hypotheses

The general hypotheses on which this study was based were: that people who dedicate their lives in service to others are different and that this difference is psychologically measurable; that a measuring scale can be developed and utilized to replicate the original findings and that the scale will differentiate between giving-oriented and receiving-oriented individuals; and that the scale will, in fact, measure an independent personality trait. For statistical purposes the following null hypotheses will be tested.

1. No significant measurable personality difference exists between the standardization control sample of females and a serving-oriented experimental sample of females as measured by item responses of the MMPI.
2. No significant measurable personality difference exists between the standardization control sample of males and a serving-oriented experimental sample of males as measured by item responses of the MMPI.
3. No significant measurable personality differentiation exists between the experimental sample of females, a replication sample of females, a contrastive sample of white female welfare

recipients, a sample of female welfare workers, and a sample of female nurses, as measured by an experimental scale to be developed as a result of testing the first two hypotheses.

4. No independent personality characteristic will be identifiable by the newly developed scale.

Procedures

By testing subjects from a sample of 54 females and 50 males, who were operationally defined as being giving-oriented, an experimental psychological scale was developed through analysis of the Minnesota Multiphasic Personality Inventory (MMPI) (Hathaway and McKinley 1943) item pool. This analysis was performed separately for males and females. Items which demonstrated discriminatory power for both sexes were combined to form an experimental scale. Four additional samples of females were then compared with the original giving-oriented sample of females: a different sample of giving-oriented individuals, for replication purposes; a sample, operationally defined as being receiving-oriented, for contrastive purposes; and two samples for comparison purposes.

The means of the five samples on the Experimental Scale were compared to test for significant differences. The Experimental Scale was then analyzed with the thirteen standard MMPI scales and with those of the Sixteen

Personality Factor Questionnaire (16 PF) (Cattell and Eber 1962) in order to determine its unique characteristics.

Assumptions

A principal assumption made in this investigation was that an experimental personality scale identifying giving-oriented individuals could be developed by item analyses of the MMPI results of an experimental sample of giving-oriented individuals. Secondly, it was assumed that the results based on the experimental sample could be replicated with a separate sample of giving-oriented individuals, and that the results of a sample of receiving-oriented individuals would demonstrate a significant contrast. No assumptions were made concerning the giving-orientedness of nurses and social workers.

Finally, it was assumed that meaningful differences between groups could be studied by means of this experimental scale and that individuals would be distinguishable based on this personality characteristic.

Limitations

It is possible that an experimental scale which would identify giving-oriented individuals might also measure a construct other than giving-orientedness. A personality scale composed of items which differentiated between a giving-oriented sample and the standardization

sample of the MMPI might reflect differences due to other factors as well; for example, differences due to education or environmental background.

Summary

Chapter One discussed the problem which stimulated this study, and indicated its importance. Two important terms were defined, the hypotheses were presented, and the assumptions and limitations were specified.

The MMPI and the 16 PF were the instruments employed in this investigation which was an effort to gain psychological understanding of the personality characteristics of giving- versus receiving-oriented individuals.

CHAPTER 2

RELATED LITERATURE

Chapter Two presents a review of literature pertinent to this study.

Introduction

In this chapter the background, importance of the problem, and the scope of volunteerism have been reviewed, followed by citations from the literature relative to giving-oriented and receiving-oriented individuals, and nurses and social workers. Some studies of interest have utilized both the MMPI and 16 PF instruments; these and other research relative to the instrumentation have been reported.

Background of the Problem

Moral and ethical value systems have been the focal point of major schools of psychological thought during the past half century. The Freudian School has probably had the greatest impact on our society. The "dynamics" of neurosis, as conceived by Freud, present a "hypertrophied" superego, or conscience, which lays siege to the ego and takes it captive. Then the superego forces the ego to reject the claims of the id for any expression or

satisfaction of the id's "instinctual demands." The result is a dissociation between the ego and the id -- and "repression" is said to be in force. Neurosis consists of the "unconscious danger" that the forces of the id will succeed in overcoming the dissociation with the ego; and a constant, devitalizing expenditure of energy by the ego is necessary to keep up its "defenses" (Freud 1950). In other words, the neurotic has a guilt complex because he (id) wants to do something but he (ego) is refrained from the act by conscience (superego). The therapy then consists of doing the act as desired by the id.

On the basis of later research (Swenson 1962; Wahl 1954) Mowrer (1962, p. 12) wrote,

> It may now be taken for granted that psychoneurotic individuals suffer from <u>real</u> guilt which results from their having committed socially rehensible acts, rather than from guilt <u>feelings</u> which arise from the mere wish to do certain things... This revised perception of the situation obviously makes neurotic individuals more responsible for both the causation and correction of their troubles than does the view that, for reasons beyond their control, they are unduly scrupulous and inhibited.

Psychoanalysis has spoken of the pleasure principle which Frankl (1966) has called "the will-to-pleasure." But Frankl's focus has been that man lives in somatic, mental, and spiritual dimensions and the spiritual cannot be ignored for it is what makes us human.

> Where do we hear of that which most deeply inspires man; where is the innate desire to give as much meaning as possible to one's life, to actualize as many values as possible -- what I should like to call the will-to-meaning? This will-to-meaning is the most human phenomenon of all (Frankl 1966, p. x).

To pursue the "pleasure principle" is to be utterly self-pre-occupied, but purposeful living is outward directed. John W. Gardner (1963, pp. 96-97) made the point:

> The young person today would have a far easier time understanding the role of commitment in his life if he were not misled by the juvenile interpretation of the 'pursuit of happiness' that is widely held today. It is not unduly harsh to say that the contemporary idea of happiness cannot possibly be taken seriously by anyone whose intellectual or moral development has progressed beyond that of a three-week puppy...
>
> The plain truth is that man is not capable of achieving the vegetative state implied in the current conception of happiness. Despite almost universal belief to the contrary, gratification, ease, comfort, diversion and a state of having achieved all one's goals do not constitute happiness for man... They (the comforts and pleasure of daily living) are not enough...
>
> So we are coming to a conception of happiness that differs fundamentally from the storybook version. The storybook conception tells of desires fulfilled; the truer version involves striving toward meaningful goals - goals that relate the individual to a larger context of purposes.

Orientation to a "larger context of purposes" is not done at the expense of the self. On the contrary, the needs of the ego are paradoxically met when the focus is beyond the self. A meaningful relationship between the

self and values beyond the self are then effected. Murray (1958, pp. 43-44) said,

> Individuality is something to be built for the sake of something else. It is a structure of potential energies for expenditure in the service of an idea, a cultural endeavor, the betterment of man, an emergent value... An individual self is made only to be lost -- that is, only to pledge itself to some enterprise that is in league with a good future; and thereby find itself once more.

In exploring these relationships Paul Tillich (1952) pointed out that the seemingly contradictory requirements of self-affirmation and commitments beyond the self are most nearly resolved when man sees himself as reflecting a larger harmony, as a bearer of the creative process of the universe, as a microcosmic participant in the creative process of the macrocosm.

Gardner (1963, Chapter 10) devoted an entire chapter to "Commitment and Meaning" in his book, Self-Renewal. He wrote,

> It would be wrong to leave the impression that man is a selfless creature who only wishes to place himself at the service of some higher ideal. Having rejected the oversimplified view of man's nature as wholly materialistic and selfish, we must not fall into the opposite error. Man is a complex and contradictory being, egocentric but inescapably involved with his fellow man, selfish but capable of superb selflessness. He is preoccupied with his own needs, yet finds no meaning in his life unless he relates himself to something more comprehensive than those needs (p. 99).
>
> ...each kind of meaning implies a relationship between the person and some larger system of ideas or values, a relationship involving

> obligations as well as rewards. In the individual life, meaning, purpose and commitment are inseparable. When a man succeeds in the search for identity he has found the answer not only to the question "Who am I?" but to a lot of other questions too: "What must I live up to? What are my obligations? To what must I commit myself?" (p. 103).

Gardner and others have recognized as the task of our society the need to enable or encourage the individual to be a morally responsible being with meaningful relationships in "a larger context of purposes." In delivering the commencement address at St. Louis University, May 31, 1969, Father Hesburgh, president of Notre Dame, offered a proposal prescribed to relate students to this larger context of purposes. It was a proposal "for universal national service to enlist the idealism and energies of youth."

> Too many students in higher education today are lost and aimless and confused. They have been on a highly competitive educational treadmill for as long as they can remember. They do not really know themselves, their lives lack real meaning, and they resort in frustration to myriad forms of escapism and often useless activism. As the good Lord said, we have to lose our lives to find them and ourselves. The whole educational endeavor, indeed our whole country and its quality of life, would be enriched if students were free, at any appropriate time, to take a break and commit themselves to the service of others in need -- in any way that would fit their student talents and interests. The time of service would allow them to find themselves with all their strengths and weaknesses, to reconsider the direction of their lives and education, to understand more deeply the complicated social problems that surround us and

> the very real difficulty of improving the social structures in the interest of justice. The period of service would also teach them that there are no instant answers to the agonies of our times, but that personal commitment, earned competence, and real service are at the beginning and at the heart of all social reconstruction. I do not say that all young people are thirsting for justice and anxious to work for a better world. Many are, however, and they are vastly more numerous than the few that seek the destruction of the university and society. It is in the interest of these concerned students that I suggest that we need a new and imaginative national program that will give our young people a legitimate outlet for their deep concerns, a means to take their idealism seriously, an opportunity to practice generosity in good causes, and meaningful participation in the society that they do want to improve -- and to be taken at their word, seriously, in all of these protestations that we are hearing.

Hesburgh's specific proposal was to extend federal assistance to students through loans for education. Then

> For those so educated by any form of federal assistance, require a minimum year of national service. I am not suggesting here an enormous new agency or boondoggle, but a simple plan. Allow the student to pick the time, the place, and the condition of his service to others, here or abroad. Allow the widest interpretation of service to others needing help. Allow it in existing government programs, such as the Peace Corps or VISTA, in secular or religious groups, formally or informally organized here or abroad, in the inner city of Appalachia, or in the university itself. All that would be required is that the student have approved by his academic dean the program of service proposed. The government need only record the name of the student, his supervisor on the program, his dean's approval, and, ultimately, a pass or fail mark on his efforts by his program supervisor.

> Depending on the length and success of this service, the government could then cancel a portion of the student's loan (Hesburgh 1969, pp. 29-31).

The Scope of Organized Volunteerism

In the United States, volunteers have been activated through federal, private, and student efforts.

> Volunteer work has always been a tradition in America. The new aspect of this work is that volunteers have become interested...because of increased awareness of the inequalities in educational opportunity. The job to be done is so great that the need for these people will continue for years (Janowitz 1965, p. 7).

During the last few years there has been a dramatic increase in volunteerism, along with an accompanying interest in the volunteer. The activities have been occasionally encouraged on a large scale, but more often, they have occurred at the community level. The amount of time spent in voluntary activity has varied from the full time work of a relatively few persons (usually for only two or three years) to the occasional volunteer who may have helped, for example, with an annual fund drive of some organization.

The literature has given an indication of the approximate numbers of people involved in voluntary programs and an idea of the scope of those programs.

Federal Volunteer Programs

In addition to the Peace Corps and VISTA, the entire anti-poverty program has given opportunity for many volunteers to become involved in community service. Shaffer (1969, p. 167) indicated that some five hundred and twenty thousand people are serving in the various programs.

> They include about one hundred and forty thousand in several tutorial programs, one hundred thirty thousand in community action, and one hundred twenty thousand in Head Start. VISTA volunteers are credited with having attracted forty thousand part-time helpers to their projects. Some six thousand scientists, engineers, business managers and educators from VITA (Volunteers for International Technical Assistance) offer free consultant service to anti-poverty enterprises. Seven advisory councils with one hundred and seventy one volunteer members provide channels of contact between the Office of Economic Opportunity in Washington and leading national organizations which constitute major sources of volunteer manpower.

The importance of voluntary work throughout the poverty program has been recognized and has led to the recent formation in OEO of a committee on volunteer activities which is involved in a campaign to encourage more persons to volunteer. This committee was formally constituted as an operational unit of OEO in January 1969.

Shortly after taking office, President Richard M. Nixon created by executive order a Council for Urban Affairs. One of the three primary functions of this council has been to provide the most effective role possible for voluntary organizations in dealing with urban concerns.

George Romney was named chairman of the council's Subcommittee on Voluntary Action.

Private Agencies

Large numbers of community agencies are associated with the United Community Funds and Councils of America. The largest of the voluntary organizations with two million three hundred thousand volunteers is the American Red Cross. The American Heart Association is an example of one of the many voluntary organizations crusading against specific ailments, which utilizes the services of the volunteers. The General Federation of Women's Clubs is made up of club women who are dedicated free workers for good causes. Many other volunteers serve through Boy Scouts, Girl Scouts, and the Big Brothers Service, just to mention a few.

Missionary agencies supply the largest force of overseas volunteers from North America. Over 35,000 were numbered in 1968 (Missionary Research Library). Forty seven hundred of these were first year personnel. There are four major associations of missionary agencies with over two hundred member agencies, plus over one hundred agencies which are not affiliated with associations. The major associations are the National Council of Churches, the Evangelical Foreign Mission Association, the Interdenominational Foreign Mission Association, and the Canadian

Council of Churches. The functions of missionaries vary a great deal; however, responsibilities usually reflect the outstanding needs of the geographical field of service and the objectives of the sending agency. These include work in medicine, education, agriculture, and evangelization. Candidates of these organizations constituted the majority of the student body in the schools which provided the experimental samples and the replication sample for the present study.

Student Volunteers

Another type of voluntary social action has now begun to make its impact in the United States through students concerned about the ills of American society.

"Voluntary programs of service are booming on campuses from coast to coast" ("Another Type of Student Activism," 1969, p. 32). Voluntary tutoring programs involved only about five thousand students a few years ago, but now more than two hundred and fifty thousand serve five to ten hours a week, paying their own expenses and conducting drives to raise money when necessary. Thousands more have given other kinds of free services. US News and World Report ("Another Type of Student Activism," 1969) estimated that more than one thousand volunteer action programs are in operation within the U.S.

Life (April 28, 1967) referred to this student activism as "The Search for Purpose." An example of these programs is the Revitalization Corps which was established in Hartford, Connecticut and is now also in New York City. The aims have been "...only incidentally to help those in need... (the) main goal is to involve different kinds of people, to get them in touch and in sympathy with each other" ("The Search for Purpose," 1967, p. 73).

Characteristics of the Samples According to the Literature

Two samples used in the present study were operationally defined as giving-oriented and one as receiving-oriented. In addition, samples of nurses and social workers were included for comparison purposes. This section reviews the personality characteristics of these various samples.

The Giving-Oriented Individual

Why consider service to our fellow-man? Perhaps it was best summed up in the words of a poem entitled "The Bridge Builder" by Will Allen Dromgoole (1968),

> An old man traveling a long highway
> Came at the evening cold and gray,
> To a chasm vast and deep and wide,
> Through which was flowing a sullen tide,
> The old man crossed in the twilight dim,
> The sullen stream held no fears for him;
> But he turned when safe on the other side,
> And builded a bridge to span the tide.

"Old Man," cried a fellow-pilgrim near,
"You're wasting your time in building here.
Your journey will end with the closing day;
You never again will pass this way.
You have crossed the chasm deep and wide,
Why build you this bridge at even-tide?"
The builder lifted his old gray head;
"Good friend, in this path I have come," he said,
"There followeth after me today
A youth whose feet must pass this way.
This stream which has been naught to me,
To that fair-haired youth may a pitfall be;
He, too, must cross in the twilight dim--
Good friend, I am building this bridge for him."

Who is the person who builds bridges for others? His personality characteristics have apparently not been explored extensively.

Personality and interest profiles of Peace Corps volunteers were analyzed in a study by Guthrie and McKendry (1963). The MMPI, the Strong Vocational Interest Blank (SVIB) and a 100 item Q sort concerning reasons for joining the Peace Corps were administered to a sample of 331 (168 males, 163 females) Peace Corps Volunteers. Each of the subjects of the study had been selected for service in the Philippines as aids to teachers in rural elementary schools, helping with English as a second language and with beginning science instruction.

From the MMPI profiles the typical Volunteer used in their study was judged to be essentially optimistic with a relative absence of anxiety symptoms. Elevated K scores were interpreted as indicating a strong motivation to make a favorable impression. MMPI T scores of this

study and of other studies reported in this chapter are reported in Appendix A.

In the interpretation of SVIB scores, Guthrie and McKendry found that 79.5 percent of their female Peace Corps sample scored A and B+ on the social worker scale. They noted that the volunteers had strong social service motivations and a profound concern for others' welfare yet only 6 of the 331 in the sample had given any indication of social work as a career. It was inferred that Peace Corps activity as seen by the volunteer is, for many, an activity more congenial to their interest pattern and that these interests would not necessarily be satisfied in a social worker career.

The analysis showed a high incidence of social service motives and aesthetic interests. MMPI patterns suggested a lower than average incidence of anxiety symptoms with less than 2 percent atypical profiles. They found that motives for joining the Peace Corps included educational, political, and altruistic. Many of the males were vocationally indecisive and found that Peace Corps experience offered an opportunity to express aspects of their interests while giving time to make a career choice. The women most commonly reported that the Peace Corps was an opportunity to do something significant: an opportunity which was not otherwise open to them. With both men

and women, "service motives, variously expressed, constituted a central theme" (p. 264). Vocational choice may be difficult because "many volunteers presented patterns of interest for which only a limited number of satisfying career opportunities exist in our society, since many social service occupations are accorded relatively lower status" (p. 261).

At the time of their study (1963) Guthrie and McKendry did not feel that sufficient research had been completed to enable them to determine the degree to which performance overseas was a function of long-standing personality and attitude variables.

Research by Dicken (1969) included the use of the MMPI in an effort to predict the success of Peace Corps community development workers. His study investigated the validity of a comprehensive assessment program in predicting the success of 55 volunteers who served in Peru. He found that "the most valid predictors were peer ratings, life history, certain training grades, and ratings by a selection board. Some psychometric measures of personality and cognative style had modest validity, but intellective measures had almost none" (p. 597). The MMPI standard scales and the Barron Ego Strength (Es) scale (Barron 1953) were scored, and the profiles were rated by a clinician in order to predict success. The correlation

with performance criteria was .14 for the MMPI evaluation and .32 for the Es scale.

Mischel (1965) compared success ratings of 35 Peace Corps Volunteer teachers with psychological assessments obtained while the volunteers trained to go overseas. He found that the self-report measure of the MMPI Barron Es scale correlated significantly (.34) with the criterion, but other predictors did not. He concluded that his results supported the usefulness of simple self-report devices such as a personality inventory, and that they pointed to the limitations of "global" assessment procedures.

Although the studies by Dicken and Mischel did not purport to answer questions concerning the personality characteristics of volunteers, they did indicate that Barron's Es scale correlated significantly with success criterion. Apparently the standard MMPI scales could not accurately discriminate between successful and non-successful volunteers; however, the significant findings imply that the Ego Strength scale may be useful for identifying a personality characteristic common to volunteers. The relatively low coefficients of correlation (.32 and .34) would, however, indicate that the personality characteristics of these giving-oriented individuals were only partially identified by the Es scale.

The Receiving-Oriented Individual

In studying the personality characteristics of a sample of 31 welfare clients by means of analysis of interviews, Lichtenburg and Pollock (1967, p. 170) theoretically formulated a "special sense of responsibility" as being a distinguishing characteristic. "One definition of the word 'responsible' used chiefly in the United States concerns being answerable as the primary cause, motive, or agent -- responsible for something."

> The actions of these people almost always reveal some striving to be the primary cause of the events which occur in their lives; in their encounters with others they try to control the course and outcome. In this respect they move in the direction and give the impression of assuming responsibility and arousing expectations in others that they will fulfill obligations incurred. However, they do not become fully responsible for what is taking place. At the same time that they try to shape the event, they deny in word or deed that they themselves exert significant influence on the event. In short, they evade being answerable to their behavior, to themselves or to others, thereby frustrating the expectations they arouse.
>
> Ordinarily in human relations it is assumed that one who is the primary cause or agent is answerable for his actions. An individual usually allows another to act as if his motives were dominant or take precedence only on the condition that he accept accountability -- an accountability that ensures recognition of the rights of both persons involved in the transaction. By attaching accountability to the authorization of primary cause, individuals act to assure equity in personal relationships.
>
> In so far as a person separates these two aspects of responsibility within his relationships, he creates a contradictory situation (p. 170).

Lichtenburg and Pollock identified numerous situations in which welfare clients were striving to be the primary cause and at the same time evading being answerable or responsible for the event. Sometimes the client would avoid entry into an event in which some other person had started the course of action.

They found that the client would enter into a relationship in which he was a recipient under the contingencies that he might initiate the event, determine its limits, and subsequently remain passive. He is then in a dilemma because he

> ...needs or wants something which can only be supplied by another, but at the same time does not entrust the other with the position of primary agent (the giver) in relation to himself as a receiver. The conditions he sets are his attempt to achieve primacy in a situation in which this is clearly impossible. He is interested only in primacy and tries to separate it from the accountability which he leaves with the other (p. 171).

On other occasions clients were involved in events in which they were not the primary agent. In such a case they would try to change the situation by preventing the encounter from developing spontaneously to a conclusion. They would intervene by postponing the outcome of the event to a future time when the conditions might seem more favorable to their assertion of primacy (Lichtenburg and Pollock 1967).

Griswold, Wiltse and Roberts (1966) administered the MMPI to samples of forty white and forty black female welfare recipients to examine the relationship between psychological factors and illegitimacy. The hypothesis tested was that the mothers with multiple illegitimacies would obtain mean scores indicating more serious personality disturbance than mothers with only one illegitimacy. The hypothesis was not supported for the samples of white women; however, significant differences did occur on the F, Pa and Pt scales for the samples of negro women. The mean T scores for the white sample are reported in Appendix A.

No other studies were found which focused on the personality characteristics of welfare recipients.

Nurses and Social Workers

Samples of nurses and social workers were included in the present study as comparison groups. No predictions were made concerning their giving- or receiving-orientedness.

The 16 PF personality profile of female nurses was established by Davidson (Cattell and Eber 1964, p. 26) using a sample of 27 subjects. The typical profile, on this small sample reported in T scores, was: A 48, B 55, C 56, E 52, F 46, G 42, H 54, I 56, L 45, M 48, N 44, O 42, Q1 44, Q2 48, Q3 56, Q4 50.

The MMPI has been used with various samples of student nurses in attempts to predict academic performance. Beaver (1953) did not report exact results, but stated that she found the mean scores on all MMPI scales to be nearly identical when comparing a group of students who failed with a group that graduated. Lough (1947) came to the conclusion that the MMPI was not particularly helpful in vocational guidance of college women, including nursing students. Weisgerber (1951) found three significant correlations between clinical scale scores and various ratings of personality. He suggested that the MMPI could not be used safely for predicting academic success of nursing students without further research. He found that his group of students obtained appreciably higher means on some of the scales than the MMPI normative population. Weisgerber, on the basis of this study, was of the opinion that the standardization MMPI norms were not adequate for nurses.

The "normal" MMPI personality profile of female student nurses was established by Weisgerber in 1954, by testing a sample of 168 female students in a three-year curriculum in two hospitals affiliated with Loyola of Chicago. Their K-corrected mean T scores are reported in Appendix A.

A factorial study of the MMPI, using a sample of 168 female students in health related professions (nursing, occupational therapy and physical therapy -- the groups were not separated for the analysis), was performed by Anderson, Davis and Wolking (1966). The first factor they isolated was determined by the D, Si, Pt and Pa scales. These had loadings of .81, .81, .71 and .58 respectively. Women with high loadings on this factor were described as shy, sensitive, sentimental, with interests centered on home and family, and likely to be insecure, self-conscious and indecisive when under stress. On the second factor the major loadings were Sc .63, Ma .62, and Pd .58. Women with this profile were described as extroverted, socially assertive, independent, with a tendency toward unsettled personal identification and philosophy, and with a tendency to be confused, restless, verbal and resistant to authority relationships when under stress.

The personality profile of social workers as measured by an objective personality instrument has apparently not been reported. Spilken, Jacob, Muller and Knitzer (1969) studied, by means of a questionnaire, samples of social workers (N=20) and students of social work (N=58) to determine the relative value which they professed to have for each of nine personal characteristics. The nine characteristics in order of importance, as

expressed by social workers were: empathy, interest, respect, dependability, sincerity, warmth, objectivity, sureness, and directiveness. The order of the characteristics seen most desirable by the students of social work were: empathy, interest, sincerity, respect, dependability, warmth, objectivity, sureness and directiveness. These were values which were deemed to be important by the social workers, though not necessarily actual characteristics which they themselves possessed.

Instrumentation

This section briefly reviews MMPI and 16 PF research, then focuses on comparative studies of the two instruments.

MMPI Research

The MMPI is the most comprehensively documented psychological instrument ever developed. Over three hundred experimental scales were drawn from the 566 items before 1960 (Dahlstrom and Welsh 1960).

Welsh (1956) reviewed a number of factor analytic studies of the MMPI. He concluded that in almost all the studies there was essential agreement as to the loading of the first two factors, although the names and interpretations assigned to those factors have varied. One factor (usually the first) has shown high loadings on Pt and Sc

with negative loading on K. A second factor has shown high loadings on the Hy and D scales with negative loadings appearing on the Ma scale. The similarity of loadings on these two factors has appeared despite the varying populations employed. Welsh reported practically no agreement as to the third and fourth factor patterns.

16 PF Research

The 16 PF has steadily gained the confidence of psychometrists since its release in 1956. Levonian (1961), however, performed an extensive item analysis by computing both inter-factor and inter-item correlations and concluded that "the extreme heterogeneity of items demonstrated in this study would seem to warrant a critical appraisal of the 16 PF Questionnaire." Levonian used a sample of 252 students enrolled in introductory psychology which he described as being "not unlike that used in the development of the 16 PF Questionnaire" (p. 595). He reported,

> (1) 40 percent of the inter-factor correlations are significant (all tests of significance in this study were referred to the .01 level, two-tail); (2) of the 1,612 significant inter-item correlations, only 183 are intra-factor correlations, and 10 of these are in a direction opposite from that intended by the test designers; (3) nearly 25 percent of all intra-factor correlations are in a direction opposite from that intended by the test designers; (4) 30 percent of the items have no significant intra-factor correlations; and (5) the average item correlates significantly with fewer than one other

> item in its factor but with nearly eight items outside its factor (p. 596).

The reason for this conflict seems to be that the items were assigned to scales in order to achieve the highest possible factor loadings, rather than to develop homogeneous factors. Cattell stated that since "most good items turn out to be factorially complex, it is necessary to have a lot of such suppressor action if one is to get a sufficiency of items well loaded on a given factor" (Levonian 1961, p. 595, fn 3).

MMPI and 16 PF Comparative Research

A number of studies have employed both the MMPI and the 16 PF instruments. The 16 PF has purported to measure the main dimensions of the normal personality while the MMPI was designed to identify selected abnormal characteristics. "Abnormality can be either a statistically deviant score on a normal factor -- or, alternatively, a score on some factor the very essence of which is demonstrable only in pathological manifestations" (Cattell and Bolton 1969, p. 18).

Tamkin and Sonkin (1969) used both tests to determine if any of the standard scales of either instrument would differentiate between psychotic and neurotic subjects. They found that three MMPI scales (K, Hs, Ma) and one 16 PF scale (O) significantly differentiated between the two categories.

Karson and Pool (1957) tested a sample of 71 Air Force officers using a battery which included both the 16 PF and the MMPI. They concluded that there is considerable overlap between the two tests, but that the 16 PF reflects some normal personality dimensions not tapped by the MMPI.

Eber (1966) obtained a multiple correlation (R) of .70 in predicting from the 16 PF the psychotic nonpsychotic decision on a schizophrenic group as given by the usual judgments on MMPI data.

Cattell and Bolton (1969) found that the schizophrenia, psychasthenia, and social introversion MMPI scales can be predicted with appreciable efficiency from the 16 PF. They identified correlations of .72 between Sc and Q3; .74 between Pt and Q3; and Si had a correlation of .43 with Q2, and -.44 with the 16 PF F scale.

LaForge (1962) performed a correlational study between the MMPI and 16 PF instruments. His sample was made up of 178 psychology students. The cross-test correlates of the MMPI and 16 PF variables are given in Table I.

TABLE I

CROSS-TEST CORRELATES OF THE MMPI AND 16 PF VARIABLES

Variable	.30 to .39	.40 to .49	above .50
L	-Q4, -O, +C	+Q3	
F	-C, -H, +Q4, +L	+O	
K	+H, +A, -Q2, +C, +Q3		-O, -Q4, -L
D	+Q4, -F	+L, -H, +O	
Pd	+O		
Pa	+O		
Pt	-H, -Q3, -C	+L, +Q4	+O
Sc	+L, -G, -C, -Q3, +Q4	+O	
Ma		+E, +F	
Si	-A, +M	+O, +Q2, +Q4, -F	-H, +L

The MMPI and 16 PF factor domains were compared by Cattell and Bolton (1969) in a comprehensive factor-analytic study to evaluate common dimensionality of the inherent item material of both instruments. The MMPI scales were not used but, instead, items were separated into 45 parcels, each of which was mutually exclusive and exhaustive thus preventing overlap. The analysis of these parcels and the 16 PF scales (by design mutually exclusive and exhaustive) yielded 21 factors of which 13 were identifiable as 16 PF and 4 as MMPI factors. Three of these MMPI factors were described as "meaningful pathological factors." They were called Hypochondriasis, Psychopathic deviate, and Psychasthenia. One additional pathological factor was found in the 16 PF -- the Q3 scale which can be

considered to be a "general functional psychosis" factor. Recently, Cattell has been developing a new 16 PF Clinical Analysis Questionnaire intended to provide scales for these pathological domains (Cattell and Bolton 1969).

O'Dell and Karson (1969) compared the traditional 16 PF and MMPI scales through factor analysis. They compared four analyses: orthogonal varimax rotations with and without K-corrections, and oblique rotations with and without K. They reported that each of the four rotation procedures produced essentially the same factors. The first factor was designated as an MMPI pathology factor with major loadings on the Sc, Pt, Pd and Hs scales. The second factor had high loadings on Q4, O, Lie, K and Q3, and was called anxiety versus dynamic integration. The third factor loaded on Ma, D and H, and seemed to be a combination of hypomania and depression.

Summary

In Chapter Two the literature was reviewed, giving a background for the present study. The extent of organized volunteerism was presented and literature related to the characteristics of giving- and receiving-oriented individuals, nurses and social workers was reported. Limited current research has been available concerning the personality characteristics of nurses and welfare clients; even less has been available for social workers.

The chapter concluded with reviews pertinent to the use of the MMPI and 16 PF instruments.

The MMPI item pool has been a valuable source for researchers who have developed hundreds of scales using its items. However, no psychological instrument has yet been developed to identify and measure the psychological characteristics of the giving- or serving-oriented individual. It is the purpose of the present study to fill that need.

CHAPTER 3

METHODOLOGY

Chapter Three discusses the procedures employed in testing the hypotheses of this study.

Introduction

First, the nature of the samples has been presented, followed by a description of the instruments. Then the procedures for testing Hypotheses One and Two have been discussed, followed by an analysis of the composition of the Experimental Scale. Finally, the procedures for testing Hypothesis Three and Hypothesis Four, using the Experimental Scale have been developed.

Samples

To test the first two hypotheses MMPI data secured from testing the 1969 student body of the Spanish Language School, Guadalajara, Jalisco, Mexico, was analyzed. The total N consisted of 54 females and 50 males. This experimental sample was made up entirely of American students, 20 through 35 years old, who were engaged in a year-long program of Spanish language learning in preparation for a life-time of service in Latin America. The students were professionally oriented toward missionary, medical, or

educational work. Their dedication to the "service-oriented" objective was manifested by their presence in the year-long language and cultural adaptation training program in Guadalajara.

The first hypothesis was tested by comparing the total experimental sample of females with the standardization control sample of females. The sample for the standardization consisted of a group of adult females, N=315 (Dahlstrom and Welsh 1960).

To test the second hypothesis the experimental sample of males was compared with the male standardization control sample of the MMPI. This sample had an N of 226 (Dahlstrom and Welsh 1960).

To test the third hypothesis the MMPI was administered to four additional samples. The replication sample, N=34, was made up of individuals who had service-oriented objectives similar to the original group. This sample consisted of the female student body at the Toronto Institute of Linguistics in June 1969. These adult students, ranging in age from 22 to 34, were taking an intensive course of linguistic principles in preparation for foreign language learning.

The contrastive sample, N=25, was a group of white "hard-core" welfare recipients, who were on the welfare

roles of the Denver Department of Welfare. The individuals ranged in age from 19 to 45.

Two additional samples were included for comparison purposes. One was a group of thirty female case workers in the Denver Department of Welfare, most of whom ranged in age from 22 to 37 (two were in their forties). All were engaged in rendering direct services to welfare clients and carried service caseloads. Twenty-four were assigned to the Family Service Division and dealt primarily with Aid-to-Dependent Children cases. Six were assigned to the Aged and Medical Division and worked primarily with aged persons.

The other comparison sample consisted of twenty-eight female nurses at the Brackenridge Hospital in Austin, Texas. All had had less than five years nursing experience. Ten had attended three-year training programs and eighteen had been trained in a BA program at The University of Texas. Their ages ranged from 20 to 26.

Instrumentation

The MMPI and 16 PF comprehensive personality instruments were employed in this study.

The Minnesota Multiphasic Personality Inventory

The MMPI assesses personality characteristics on ten clinical scales and three validity scales. These

scales have been described in Appendix B. The standardization of the scales was performed using normative data "derived from a sample of about seven hundred individuals representing a cross section of the Minnesota population as obtained from visitors to the university hospitals" in contrast with over eight hundred carefully studied clinical cases. The scales were named according to the abnormal manifestation measured, but "they have all been shown to have meaning within the normal range" (Hathaway and McKinley 1951, p. 6).

The MMPI manual reported validity by stating that a high score on a scale had been found to predict positively the corresponding final clinical diagnosis or estimate in more than sixty percent of new psychiatric admissions.

Cottle (1950) reported the most complete reliability coefficients of stability for a normal population. Those coefficients for each scale have been shown in Table II.

That the inventory has earned the confidence of researchers has been attested to by the fact that at least two hundred thirteen scales have been developed and reported in the MMPI Handbook (Dahlstrom and Welsh 1960).

TABLE II

TEST-RETEST RELIABILITY COEFFICIENTS FOR THE MMPI

	Scale and Abbreviation	Normals (N=100)
L	Lie (L)	.46
F	Validity (F)	.75
K	Correction Factor (K)	.76
1	Hypochondriasis (Hs)	.81
2	Depression (D)	.66
3	Hysteria (Hy)	.72
4	Psychopathic Deviate (Pd)	.80
5	Masculinity-Femininity (Mf)	.91
6	Paranoia (Pa)	.56
7	Psychasthenia (Pt)	.90
8	Schizophrenia (Sc)	.86
9	Hypomania (Ma)	.76
0	Social Interaction (Si)	.93[a]

[a]Si -- not an original scale

The Sixteen Personality Factor Questionnaire

The 16 PF is a questionnaire, based on factor analysis, which measures 16 factors or traits of the respondent's personality. A brief description of these 16 Factors has been reported in Appendix B. Cattell and Eber (1964, p. 1) described the test as follows.

> The 16 PF is the psychologist's answer, in the questionnaire realm, to the demand for a test giving fullest information in the shortest time about most personality traits. It is not merely concerned with some narrow concept of neuroticism or "adjustment," or some special kind of ability, but sets out to cover planfully and precisely all the main dimensions along which people can differ, according to basic factor analytic research...

The 16 PF scales differ basically from those of the MMPI in that these scales are intended for use with normal populations. Neither a high score nor a low score is to be regarded as "in the deviant direction." On at least six scales a score toward either extreme is not usually regarded as morally or esthetically more desirable than a score toward the other (Cattell and Eber 1964). The "normal" personality lies at the midpoint between the two poles and is assumed to have achieved a balanced integration of the respective personality traits.

The 16 PF is published in equivalent forms A and B. Form A was used in the present study.

The mean concept validity for the A and B forms calculated from the known factor loadings of the items in

the original research and the reliability coefficients of internal consistency reported for the 16 PF scales have been given in Table III.

The table also contains split-half reliability coefficients (corrected to full length) obtained on a sample of four hundred fifty young adult males. Form A and Form B were both used in determining these coefficients.

Variables

In testing the first and second hypotheses, MMPI items were the variables analyzed. The variable for testing the third hypothesis was the Experimental Scale (Ex) developed through the item analyses.

The variables used to test the final hypothesis included the Ex Scale and all of the standard scales of both the 16 PF and MMPI, including the MMPI validity scales L, F, and K. The MMPI Hs, Pd, Pt, Sc, and Ma scales were used in non-K-corrected form. Since the mean T-score on the K scale was above 60 for two groups the use of non-K-corrected scales eliminated this as a source of spurious effect on the interrelationships among the personality scales.

TABLE III

RELIABILITY AND VALIDITY COEFFICIENTS FOR THE 16 PF[1]

N = 450

	Scale	Reliability	Validity
A	Schizothymia/Affectothymia	.90	.88
B	Scholastic Mental Capacity	.86	.80
C	Ego Strength	.93	.76
E	Submissiveness/Dominance	.91	.82
F	Desurgency/Surgency	.84	.91
G	Superego Strength	.85	.85
H	Threctia/Parmia	.83	.96
I	Harria/Premsia	.76	.84
L	Alaxia/Protension	.77	.89
M	Praxernia/Autia	.88	.74
N	Artlessness/Shrewdness	.79	.73
O	Untroubled Adequacy/ Guilt Proneness	.85	.91
Q1	Conservatism/Radicalism	.71	.74
Q2	Group Adherence/Self-Sufficiency	.79	.81
Q3	Self-Concept Integration	.76	.92
Q4	Ergic Tension	.88	.96

[1]Cattell and Eber 1964, p. 4.

Procedures for Testing Hypotheses Number One and Number Two

1. No significant measurable personality difference exists between the standardization control sample of females and a serving-oriented experimental sample of females as measured by item responses of the MMPI.
2. No significant measurable personality difference exists between the standardization control sample of males and a serving-oriented experimental sample of males as measured by item responses of the MMPI.

In order to test Hypotheses One and Two, the MMPI was administered to the total student body at the Spanish Language School in Guadalajara, Mexico. The total N consisted of 54 females and 50 males.

All experimental subjects were encouraged to answer all the questions. All female subjects answered every item. A total of six items were left unanswered in the male sample -- 2 of the 566 items by each of 3 male subjects.

The test results were punched out on data cards. A "1" was punched if the item was true, the position was left blank for a false response, and an "8" was punched for items left unanswered. Nine data cards were required for each subject. Of the 566 items, 63 were recorded on each of eight cards and the remaining 62 items were recorded on the ninth. With these cards the computer gave

a count of the number of true and the number of false responses to each item, and also the percentage that answered each item true and each item false. These results and the computer program have been presented in Appendices C and D.

Appendix E in An MMPI Handbook--A Guide to Use in Clinical Practice and Research (Dahlstrom and Welsh 1960) reported the percentage of the standardization sample which gave a true response to each item and the percentage which left each item blank. The percentage answering each item in a false direction could, therefore, quickly be calculated. Usually less than 2 or 3 percent left an item blank.

Before the first hypothesis could be tested, it was necessary to analyze each of the 566 items to determine the power of each to differentiate between the giving-oriented sample of females and the standardization sample of females. These items were analyzed by means of the chi square test of significance. A 2x2 matrix was used. The "frequency expected" squares were filled with the data from the female standardization sample and the "frequency observed" cells were filled with the percentage of the female experimental sample answering the items in a true or in a false direction. Even when the standardization sample reported a percentage for "no response" the 2x2 matrix was used because of the following rationale.

If the "no response" items totaled less than five percent the chi square limitation that "no cell can have an expected frequency of less than 5.0" (Popham 1967, p. 296) would have been violated. If the "no response" frequency-expected cell of a 2x3 matrix were filled with a number larger than 5.0 then a Type I error might be committed since the experimental sample left no items blank. This can be illustrated as follows:

	True	False	No Response
Frequency observed	50	50	0
Frequency expected	42	42	16

In this illustration as many answered in a true direction as in a false direction for both samples but sixteen percent of the standardization sample left the item blank. Substituting in the 2x3 chi square formula:

$$X^2 = \left(\sum \frac{(o-e)^2}{e}\right)\frac{N}{100}$$

$$X^2 = \left(\frac{(50-42)^2}{42} + \frac{(50-42)^2}{42} + \frac{(0-16)^2}{16}\right)\frac{54}{100}$$

$$X^2 = \left(\frac{64}{42} + \frac{64}{42} + 16\right)\frac{54}{100}$$

$$X^2 = 10.28$$

With two degrees of freedom a chi square of only 9.21 would be necessary for significance at the .01 level (two-tailed). In order to name only validly discriminating items to the experimental scale it was necessary to reject items which did not suggest a true or false preference, as in the above illustration.

For most items the percent of "no response" was added to either the true or the false expected frequency in order to avoid inflating a difference spread between the frequency expected and the frequency observed totals. An example will illustrate:

On item number 12 the female standardization sample totaled 45% true, 53% false, and 2% "no response". The experimental sample scored 54% true and 46% false. To assure that a Type I error was not committed, the 2% "no response" was added to the 45% true response. This assumes that if the 2% would have answered, they would have answered true. If the same 45, 53, 2 sequence were matched with, for example, a 40, 60 sequence instead of 54, 46 then the 2% would be added to the 53, again to avoid the chance of a Type I error, by closing the difference spread.

Most of the "no response" totals were very small and therefore probably not significant, but the above procedure ensured against selecting any item for the

experimental scale which was not in fact discriminating between the experimental and the control samples.

Each item was analyzed with the chi square formula:

$$X^2 = \left(\sum \frac{(|o-e|-5)^2}{e} \right) \frac{N}{100}$$

Not only was the Yates correction (Yates 1934) for continuity[1] used, but also a correction of the chi square was made for sample size, since percentages were used in the matrix. The female result was multiplied by .54 since the sample size was fifty four. These computations were performed on a programmable electronic calculator. With one degree of freedom a chi square value of 6.64 was necessary for significance at the .01 level (two-tailed).

To test Hypothesis One the results of these tests for item significance were compared against chance expectation by means of the chi square test of significance. Of the 566 items, one out of a hundred, or approximately

---

1. Recent studies (Veldman 1969, and Grizzle 1967) using computer techniques for Monte Carlo studies, have reported that the Yates Correction "produces a test that is so conservative as to be almost useless" (Grizzle 1967, p. 31). Since a conservative test for the inclusion of items assured a more discriminating experimental scale, the traditional correction was used, despite recent research.

6 items could be expected to be significant at the .01 level if chance factors alone were in operation. The chi square frequency expected cells were therefore filled with 6 and 560. With one degree of freedom a chi square value exceeding 6.64 was necessary in order to reject the null hypothesis.

The same procedures were followed to test the second hypothesis. The data used were of the males of the experimental sample and males of the standardization sample. The N of the experimental sample was 50 and the chi square values for the item analyses were, therefore, corrected by .50.

The Experimental Scale

Only the items which were shown to be significant when testing both Hypothesis One and Hypothesis Two were selected for the Experimental Scale used in testing the third and fourth hypotheses. These items were successful discriminators for both sexes and, therefore, judged to be free of sex bias.

To learn what the mean of the standardization control sample would have been on the Experimental Scale, Appendix E of the MMPI Handbook was consulted. The percentage answering each of the true discriminators in a true direction were accumulated along with the percentage answering each of the false items in a false direction.

This total divided by 100 indicates the score which would be attained by a typical individual of the standardization sample on the Experimental Scale.

Reliability

The reliability of the scale was determined by performing a split-half correlation and then estimating the reliability of the whole test by use of the Spearman-Brown prophecy formula (Garrett 1958, p. 339).

Validity

The establishment of a validity coefficient for the Experimental Scale was beyond the scope of this study. Content validity is not possible when items are selected by item analysis; concurrent validity would require a very large sample to be followed for many years; predictive validity normally correlates a prediction with a measure of performance; and construct validity is difficult and controversial because "the construct is not directly measurable" (Lord and Novick 1968, p. 278).

No attempt was made to arrive at a specific validity coefficient for the Experimental Scale, however the ability to differentiate between giving- and receiving-oriented samples (Hypothesis Three) gives an indication of the validity. This is not unlike the approach taken by the authors of the MMPI: "The chief criterion of excellence was the valid prediction of clinical cases against

the neuropsychiatric staff diagnosis, rather than statistical measures of reliability and validity" (Hathaway and McKinley 1951, p. 6).

Procedures for Testing Hypothesis Number Three

The third hypothesis was:

> No significant measurable personality differentiation exists between the experimental sample of females, a replication sample of females, a contrastive sample of female welfare recipients, a sample of female welfare workers, and a sample of female nurses, as measured by an experimental scale to be developed as a result of testing the first hypotheses.

Prior to testing the third hypothesis, the sample from the Spanish Language School (SLS) and the replication sample of the Toronto Institute of Linguistics (TIL) were compared to determine if they were, in fact, homogeneous. This was done by using the t model to test for mean differences between the two groups on the Experimental Scale. With sample sizes of 54 and 34, a t value exceeding 1.99 was necessary to reject the assumption at the .05 level. A similar comparison was made of the Nurse and Social Worker samples.

The testing of the third hypothesis was to provide a measure of the discrimination power of the Experimental Scale. To test this hypothesis, a key was made for the Experimental Scale, and the MMPI answer schedule of each subject in each of the five samples of females was scored.

To determine the significance of the differences between the means of the five samples, the single-classification analysis of variance model was employed (Veldman 1967). The five groups tested had Ns of 54, 34, 30, 28, and 25, for a total of 171 subjects. The degrees of freedom, therefore, were:

Between Groups = 4
Within Groups = 166
Total = 170

To reject the null hypothesis at the .05 level of significance with 4 and 166 degrees of freedom an F value equal to, or greater than, 2.43 was necessary. An F value of 3.44 or greater was necessary for significance at the .01 level (Popham 1967, p. 185).

Procedures for Testing Hypothesis Number Four

The fourth null hypothesis stated that no independent personality characteristic would be identifiable by the Experimental Scale. To test this hypothesis the thirty scales were analyzed: ten basic scales of the

Minnesota Multiphasic Personality Inventory (non-K-corrected), three MMPI validity scales, sixteen scales of the Sixteen Personality Factor Questionnaire, and the Experimental Scale. The following questions were posed:

1. Do any of the MMPI or 16 PF variables differentiate between the experimental samples?

2. To what extent do MMPI and 16 PF variables correlate with the Experimental Scale?

3. Is the Experimental Scale measuring an independent factor?

The procedures guiding the inquiry into each of the questions follow.

Question One: Do any of the MMPI or 16 PF variables differentiate between the experimental samples?

It would be reasonable to expect a unique personality profile for each of the four types of samples. To learn if any of the variables differentiated between the groups, the analysis of variance was computed on each of the twenty-nine variables using the procedure followed in testing Hypothesis Three.

Question Two: To what extent do MMPI and 16 PF variables correlate with the Experimental Scale?

To show the relationship of each MMPI and 16 PF personality variable with the Experimental Scale, the

correlation of the Experimental Scale with each was computed, and the level of significance was shown.

Question Three: Is the Experimental Scale measuring an independent factor?

The thirty variables were factor analyzed using the pooled total of all five groups (N=171), and also using the pooled total of the giving-oriented samples (N=84). Factor analyses were not made using the individual groups since sample size must exceed the number of variables in the computer program. The analyses were made at The University of Arizona Computer Center using the Biomedical computer program: BMD03M General Factor Analysis (Dixon 1964, pp. 169-175).

Only factors with eigenvalues greater than 1.00 were retained in order that "important independent aspects of the information" would be represented (Veldman 1967, p. 212). These were then rotated by the Varimax rotation technique (Kaiser 1958).

Summary

In Chapter Three the samples and instruments employed in this study were described followed by a discussion of the statistical methods used in Chapter Four. After completion of the procedures for testing the first two hypotheses, the techniques used in the development of

the Experimental Scale were presented, followed by procedures for testing the third and fourth hypotheses.

CHAPTER 4

RESULTS OF ANALYSIS

This chapter and Chapter Three have been organized similarly. The statistical testing of each section has followed the methodology described in the corresponding section of that chapter.

Testing Hypothesis Number One

The results from the standardization sample of females were compared with the results from the experimental sample of females by testing each of the 566 MMPI items using the chi square test to determine significance of differences. Significance beyond the .01 level was observed on 89 of the 566 items. The item numbers and direction of discrimination have been listed in Appendix E, Table 1.

To test Hypothesis One, these results were compared against chance factors by an additional chi square test. The cells of the chi square matrix were filled with the following frequencies:

	Significant items	Non-significant
Frequency Expected	6	560
Frequency Observed	89	477

Substituting in the 2x2 chi square formula:

$$X^2 = \sum \frac{(|o-e|-0.5)^2}{e}$$

$$X^2 = \frac{(|89-6|-0.5)^2}{6} + \frac{(|477-560|-0.5)^2}{560}$$

$$X^2 = \frac{6806.25}{6} + \frac{6806.25}{560}$$

$$X^2 = 1134.37 + 12.33$$

$$X^2 = 1146.70$$

The resulting chi square value was well beyond the 6.64 necessary for significance at the .01 level, with one degree of freedom. The first hypothesis was, therefore, rejected.

Testing Hypothesis Number Two

The same procedure was followed in order to test the second hypothesis. For the sample of males 99 of the items successfully discriminated, at the .01 level,

between the experimental sample and the corresponding standardization control sample. The item numbers and direction of discrimination have been listed in Appendix E, Table 2.

To test the second hypothesis, these results were compared against chance factors by a chi square test. The cells of the chi square matrix were filled with the following frequencies:

	Significant items	Non-significant
Frequency Expected	6	560
Frequency Observed	99	467

The resulting chi square value of 1441.32 was well beyond the 6.64 necessary for significance at the .01 level, with one degree of freedom. The second hypothesis was, therefore, also rejected.

The Experimental Scale

It was definitely demonstrated that certain MMPI items successfully discriminated between the two experimental samples and the corresponding standardization control samples. Of the 89 items which were significant for the female sample and the 99 items which were significant for the male sample, 63 items were common to both. In order that the Experimental Scale be free of sex bias,

only these sixty-three items were chosen. These item numbers and the direction of discrimination have been listed in Appendix E, Table 3. The items have been recorded in Appendix E, Table 4.

An approximation of the mean which would have been achieved by the standardization control sample on the Experimental Scale was determined by accumulating the percentage of that sample which answered each item of the scale in the discriminating direction. These accumulations have been presented in Appendix F. The accumulated percentages for the females totalled 2,867. For the males the total was 2,925. When divided by 100, these results indicated the approximate mean score which would have been attained by the standardization samples for these 63 items: 28.67 for females and 29.25 for males. Stated in another way, these accumulative percentages would indicate that a typical individual of the standardization sample would answer approximately 29 of the 63 items in the discriminating direction.

Reliability

All the samples were combined and the split-half reliability coefficient of the Experimental Scale was calculated using the basic product-moment formula (Popham 1967, p. 88) with a total N of 171, which yielded a coefficient of .832 which was the reliability for half the

test. The corrected reliability coefficient, using the Spearman-Brown prophesy formula for estimating test reliability from the two halves of a test, was .913.

Testing Hypothesis Number Three

The discriminatory power of the Experimental Scale was tested by comparing the five experimental samples of females. The homogeneity of the two giving-oriented samples was tested and demonstrated by a t test. The samples of social workers and nurses were also found to be homogeneous as measured by the Experimental Scale. The results of these t tests are shown in Table IV. The pooled variance t model (Popham 1967, p. 145) was employed for both of these comparisons.

TABLE IV

COMPARISON OF EXPERIMENTAL SAMPLE MEANS

Group	Number	Df	S.D.	Mean	t	Significance
Giving-Oriented Samples:						
SLS	54	86	4.89	51.41	.06	n.s.
TIL	34		4.09	51.47		
Comparison Samples:						
Nurses	28	56	6.70	39.71	.17	n.s.
Soc.W.	30		7.33	40.03		

The mean of the receiving-oriented sample, 29.00, fell slightly above the mean of 28.67 estimated for the females of the standardization sample. The variance of the standardization sample was not available, so a t test could not be performed, however observation would indicate that the means were not different. It was concluded then that the Experimental Scale is not bi-polar and does not differentiate receiving-oriented from the norm.

The distribution of the five groups on the Experimental Scale can be visualized by plotting the percentage of responses at each score by each group. They have been plotted in Table V.

Analysis of Variance

To test Hypothesis Three, a single-classification analysis of variance was calculated to test for differences between the means of the five experimental samples of females on the Experimental Scale. The means of each of the five groups and the results of the analysis of variance have been presented in Table VI. With 4 and 166 degrees of freedom an F value exceeding 3.44 was necessary to reject the hypothesis at the .01 level of significance (Popham 1967, p. 402). Complete distribution statistics of the Experimental Scale scores of each group have been shown in Appendix G.

TABLE V

PERCENTAGE OF RESPONSES ON THE EXPERIMENTAL SCALE

Score	SLS N=54	TIL N=34	Nurse N=28	SW N=30	WR N=25	Total N=171
16					4	*
17					8	1
19					4	*
20				3		*
21					8	1
22					8	1
23					8	1
24				3	4	1
25			4			*
26					4	*
27			4		4	1
29			4			*
30					4	*
31			7	3	4	2
33			4	3		1
34				3	4	1
35			4	7		2
36	2				4	1
37			7	3	4	2
38	4		4	3	8	3
39			7	13		3
40			4	13	12	5
41			7		4	2
42		3	7	7	4	3
43	4			10		3
44		3	18			3
45		3	4	3		2
46	2	3		7		2
47	2	6	7	3		3
48	9	9	4	3		6
49	4	9	7	3		5
50	2	6		3		2
51	15	3				5
52	11	6				5
53	11	12				6
54	6	9		3		4
55	13	15				7
56	7	6				3
57	6	6				3
58	2	3				1
59	2					*

* Less than 1 percent
Total of columns may vary from 100 percent due to rounding.

TABLE VI

ANALYSIS OF VARIANCE OF MEANS
ON THE EXPERIMENTAL SCALE

	Mean		Df.	Mean Sq[a]	F	Significance
SLS	51.41	Between	4	2865.61	74.14	.01
TIL	51.47	Within	166	38.65		
Nur.	39.71	Total	171			
SW	40.03					
WR	29.00					

a. The sum of squares can be obtained by multiplying the mean square by the corresponding degrees of freedom.

The level of significance indicated that the differences between the means of the samples could not be accounted for by chance factors. On the basis of these results the null hypothesis was not tenable and Hypothesis Three was rejected.

In summary, the Experimental Scale was successfully used to identify the replication sample of giving-oriented individuals as being homogeneous with the sample on which the scale was developed. It was also demonstrated that the Experimental Scale successfully differentiated between the receiving-oriented and the giving-oriented samples. The receiving-oriented sample was not demonstrated to be different from the standardization norm sample.

Testing Hypothesis Number Four

The fourth hypothesis was: No independent personality characteristic will be identifiable by the newly developed scale. For comparison purposes the MMPI scales and the scales of the 16 PF were scored for each of the five female samples. All raw scores have been reported in Appendix H. Three procedures were presented in Chapter Three guiding inquiry into the testing of this hypothesis by means of specific questions.

Question One: Do any of the MMPI or 16 PF variables differentiate between the experimental samples?

The testing of Hypothesis Three demonstrated that the Experimental Scale differentiated between the receiving- and giving-oriented samples. The question here posed is whether similar differentiation could be shown to exist between the samples, using the standard MMPI and 16 PF scales as criteria. The mean score of each sample for each criterion has been plotted in Figure 1. The figure is a composite of the MMPI (non-K-corrected) and 16 PF profiles. The mid-point on the graph represents a standard score of 50 as determined by the respective test normative samples. The mid-point and standard deviations of the non-K-corrected MMPI scales were determined from Appendix H, Table 3 of the MMPI Handbook (Dahlstrom and Welsh 1960, p. 439).

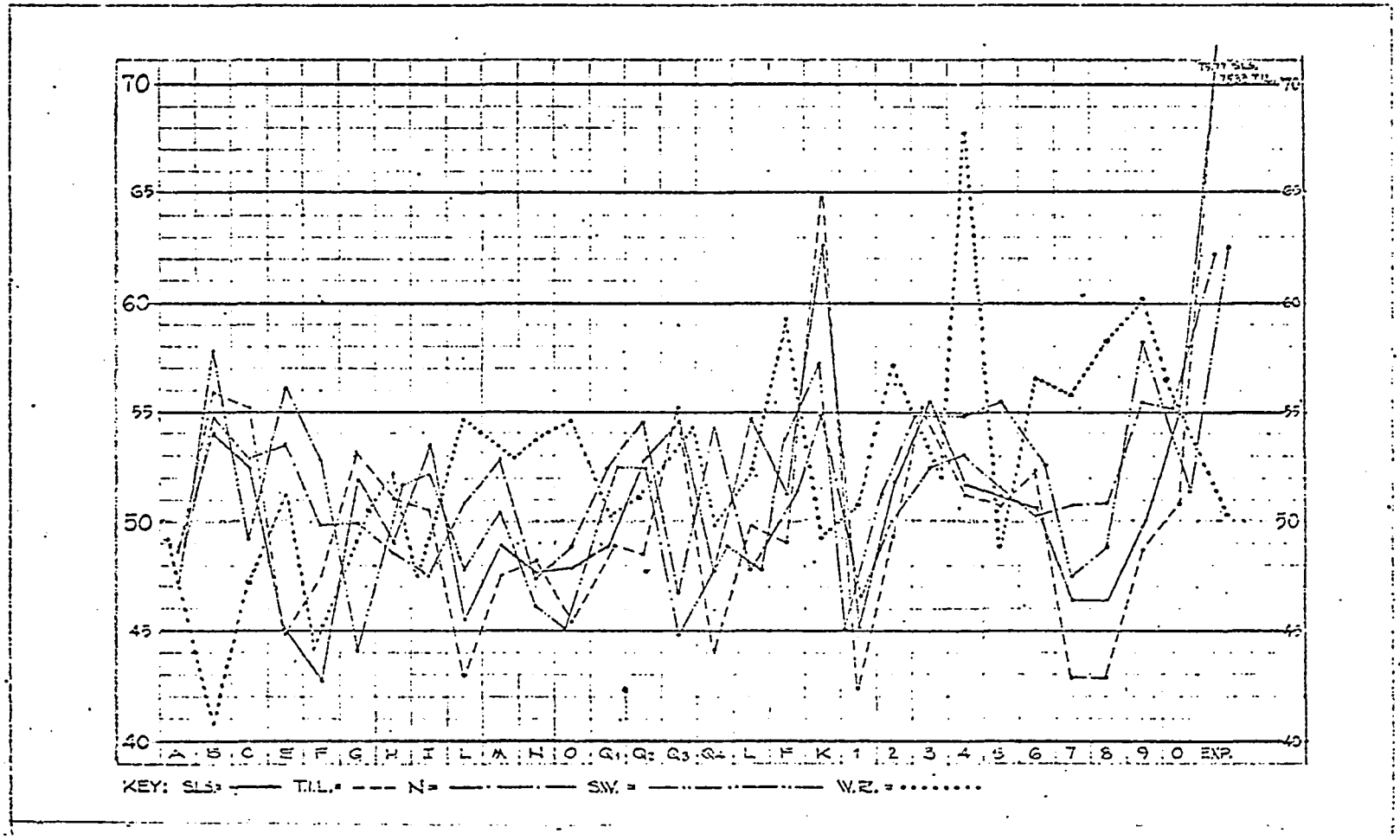

Fig. 1. Composite Profile of the Mean Score of Each of the Five Experimental Samples on Each of the 30 Variables

The graph illustrates that on some variables the means of the different groups fell relatively close together, while for others wide differences were apparent. To test for the significance of these differences the single-classification analysis of variance was computed for each of the 29 variables (Computer Program: Anova 45, Weldon and Humphrey 1969, at The University of Arizona Computer Center). An F value of 2.43 was necessary to reject the hypothesis at the .05 level of significance, and 3.44 at the .01 level (Popham 1967). The results have been shown in Table VII.

The following scales which differentiated significantly between the groups, also placed the giving-oriented, comparison, and receiving-oriented samples on a continuum: 16 PF--L; MMPI--F, K, Hy, Pd, Sc, and Ma.

On the basis of this comparison made in answering Question One, the fourth null hypothesis could be said to be tenable: The giving- versus receiving-oriented samples were differentiated by these seven scales in addition to the Experimental Scale.

The giving-oriented and receiving-oriented samples were found to be different with regard to these personality characteristics. The MMPI clinical scales consistently placed the receiving-oriented sample in the deviant direction.

TABLE VII

SINGLE-CLASSIFICATION ANALYSIS OF VARIANCE OF EACH SCALE

Degrees of Freedom:
Between Groups = 4
Within Groups = 166
Total = 170

	Mean	S.D.		Mean Sq[b]	F
16 PF SCALES:					
A. RESERVED vs. OUTGOING					
SLS	11.28	3.30	Between	2.26	F= .22
TIL	11.38	6.64	Within	10.27	
N	11.39	3.42			
SW	10.60	2.66			
WR	11.52	2.76			
B. LESS INTELLIGENT vs. MORE INTELLIGENT					
SLS	8.44	1.75	Between	39.88	F= 12.06**
TIL	8.79	1.80	Within	3.22	
N	8.57	1.50			
SW	9.13	1.81			
WR	6.08	2.08			
C. AFFECTED BY FEELINGS vs. EMOTIONALLY STABLE					
SLS	15.76	4.04	Between	4.26	F= 3.19*
TIL	16.62	3.67	Within	14.20	
N	15.93	3.99			
SW	14.50	3.06			
WR	13.69	3.79			
E. HUMBLE vs. ASSERTIVE					
SLS	8.76	4.35	Between	153.19	F= 9.39**
TIL	8.69	3.75	Within	16.32	
N	12.04	4.50			
SW	13.43	4.03			
WR	11.20	3.07			
F. SOBER vs. HAPPY-GO-LUCKY					
SLS	12.15	4.21	Between	119.66	F= 6.33**
TIL	14.29	3.48	Within	18.92	
N	15.32	5.06			
SW	16.63	3.89			
WR	12.64	4.59			
G. EXPEDIENT vs. CONSCIENTIOUS					
SLS	13.87	2.62	Between	105.60	F= 10.90**
TIL	14.53	2.97	Within	9.69	
N	11.57	5.72			
SW	9.83	3.15			
WR	13.16	3.24			
H. SHY vs. VENTURESOME					
SLS	11.85	5.30	Between	21.58	F= .83
TIL	12.85	4.47	Within	26.03	
N	11.57	5.72			
SW	13.17	5.55			
WR	13.44	4.06			
I. TOUGH-MINDED vs. TENDER-MINDED					
SLS	12.81	3.03	Between	22.95	F= 3.01*
TIL	11.94	2.51	Within	7.62	
N	11.00	3.21			
SW	12.40	2.40			
WR	11.04	2.28			

	Mean	S.D.		Mean Sq	F
L. TRUSTING vs. SUSPICIOUS					
SLS	6.20	2.91	Between	54.56	F= 5.15**
TIL	5.44	3.37	Within	10.55	
N	7.86	3.55			
SW	6.90	2.95			
WR	8.84	3.74			
M. PRACTICAL vs. IMAGINATIVE					
SLS	12.11	3.23	Between	41.66	F= 4.13**
TIL	11.62	3.26	Within	10.13	
N	13.46	3.39			
SW	14.33	3.06			
WR	15.49	2.83			
N. FORTHRIGHT vs. SHREWD					
SLS	9.78	2.17	Between	17.19	F= 2.44*
TIL	9.97	2.94	Within	7.01	
N	9.71	2.87			
SW	9.37	2.79			
WR	11.44	2.76			
O. SELF-ASSURED vs. APPREHENSIVE					
SLS	9.61	3.74	Between	56.54	F= 4.46**
TIL	6.91	3.68	Within	7.01	
N	10.21	3.61			
SW	8.77	3.35			
WR	12.36	3.16			
Q1. CONSERVATIVE vs. EXPERIMENTING					
SLS	8.30	2.33	Between	36.97	F= 5.96**
TIL	8.35	2.64	Within	6.20	
N	9.36	2.26			
SW	10.83	2.45			
WR	8.68	2.85			
Q2. GROUP-DEPENDENT vs. SELF-SUFFICIENT					
SLS	10.65	3.38	Between	42.99	F= 4.16**
TIL	9.21	2.95	Within	10.34	
N	11.25	2.64			
SW	12.30	3.54			
WR	10.04	3.14			
Q3. UNDISCIPLINED vs. CONTROLLED					
SLS	11.98	2.94	Between	73.44	F= 10.17**
TIL	12.47	2.06	Within	7.22	
N	9.68	3.21			
SW	9.13	2.21			
WR	11.92	2.75			
Q4. RELAXED vs. TENSE					
SLS	11.67	5.32	Between	101.14	F= 4.19**
TIL	9.94	3.32	Within	24.11	
N	14.93	5.65			
SW	12.30	4.52			
WR	12.76	5.56			

b. Sum of squares can be obtained by multiplying the Mean Square by the respective degrees of freedom.

TABLE VII Continued

	Mean	S.D.		Mean Sq	F
MMPI SCALES:					
L - VALIDITY					
SLS	5.41	2.34	Between	38.16	F= 7.17**
TIL	5.47	2.44	Within	5.32	
N	3.36	2.34			
SW	3.33	1.84			
WR	4.72	2.51			
F - VALIDITY					
SLS	3.59	2.59	Between	87.37	F= 9.75**
TIL	2.56	1.73	Within	8.97	
N	3.68	3.04			
SW	4.67	2.67			
WR	7.20	4.91			
K - VALIDITY					
SLS	19.00	4.66	Between	333.63	F= 15.22**
TIL	20.15	5.96	Within	21.92	
N	14.89	4.49			
SW	16.13	4.67			
WR	11.96	5.54			
HYPOCHONDRIASIS					
SLS	4.44	3.48	Between	73.91	F= 6.16**
TIL	2.97	2.26	Within	12.01	
N	5.14	3.04			
SW	4.40	3.07			
WR	7.40	5.24			
DEPRESSION					
SLS	20.32	3.72	Between	68.46	F= 3.87**
TIL	19.00	2.56	Within	17.68	
N	19.32	4.35			
SW	20.00	5.85			
WR	23.04	4.59			
HYSTERIA					
SLS	22.56	5.35	Between	42.75	F= 2.15
TIL	21.68	3.03	Within	19.87	
N	20.21	3.97			
SW	21.60	3.78			
WR	19.96	5.14			
PSYCHOPATHIC DEVIATE					
SLS	14.11	4.44	Between	200.69	F= 12.71**
TIL	13.94	3.07	Within	15.78	
N	14.61	3.36			
SW	15.50	3.95			
WR	20.40	4.59			

	Mean	S.D.		Mean Sq	F
MASCULINITY-FEMININITY					
SLS	37.41	3.96	Between	19.91	F= 5.74**
TIL	37.09	3.74	Within	3.61	
N	37.71	3.73			
SW	40.60	3.82			
WR	35.72	4.87			
PARANOIA					
SLS	10.17	2.36	Between	359.32	F= 1.70
TIL	9.00	2.45	Within	8.36	
N	10.04	2.69			
SW	9.13	5.25			
WR	10.52	4.05			
PSYCHASTHENIA					
SLS	10.35	5.71	Between	399.32	F= 9.74**
TIL	7.74	4.75	Within	41.01	
N	13.71	5.96			
SW	11.23	7.59			
WR	17.52	8.42			
SCHIZOPHRENIA					
SLS	8.17	5.53	Between	618.03	F= 11.15**
TIL	5.35	3.76	Within	55.41	
N	11.71	7.74			
SW	10.13	7.74			
WR	17.65	12.85			
HYPOMANIA					
SLS	13.96	3.95	Between	161.34	F= 8.97**
TIL	13.41	3.95	Within	93.44	
N	16.50	4.48			
SW	17.67	4.00			
WR	18.56	5.95			
SOCIAL INTROVERSION					
SLS	29.04	8.96	Between	169.85	F= 1.82
TIL	25.24	7.91	Within	93.44	
N	29.95	10.51			
SW	25.73	11.77			
WR	30.56	9.53			
EXPERIMENTAL SCALE					
SLS	51.41	4.89	Between	2865.61	F= 74.14**
TIL	51.47	4.09	Within	38.65	
N	39.71	6.70			
SW	40.03	7.82			
WR	29.00	8.64			

Question Two: To what extent do MMPI and 16 PF variables correlate with the Experimental Scale?

The correlations of the Experimental Scale with each of the variables of the MMPI and 16 PF for each group and for the total N of 171 have been shown in Table VIII. The correlations of particular interest were those that varied without regard to the Experimental Scale. They represent characteristics which were apparently not affected by the giving-oriented characteristic. Three were apparent by observation: the MMPI F, Pd, and Pa scales. On these scales the two giving-oriented samples were not consistent. The F correlation of -.42 with the Experimental Scale for the SLS sample contrasted with one of +.05 for the TIL sample; the significant -.49 correlation for SLS on the Pd scale was a non-significant -.10 for TIL, and the correlation on the Pa scale of -.13 for SLS contrasted by a +.57 for TIL. These results for the two groups which were shown to be homogeneous on the Experimental Scale, indicated that the characteristics represented by these scales had little or no relation to the giving-oriented characteristic.

The MMPI F and Pd scales were two of the seven on which the tenability of hypothesis four was based in answering the preceding question. At this point, the null hypothesis could still be said to be tenable based on the discriminating power of the remaining five scales -- 16 PF

TABLE VIII

CORRELATION COEFFICIENTS OF THE EXPERIMENTAL SCALE WITH EACH VARIABLE FOR EACH GROUP

Variable	SLS	TIL	SW	N	WR	Total
16 PF:						
A	03	34	43*	31	19	13
B	03	-26	-34	03	30	24**
C	41**	35	32	64**	54**	43**
E	-07	22	-07	-32	-45*	-33**
F	00	01	33	09	-39	-09
G	14	13	49**	48**	76**	40**
H	02	19	19	06	28	02
I	-08	-10	32	-04	10	17*
L	-42**	-24	-33	-70**	-40*	-49**
M	-20	-32	-47**	-56**	-27	-39**
N	05	-06	13	31	37	-01
O	-42**	-52**	-49**	-33*	-46*	-41**
Q1	-08	-04	-13	00	18	-13
Q2	-05	-26	-30	-34*	-08	-17*
Q3	21	23	22	39*	47*	32**
Q4	-49**	-39*	-38*	-52**	-69**	-44**
MMPI:						
L	38**	30	15	34*	53**	38**
F	-42**	05	-48**	-35*	-58**	-54**
K	73**	68**	70**	65**	91**	78**
Hs	-21	-23	-43*	-44	-56**	-46**
D	-28*	-26	-73**	-18	-22	-37**
Hy	31*	58**	02	17	30	30**
Pd	-49**	-10	-54**	-49**	-36	-56**
Mf	-18	-20	05	17	16	02
Pa	-13	57**	-21	10	-60**	-15*
Pt	-61**	-53**	-74**	-48**	-76**	-67**
Sc	-55**	-45*	-70**	-61**	-75**	-69**
Ma	-41**	-32	-35*	-44**	-53**	-56**
Si	-39**	-45*	-44*	-32	-53**	-31**

* Significant at the .05 level.
** Significant at the .01 level.
Note that all decimal points are omitted.

Factor L, and MMPI K, Hy, Sc, and Ma scales -- which have not been shown to be different from the Experimental Scale.

Question Three: Is the Experimental Scale measuring an independent factor?

To evaluate this question, the Experimental Scale was factor analyzed with the MMPI and the 16 PF scales. A separate analysis was made of data of the combined giving-oriented samples as well as of the combined total of the five samples.

The factor analysis of the 30 variables for giving-oriented samples yielded eight factors whose eigenvalue exceeded 1.00. These accounted for 65.47 percent of the variance. When these eight were rotated, the Experimental Scale loaded on the first factor with a correlation of .70. Factor One accounted for 12.32 percent of the total variance.

The factor analysis when all 171 subjects were combined yielded seven factors with significant eigenvalues. These seven accounted for 64.46 percent of the total variance. When rotated, the Experimental Scale again loaded on Factor One, with a correlation of .81. Factor One accounted for 27.37 percent of the total variance.

Table IX shows, for both the giving-oriented sample and the total sample, the other variables with major loadings on Factor One and their correlations with that

TABLE IX

CORRELATIONS OF VARIABLES WITH FACTOR ONE

Positive Correlations			Negative Correlations		
Giving-Oriented Sample:					
Experimental Scale		.70			
16 PF Scales:					
C	High Ego Strength	.57	L	Protension	-.55
Q3	High Self-Concept	.53	O	Guilt Proneness	-.58
			Q4	High Ergic Tension	-.60
MMPI Scales:					
K	Validity	.84	F	Validity	-.65
			Pt	Psychasthenia	-.82
			Sc	Schizophrenia	-.83
			Si	Social Introversion	-.59
Total Sample:					
Experimental Scale		.81			
16 PF Scales:					
C	High Ego Strength	.56	L	Protension	-.62
			O	Guilt Proneness	-.58
			Q4	High Ergic Tension	-.61
MMPI Scales:					
K	Validity	.81	F	Validity	-.68
			Hs	Hypochondriasis	-.64
			Pd	Psychopathic Dev	-.71
			Pt	Psychasthenia	-.86
			Sc	Schizophrenia	-.87
			Ma	Hypomania	-.69

factor. The rotated factor loadings for both these analyses are given in Appendix I. The matrix of inter-correlations of all thirty variables for the combined giving-oriented sample is presented in Appendix J.

Factor One was a bi-polar factor with characteristics which appeared to be relatively stable. It contained four of the five scales on which the tenability of Hypothesis Four had been based. The notable exception was the Hy scale which loaded on Factor Five for both analyses. Of the remaining four, the Ma scale loaded on the first factor in the analysis for the total group, but not in the analysis for the giving-oriented group. These results showed that the Ma did not consistently load on the factor with the Experimental Scale.

In testing Hypothesis Four, the 16 PF Factor L, and MMPI K and Sc scales were found to:

1. Discriminate between giving- and receiving-oriented samples,
2. Maintain consistent correlations with the Experimental Scale, and
3. Load on a common factor with the Experimental Scale.

The null hypothesis that no independent personality characteristic would be identifiable by the Experimental Scale, was found to be tenable with relation to these three scales.

Summary

Chapter Four presented the results of the analyses of this study. The first, second, and third null hypotheses were rejected. The fourth was not rejected. An Experimental Scale was developed based on the analysis of the results of the first two hypotheses.

CHAPTER 5

SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a summary of the investigation and culminates with conclusions and recommendations based on the findings.

Summary

Problem

Meaning and deep satisfaction in life are often the result of being oriented primarily toward serving others. Little has been known about the personality structure of the serving-oriented person or how he differs from the receiving-oriented.

In the United States the ranks of both classifications are increasing rapidly; young people searching for purpose in living are volunteering for Peace Corps and numerous social action programs, and at the same time welfare roles continue to increase.

This study proposed that people who dedicate their lives in service to others are different and that this difference would be psychologically measurable; and, that a personality scale could be developed through item analysis which would differentiate between giving- and receiving-oriented individuals.

Procedures and Techniques

MMPI data was secured by testing the student body at the Spanish Language School in Guadalajara, Mexico. The data of this giving-oriented sample was item analyzed by comparing the experimental sample females and males with the corresponding standardization control samples by use of the chi square test of significance. The following hypotheses were tested:

1. No significant measurable personality difference exists between the standardization control sample of females and a serving-oriented experimental sample of females as measured by item responses of the MMPI.
2. No significant measurable personality difference exists between the standardization control sample of males and a serving-oriented experimental sample of males as measured by item responses of the MMPI.

Items shown to be significant differentiators for both females and males by the chi square test were combined to form an Experimental Scale.

A replication sample of giving-oriented females was then included along with female samples of nurses and social workers (for comparison purposes) and also a sample of female welfare recipients. The five experimental

groups of females were then compared on the Experimental Scale using the analysis of variance model. This tested the hypothesis that:

> No significant measurable personality differentiation exists between the experimental sample of females, a replication sample of females, a contrastive sample of female welfare recipients, a sample of female welfare workers, and a sample of female nurses, as measured by an Experimental Scale to be developed as a result of testing the first hypotheses.

The Experimental Scale was then compared with twenty-nine established personality scales to gain further insight into its characteristics. The relationships between the Experimental Scale and MMPI and 16 PF scales were explored by various approaches to test the hypothesis that:

> No independent personality characteristic is identifiable by the newly developed scale.

Inquiry into this question was made by comparing the analysis of variance of the five group means on each of the thirty scales; by comparing the correlations of the

Experimental Scale with each of the MMPI and 16 PF scales; and by a factor analysis of the thirty variables.

Results

The results of testing the hypotheses have been listed below.

Hypothesis Number One: A comparison of the MMPI item responses of the experimental and standardization samples of females showed that 89 items significantly differentiated between the groups at the .01 level. A chi square test demonstrated the significance of the difference between the observed frequency of 89 and the expected frequency of 6. The first null hypothesis was therefore rejected.

Hypothesis Number Two: A similar comparison of MMPI item responses of the corresponding male samples showed that 99 items significantly differentiated between the male groups at the .01 level. Again, the observed number of differentiating items was significantly greater than chance expectation, and the second null hypothesis was also rejected.

Sixty-three items differentiated between the experimental and control samples for both males and females. These 63 items, free of sex bias, were combined to comprise

an Experimental Scale. This Experimental Scale was used in testing Hypotheses Three and Four.

Hypothesis Number Three: A comparison of the means of the five experimental samples of females on the Experimental Scale revealed a statistically significant difference beyond the .01 level. The third null hypothesis was rejected.

T tests showed that the replication sample was, in fact, not different from the original experimental sample of females, and also that the samples of nurses and social workers were homogeneous. It was also found that the mean of the receiving-oriented group was not different from that of the standardization control samples.

Hypothesis Number Four: A comparison of the five experimental samples on each of the twenty-nine personality variables revealed that seven scales significantly differentiated between the means of the giving-oriented and receiving-oriented groups. They were the 16 PF Factor L, and the MMPI F, K, Hy, Pd, Sc, and Ma scales.

The comparison of the correlations of the Experimental Scale with each of the other variables revealed that the MMPI F and Pd scales were inconsistent in their relationship with the giving-oriented samples. The Experimental Scale was, therefore, judged to measure a

characteristic different from those measured by the F and Pd scales.

The factor analysis of the thirty variables revealed that the Experimental Scale loaded on the first rotated factor. The 16 PF Factor L, and MMPI K and Sc scales also loaded on the first rotated factor. The Hy and Ma scales were shown to load on different factors from the factor containing the Experimental Scale.

In these three procedures the 16 PF Factor L and the MMPI K and Sc scales were not shown to be statistically different from the Experimental Scale. The null hypothesis was found to be tenable with relation to these three scales.

Discussion

This section discusses additional implications of the results and presents relevant comparisons with other reported studies.

Characteristics Suggested by the Factor L and the K and Sc Scales: Since the Experimental Scale may be measuring the same characteristics as the 16 PF Factor L and the MMPI K and Sc Scales, it may be possible to get a somewhat objective picture of the giving-oriented individual in terms of these scales.

The 16 PF Factor L suggests that individuals who score at the extremes of the continuum tend to be

characterized as: accepting, adaptable, outgoing, trustful, open, understanding, tolerant, soft-hearted, composed and cheerful at one extreme, versus suspecting, jealous, self-sufficient, suspicious, withdrawn, brooding, tyrannical, hard and irritable, at the other extreme (Cattell and Eber 1964, p. 15).

These characteristics at the positive end of Factor L are quite similar to those found by some MMPI investigators for the K scale. Berger (1955) was one of the first to hypothesize that the K scale measured something more than defensiveness. He noted high positive correlations between K and self-acceptance and suggested that K might reflect an expressed acceptance of self. King and Schiller (1959) indicated that in addition to, or instead of, a test-taking attitude, the K scale might measure what might be called adequacy of ego-functioning. It was their opinion that K may be a measure of healthy emotional adjustment. Sweetland and Quay (1953) suggested that K might represent one end of a continuum with psychasthenia and schizophrenia (Sc) at the other extreme. They also felt that K might be a measure of healthy emotional adjustment. The conclusion that K might lie opposite Sc on a continuum is borne out in the present study in which Sc consistently correlated negatively with both K and the Experimental Scale.

The high correlation of the Experimental Scale with the K Scale suggested the possibility of some item overlap within the scales. Further exploration revealed that 10 of the 30 items comprising the K Scale were also among the 63 Experimental Scale items. They were items: 30, 89, 124, 138, 170, 217, 316, 322, 398, 406. This lack of independence partially accounted for the close relationship of the K and Experimental Scales shown in testing Hypothesis Four.

Experimental Scale item content: The question could be raised as to why the items of the Experimental Scale discriminated between giving- and receiving-oriented samples. This is a question concerning the content validity of the scale. No attempt was made to establish a validity coefficient, for reasons discussed in Chapter Three. Content validity for a personality test is "usually inappropriate and may, in fact, be misleading" (Anastasi 1968, p. 102). Personality scale items with high content validity would invite persons so inclined, to fake good or fake bad. The items could be subjectively examined, however, to determine common characteristics or similarities. (The items have been recorded in Appendix E, Table 4.)

In a subjective evaluation, three main themes seemed to run through the items. They were self-confidence

(17 items), confidence or trust in others (16 items), and positive emotional adjustment (15 items). The item numbers indicating self-confidence were: 67, 84, 138, 170, 217, 244, 332, 337, 361, 375, 381, 389, 390, 395, 398, 518, 520; those indicating confidence in others were: 26, 89, 124, 136, 157, 244, 250, 265, 271, 280, 292, 316, 348, 404, 406, 436; and those items judged to indicate emotional adjustment were: 26, 67, 84, 124, 138, 157, 217, 265, 322, 337, 338, 345, 361, 470, 510.

Self-confidence, confidence in others and emotional adjustment are characteristics which might be expected of individuals whose lives are oriented toward serving others. A fourth theme consisting of 9 items might also have been anticipated from the experimental sample. It was a religious theme, and consisted of items: 58, 95, 98, 206, 249, 373, 488, 490, and 491.

These four themes accounted for 45 of the Experimental Scale items. The remaining 18 miscellaneous items would fall under various categories.

MMPI and 16 PF Factor One: When O'Dell and Karson factor analyzed the MMPI with the 16 PF, they found the first factor to be an "MMPI Pathology Factor", with major loadings by the Sc, Pt, Pd and Hs Scales. In their study, no 16 PF scale loaded on the first factor. In the present study the same scales negatively loaded on the first factor

along with the Ma and D scales. However, in the present study, the first factor was bi-polar. One pole would correspond with the "Pathology Factor" of O'Dell and Karson, but the other pole held the Experimental and K Scales of the MMPI and the +C, -L, -O, and -Q4 16 PF Scales. Those 16 PF scale characteristics are:

+C emotionally stable

-L trusting, adaptable, free of jealousy

-O self-assured, confident

-Q4 relaxed, tranquil, unfrustrated

The first factor of the present study could then be described as MMPI pathology versus healthy emotional adjustment.

MMPI and 16 PF cross correlates: The literature contained only one study (LaForge 1962) showing cross-test correlates of the MMPI and 16 PF variables. (These have been given in Table 1, page 35.) Those correlates from the giving-oriented samples of the present study are given in Table X, for comparison purposes. LaForge found 46 correlations larger than .30. The present study found 35 such correlations. Twenty-six of the 35 correlations confirmed the findings of LaForge. In no case did a contradiction of sign occur.

TABLE X

CROSS-TEST CORRELATES OF THE MMPI AND 16 PF VARIABLES OF GIVING-ORIENTED SAMPLES

Variable	.30 to .39	.40 to .49	above .49
L	+C	-Q4	
K	+Q3	-O, +C, -Q4	
Hs	+M		
D	-E, -F, -H, +O, +Q4		
Pd	+L, -Q3		
Pt	-H, +L, +M	-C, -Q3	+O, +Q4
Sc	+L, +O	-C, -Q3	+Q4
Ma	+L, +Q4		
Si	-C, +O, +Q2	-E, -F, +Q4	-H

Comparison with another giving-oriented sample: The operational definition of the giving-oriented construct appears to have been supported by a similarity between the MMPI scores for female Peace Corps volunteers reported by Guthrie and McKendry (1963) and those of the Guadalajara giving-oriented sample of the present study. The K-corrected MMPI T scores for both have been presented in Appendix A.

Conclusions

The following conclusions were drawn from the results of this study.

1. It is concluded that individuals who dedicate their lives in service to others are psychologically different from the norm and that this difference is

measureable. This difference has been measured by the Experimental Scale.

2. It is concluded that the scores of receiving-oriented individuals on the Experimental Scale are not significantly different from those of the normal population, and that the Experimental Scale is, therefore, not bi-polar as are the 16 PF scales. In this regard the Experimental Scale is not unlike the traditional MMPI scales. This result would be expected since items were chosen which discriminated the giving-oriented sample from the norm. A scale differentiating the normative sample and a receiving-oriented group would probably be made up primarily of different items. A bi-polar instrument could be developed by including, with the Experimental Scale, items which differentiated receiving-oriented individuals from the norm.

3. It is concluded that nurses and social workers are homogeneous in relation to the Experimental Scale, and that they lie approximately mid-way between the norm and samples defined as being giving-oriented.

4. It is concluded that the Experimental Scale may be measuring the same characteristic as the 16 PF Factor L and the MMPI K and Sc scales. It may therefore

be possible to describe the giving-oriented person in terms of these scales.

5. It is concluded that the operational definition of the giving-oriented construct has been supported by a similarity between the MMPI scores for female Peace Corps volunteers reported by Guthrie and McKendry (1963) and those of the Guadalajara giving-oriented sample of the present study.

Recommendations

1. It is recommended that the relationships of the Experimental Scale with the 16 PF Factor L and MMPI K and Sc scales be more fully explored.

2. It is recommended that these procedures be replicated using Peace Corps Volunteers and other samples which can be operationally defined as giving-oriented.

3. It is recommended that this study be followed-up by comparing giving- and receiving-oriented samples of males with these results.

4. It is recommended that item responses of a sample of receiving-oriented individuals be compared with the standardization norm group and that the items be included with the present Experimental Scale in order that the scale might be bi-polar. The focus of the present

study on giving-oriented individuals needs to be balanced with one focusing on the receiving-oriented.

5. It is recommended that testing be conducted using a random sample in order to establish a standard deviation and norms for the Experimental Scale.

6. It is recommended that a study be made to establish the predictive validity of the Experimental Scale. The instrument might then be a valuable tool to sending agencies faced with the responsibility of selecting service-oriented personnel.

7. Since the 16 PF is designed for use with normal populations and might be more appropriate than the MMPI for most groups, it is recommended that a giving- vs. receiving-oriented scale be developed using 16 PF items.

8. It is recommended that the personality characteristics of the giving-oriented be studied by child psychologists in order that development of these characteristics might be encouraged in children born into receiving-oriented communities.

APPENDIX A

K-CORRECTED MMPI MEAN T SCORES OF REPORTED SAMPLES

	K	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma	Si
Peace Corps (Guthrie and McKendry)	64	49	47	56	54	50	55	58	54	57	
Welfare Recip. (Griswold et al.)	48	58	62	60	68	48	59	57	63	57	60
Nurses (Weisgerber)		49	49	51	54	53	51	52	54	60	
Exp. Sample (Present Study)	62	52	51	56	58	48	56	58	58	53	54

APPENDIX B

DESCRIPTION OF MMPI AND 16 PF SCALES

DESCRIPTION OF MMPI SCALES[1]

THE LIE SCORE (L) is a validating score that affords a measure of the degree to which the subject may be attempting to falsify his scores by always choosing the response that places him in the most acceptable light socially.

THE VALIDITY SCORE (F) is not a personality scale but serves as a check on the validity of the whole record. A low F score is a reliable indication that the subject's responses were rational and relatively pertinent.

THE K SCORE (K) has been identified as a measure of super-ego strength. Traditionally it is weighted and added to certain clinical scales to improve the operation of those scales.

THE HYPOCHONDRIASIS SCALE (Hs) is a measure of abnormal concern about bodily functions.

THE DEPRESSION SCALE (D) measures the depth of the clinically-recognized symptom, or symptom complex, depression.

---

1. The information for these brief descriptions was taken from the test manual (Hathaway and McKinley 1951, pp. 18-21.

THE HYSTERIA SCALE (Hy) measures the degree to which the subject is like patients who have developed conversion hysteria symptoms.

THE PSYCHOPATHIC DEVIATE SCALE (Pd) measures the similarity of the subject to a group of persons whose main difficulty lies in their absence of deep emotional response, their inability to profit from experience, and their disregard of social mores.

THE MASCULINITY-FEMININITY INTEREST SCALE (Mf) measures the tendency toward masculinity or femininity of interest patterns. A high score indicates a deviation of the basic interest patterns in the direction of the opposite sex.

THE PARANOIA SCALE (Pa) was derived by contrasting normal persons with a group of clinic patients who were characterized by suspiciousness, oversensitivity and delusions of persecution.

THE PSYCHIASTHENIA SCALE (Pt) measures the similarity of a person to psychiatric patients who are troubled by phobias or compulsive behavior.

THE SCHIZOPHRENIA SCALE (Sc) measures the similarity of the subject's responses to those patients who are characterized by bizzarre and unusual thoughts or behavior.

THE HYPOMANIA SCALE (Ma) measures the personality factor characteristic of persons with marked overproductivity in thought and action.

THE SOCIAL SCALE (Si) aims to measure the tendency to withdraw from social contact with others.

DESCRIPTION OF 16 PF SCALES[2]

	FACTOR A	
Cyclothymia, A+ (Warm, Sociable)	versus	Schizothymia, A- (Aloof, Stiff, Cold)
	FACTOR B	
General Intelligence, B+ (Bright, Intelligent)	versus	Mental Defect, B- (Dull, Low Capacity)
	FACTOR C	
Emotional Stability or Ego Strength, C+ (Mature, Calm)	versus	Dissatisfied Emotionality, C- (Emotional, Unstable)
	FACTOR E	
Dominance or Ascendance, E+ (Aggressive, Competitive)	versus	Submission, E- (Submissive, Mild)
	FACTOR F	
Surgency, F+ (Glum, Silent)	versus	Desurgency, F- (Enthusiastic, Talkative)
	FACTOR G	
Super Ego Strength, G+ (Casual, Undependable)	versus	Lack of Rigid Internal Standards, G- (Conscientious, Persistent)

2. These bi-polar descriptions of source traits were taken from the test manual (Cattell and Eber 1964, pp. 11-19).

FACTOR H

Parmia, H+ (Timid, Mild)	versus	Threctia, H- (Adventurous, Thick Skinned)

FACTOR I

Premsia, I+ (Tough, Realistic)	versus	Harria, I- (Sensitive, Effeminate)

FACTOR L

Protension, Paranoid Tendency, L+ (Suspecting, Jealous)	versus	Relaxed Security, L- (Trustful, Adaptable)

FACTOR M

Autia, M+ (Bohemian, Unconcerned)	versus	Prexernia, M- (Conventional, Practical)

FACTOR N

Shrewdness, N+ (Sophisticated, Polished)	versus	Naivete, N- (Simple, Awkward)

FACTOR O

Guilt Proneness, O+ (Insecure, Anxious)	versus	Confident Adequacy, O- (Confident, Unshakable)

FACTOR Q1

Radicalism, Q1+ (Experimenting, Critical)	versus	Conservatism of Temperament, Q1- (Conservative, Accepting)

FACTOR Q2

Self-Sufficiency, Q2+	versus	Group Dependency, Q2-

FACTOR Q3

High Self-Sentiment Formation, Q3+ (Controlled, Exact)	versus	Poor Self-Sentiment Formation, Q3- (Lax, Unsure)

FACTOR Q4

High Ergic Tension, Q4+ (Tense, Excitable)	versus	Low Ergic Tension, Q4- (Phlegmatic, Composed)

APPENDIX C

COMPUTER PROGRAM AND DATA CARD FORMAT FOR LISTING MMPI ITEM FREQUENCIES AND PERCENTAGES

PROGRAM FOR LISTING ITEM FREQUENCIES AND PERCENTAGES

```
      PROGRAM LISTING (INPUT, OUTPUT)
      DIMENSION QUES (566), TRUE(566), FALSE(566), PT(566), PF(566)
C....I=ITEM NO., TRUE (I) = FREQUENCY OF TRUE, FALSE(I) = FREQUENCY OF FALSE,
     1 PT(I) = PERCENTAGE OF TRUE, PF(I) = PERCENTAGE OF FALSE
      PRINT 5
    5 FORMAT (18X, 4HTRUE, 20X, 5HFALSE/
     1 3X, 53HITEM   FREQUENCY  PERCENTAGE    FREQUENCY  PERCENTAGE/)
C....ZERO ACCUMULATORS
      DO  10 I=1,566
      TRUE(I)=0
   10 FALSE(I)=0
C....OBTAIN SCORES, ACCUMULATE AND COMPUTE PERCENTAGES
      DO 650 J=1,54
      READ 200, (QUES(I),I=1,566)
  200 FORMAT (6X, 63F1.0, 7(/6X, 63F1.0),(/6X, 62F1.0))
      DO 600 I=1,566
      IF (QUES(I)-1) 30,20,30
   20 TRUE(I)=TRUE(I)+1
      PT(I)=(TRUE(I)/54)*100
      GO TO100
   30 FALSE(I)=FALSE(I)+1
      PF(I)=(FALSE(I)/54)*100
  100 CONTINUE
  600 CONTINUE
  650 CONTINUE
      PRINT 400,(I, TRUE(I), PT(I), FALSE(I), PF(I), I=1,566)
  400 FORMAT (3X, I3, 6X,F4.0,7X,F4.0,10X,F4.0,7X,F4.0)
      STOP
      END
```

DATA CARD FORMAT FOR FREQUENCY COUNT OF MMPI ITEMS

This example shows the layout for the nine computer cards of the MMPI item responses. These are the responses of experimental female subject #01.

```
F011   111  11      1 11  11  1          111       1    1  11 11 1  1
F012   1  1 1    1 11   11    111  1 11 1   11 1 1 1 111 1   1    1 1
F013   1 11  1  11 111    1111 11111 1 1 1 1111 1   111 1 11    1 11
F014  1 1   111  1    1 1      11  111   11  1111    111  11    11
F015   1  11  1    1 1   1   1 1  11      1    1 11    1   1111 1 11
F016  1 1      111  1     1   1   1  1     1   1         1111111111 1
F017  11       1  1  1    11 11 1 111  11  1    1   1 1  1 11  1 1 11
F018   1 1  11 1     11 1 11111 1     11    11 1  1 1 1    11111111
F019     11   1 11   111111 111  11  1 111 1 11111 1 1 1 1 1       1
```

ID Field (4 columns):	Data Field (63 columns):	Card No.	Items
Col. 1 = Sex	1 = True	1 =	1 - 63
Cols. 2-3 = ID	Blank = False	2 =	64 - 126
Col. 4 = Card No.		3 =	127 - 189
		4 =	190 - 252
		5 =	253 - 315
		6 =	316 - 378
		7 =	379 - 441
		8 =	442 - 504
		9 =	505 - 566

APPENDIX D

MMPI ITEM FREQUENCIES FOR THE SLS EXPERIMENTAL SAMPLES

TABLE D-1

MMPI ITEM FREQUENCIES AND PERCENTAGES
FEMALE EXPERIMENTAL SAMPLE

	TRUE		FALSE			TRUE		FALSE	
Item	Freq	%	Freq	%	Item	Freq	%	Freq	%
1	8	15	46	85	38	15	28	39	72
2	51	94	3	6	39	15	28	39	72
3	43	80	11	20	40	3	6	51	94
4	31	57	23	43	41	12	22	42	78
5	22	41	32	59	42	10	19	44	81
6	14	26	40	74	43	6	11	48	89
7	39	72	15	28	44	2	4	52	96
8	51	94	3	6	45	20	37	34	63
9	49	91	5	9	46	41	76	13	24
10	4	7	50	93	47	1	2	53	98
11	3	6	51	94	48	0	0	54	100
12	29	54	25	46	49	0	0	54	100
13	17	31	37	69	50	0	0	54	100
14	10	19	44	81	51	46	85	8	15
15	27	50	27	50	52	9	17	45	83
16	1	2	53	98	53	8	15	46	85
17	50	93	4	7	54	52	96	2	4
18	39	72	15	28	55	51	94	3	6
19	7	13	47	87	56	2	4	52	96
20	42	78	12	22	57	33	61	21	39
21	16	30	38	70	58	53	98	1	2
22	11	20	43	80	59	10	19	44	81
23	2	4	52	96	60	49	91	5	9
24	1	2	53	98	61	7	13	47	87
25	36	67	18	33	62	10	19	44	81
26	22	41	32	59	63	46	85	8	15
27	0	0	54	100	64	15	28	39	72
28	6	11	48	89	65	50	93	4	7
29	4	7	50	93	66	3	6	51	94
30	14	26	40	74	67	8	15	46	85
31	2	4	52	96	68	36	67	18	33
32	6	11	48	89	69	3	6	51	94
33	2	4	52	96	70	44	81	10	19
34	1	2	53	98	71	27	50	27	50
35	0	0	54	100	72	5	9	49	91
36	41	76	13	24	73	16	30	38	70
37	45	83	9	17	74	37	69	17	31

(Female Experimental Sample, continued)

Item	TRUE Freq	%	FALSE Freq	%	Item	TRUE Freq	%	FALSE Freq	%
75	50	93	4	7	118	3	6	51	94
76	3	6	51	94	119	46	85	8	15
77	38	70	16	30	120	39	72	15	28
78	39	72	15	28	121	1	2	53	98
79	25	46	29	54	122	45	83	9	17
80	13	24	41	76	123	0	0	54	100
81	27	50	27	50	124	17	31	37	69
82	20	37	34	63	125	5	9	49	91
83	53	98	1	2	126	37	69	17	31
84	10	19	44	81	127	32	59	22	41
85	0	0	54	100	128	34	63	20	37
86	18	33	36	67	129	17	31	37	69
87	26	48	28	52	130	50	93	4	7
88	52	96	2	4	131	40	74	14	26
89	7	13	47	87	132	39	72	15	28
90	52	96	2	4	133	42	78	12	22
91	16	30	38	70	134	44	81	10	19
92	37	69	17	31	135	1	2	53	98
93	12	22	42	78	136	2	4	52	96
94	12	22	42	78	137	51	93	4	7
95	53	98	1	2	138	26	48	28	52
96	44	81	10	19	139	0	0	54	100
97	7	13	47	87	140	47	87	7	13
98	53	98	1	2	141	25	46	29	54
99	13	24	41	76	142	20	37	34	63
100	25	46	29	54	143	7	13	47	87
101	23	43	31	57	144	1	2	53	98
102	44	81	10	19	145	3	6	51	94
103	48	89	6	11	146	1	2	53	98
104	3	6	51	94	147	9	17	45	83
105	48	89	6	11	148	21	39	33	61
106	3	6	51	94	149	34	63	20	37
107	51	94	3	6	150	44	81	10	19
108	1	2	53	98	151	1	2	53	98
109	26	48	28	52	152	45	83	9	17
110	3	6	51	94	153	50	93	4	7
111	22	41	32	59	154	53	98	1	2
112	32	59	22	41	155	41	76	13	24
113	53	98	1	2	156	3	6	51	94
114	2	4	52	96	157	1	2	53	98
115	53	98	1	2	158	22	41	32	59
116	5	9	49	91	159	2	4	52	96
117	15	28	39	72	160	30	56	24	44

(Female Experimental Sample, continued)

Item	TRUE Freq	%	FALSE Freq	%	Item	TRUE Freq	%	FALSE Freq	%
161	4	7	50	93	205	0	0	54	100
162	18	33	36	67	206	29	54	25	46
163	33	61	21	39	207	45	83	9	17
164	51	94	3	6	208	12	22	42	78
165	24	44	30	56	209	1	2	53	98
166	29	54	25	46	210	0	0	54	100
167	12	22	42	78	211	1	2	53	98
168	3	6	51	94	212	1	2	53	98
169	49	91	5	9	213	4	7	50	93
170	8	15	46	85	214	33	61	21	39
171	20	37	34	63	215	2	4	52	96
172	21	39	33	61	216	6	11	48	89
173	50	93	4	7	217	20	37	34	63
174	29	54	25	46	218	3	6	51	94
175	51	94	3	6	219	7	13	47	87
176	36	67	18	33	220	52	96	2	4
177	54	100	0	0	221	35	65	19	35
178	49	91	5	9	222	20	37	34	63
179	6	11	48	89	223	8	15	46	85
180	18	33	36	67	224	2	4	52	96
181	29	54	25	46	225	47	87	7	13
182	4	7	50	93	226	18	33	36	67
183	26	48	28	52	227	3	6	51	94
184	1	2	53	98	228	31	57	23	43
185	49	91	5	9	229	4	7	50	93
186	4	7	50	93	230	44	81	10	19
187	49	91	5	9	231	14	26	40	74
188	39	72	15	28	232	26	48	28	52
189	0	0	54	100	233	11	20	43	80
190	40	74	14	26	234	14	26	40	74
191	17	31	37	69	235	24	44	30	56
192	48	89	6	11	236	2	4	52	96
193	43	80	11	20	237	36	67	18	33
194	1	2	53	98	238	10	19	44	81
195	37	69	17	31	239	8	15	46	85
196	51	94	3	6	240	11	20	43	80
197	3	6	51	94	241	6	11	48	89
198	41	76	13	24	242	40	74	14	26
199	39	72	15	28	243	48	89	6	11
200	1	2	53	98	244	7	13	47	87
201	22	41	32	59	245	1	2	53	98
202	0	0	54	100	246	4	7	50	93
203	7	13	47	87	247	3	6	51	94
204	12	22	42	78	248	22	41	32	59

(Female Experimental Sample, continued)

	TRUE		FALSE			TRUE		FALSE	
Item	Freq	%	Freq	%	Item	Freq	%	Freq	%
249	52	96	2	4	293	0	0	54	100
250	6	11	48	89	294	49	91	5	9
251	1	2	53	98	295	36	67	18	33
252	3	6	51	94	296	33	61	21	39
253	47	87	7	13	297	8	15	46	85
254	18	33	36	67	298	7	13	47	87
255	37	69	17	31	299	12	22	42	78
256	4	7	50	93	300	9	17	45	83
257	47	87	7	13	301	6	11	48	89
258	54	100	0	0	302	46	85	8	15
259	18	33	36	67	303	4	7	50	93
260	11	20	43	80	304	31	57	23	43
261	40	74	14	26	305	6	11	48	89
262	40	74	14	26	306	50	93	4	7
263	8	15	46	85	307	17	31	37	69
264	11	20	43	80	308	15	28	39	72
265	6	11	48	89	309	48	89	6	11
266	13	24	41	76	310	46	85	8	15
267	16	30	38	70	311	12	22	42	78
268	33	61	21	39	312	5	9	49	91
269	3	6	51	94	313	26	48	28	52
270	24	44	30	56	314	22	41	32	59
271	0	0	54	100	315	1	2	53	98
272	51	94	3	6	316	6	11	48	89
273	5	9	49	91	317	16	30	38	70
274	39	72	15	28	318	51	94	3	6
275	4	7	50	93	319	10	19	44	81
276	53	98	1	2	320	3	6	51	94
277	10	19	44	81	321	26	48	28	52
278	15	28	39	52	322	8	15	46	85
279	2	4	52	96	323	1	2	53	98
280	3	6	51	94	324	3	6	51	94
281	48	89	6	11	325	11	20	43	80
282	11	20	43	80	326	11	20	43	80
283	10	19	44	81	327	31	57	23	43
284	5	9	49	91	328	6	11	48	89
285	25	46	29	54	329	23	43	31	57
286	3	6	51	94	330	49	91	5	9
287	36	67	18	33	331	1	2	53	98
288	2	4	52	96	332	10	19	44	81
289	40	74	14	26	333	1	2	53	98
290	12	22	42	78	334	4	7	50	93
291	0	0	54	100	335	6	11	48	89
292	13	24	41	76	336	15	28	39	72

(Female Experimental Sample, continued)

	TRUE		FALSE			TRUE		FALSE	
Item	Freq	%	Freq	%	Item	Freq	%	Freq	%
337	5	9	49	91	381	4	7	50	93
338	3	6	51	94	382	16	30	38	70
339	1	2	53	98	383	11	20	43	80
340	24	44	30	56	384	17	31	37	69
341	2	4	52	96	385	15	28	39	72
342	7	13	47	87	386	5	9	49	91
343	13	24	41	76	387	0	0	54	100
344	6	11	48	89	388	11	20	43	80
345	2	4	52	96	389	6	11	48	89
346	12	22	42	78	390	10	19	44	81
347	52	96	2	4	391	1	2	53	98
348	15	28	39	72	392	9	17	45	83
349	0	0	54	100	393	4	7	50	93
350	5	9	49	91	394	31	57	23	43
351	3	6	51	94	395	3	6	51	94
352	12	22	42	78	396	3	6	51	94
353	33	61	21	39	397	21	39	33	61
354	1	2	53	98	398	3	6	51	94
355	7	13	47	87	399	39	72	15	28
356	10	19	44	81	400	9	17	45	83
357	16	30	38	70	401	29	54	25	46
358	4	7	50	93	402	23	43	31	57
359	11	20	43	80	403	47	87	7	13
360	0	0	54	100	404	8	15	46	85
361	17	31	37	69	405	49	91	5	9
362	13	24	41	76	406	7	13	47	87
363	1	2	53	98	407	40	74	14	26
364	1	2	53	98	408	35	65	19	35
365	1	2	53	98	409	40	74	14	26
366	5	9	49	91	410	13	24	41	76
367	35	65	19	35	411	10	19	44	81
368	14	26	40	74	412	45	83	9	17
369	49	91	5	9	413	35	65	19	35
370	35	65	19	35	414	14	26	40	74
371	38	70	16	30	415	16	30	38	70
372	37	69	17	31	416	31	57	23	43
373	48	89	6	11	417	6	11	48	89
374	33	61	21	39	418	17	31	37	69
375	6	11	48	89	419	0	0	54	100
376	51	94	3	6	420	10	19	44	81
377	19	35	35	65	421	22	41	32	59
378	53	98	1	2	422	4	7	50	93
379	39	72	15	28	423	18	33	36	67
380	33	61	21	39	424	5	9	49	91

(Female Experimental Sample, continued)

	TRUE		FALSE			TRUE		FALSE	
Item	Freq	%	Freq	%	Item	Freq	%	Freq	%
425	22	41	32	59	469	0	0	54	100
426	10	19	44	81	470	4	7	50	93
427	43	80	11	20	471	3	6	51	94
428	26	48	28	52	472	12	22	42	78
429	32	59	22	41	473	8	15	46	85
430	34	63	20	37	474	36	67	18	33
431	6	11	48	89	475	22	41	32	59
432	12	22	42	78	476	24	44	30	56
433	12	22	42	78	477	23	43	31	57
434	3	6	51	94	478	41	76	13	24
435	28	52	26	48	479	43	80	11	20
436	30	56	24	44	480	8	15	46	85
437	15	28	39	72	481	29	54	25	46
438	13	24	41	76	482	27	50	27	50
439	21	39	33	61	483	53	98	1	2
440	45	83	9	17	484	9	17	45	83
441	34	63	20	37	485	1	2	53	98
442	18	33	36	67	486	45	83	9	17
443	15	28	39	72	487	10	19	44	81
444	16	30	38	70	488	52	96	2	4
445	41	76	13	24	489	29	54	25	46
446	3	6	51	94	490	51	94	3	6
447	13	24	41	76	491	2	4	52	96
448	7	13	47	87	492	16	30	38	70
449	44	81	10	19	493	40	74	14	26
450	31	57	23	43	494	7	13	47	87
451	34	63	20	37	495	23	43	31	57
452	4	7	50	93	496	47	87	7	13
453	17	31	37	69	497	51	94	3	6
454	7	13	47	87	498	23	43	31	57
455	20	37	34	63	499	31	57	23	43
456	3	6	51	94	500	29	54	25	46
457	32	59	22	41	501	31	57	23	43
458	22	41	32	59	502	28	52	26	48
459	5	9	49	91	503	25	46	28	54
460	46	85	8	15	504	14	26	40	74
461	24	44	30	56	505	2	4	52	96
462	47	87	7	13	506	10	19	44	81
463	45	83	9	17	507	3	6	51	94
464	51	94	3	6	508	52	96	2	4
465	9	17	45	83	509	22	41	32	59
466	45	83	9	17	510	7	13	47	87
467	4	7	50	93	511	4	7	50	93
468	22	41	32	59	512	2	4	52	96

(Female Experimental Sample, continued)

	TRUE		FALSE			TRUE		FALSE	
Item	Freq	%	Freq	%	Item	Freq	%	Freq	%
513	25	46	29	54	540	50	93	4	7
514	2	4	52	96	541	8	15	46	85
515	52	96	2	4	542	42	78	12	22
516	30	56	24	44	543	0	0	54	100
517	0	0	54	100	544	18	33	36	67
518	5	9	49	91	545	12	22	42	78
519	3	6	51	94	546	40	74	14	26
520	22	41	32	59	547	46	85	8	15
521	36	67	18	33	548	48	89	6	11
522	28	52	26	48	549	16	30	38	70
523	22	41	32	59	550	12	22	42	78
524	47	87	7	13	551	17	31	37	69
525	19	35	35	65	552	29	54	25	46
526	2	4	52	96	553	3	6	51	94
527	48	89	6	11	554	47	87	7	13
528	35	65	19	35	555	8	15	46	85
529	29	54	25	46	556	37	69	17	31
530	6	11	48	89	557	22	41	32	59
531	10	19	44	81	558	31	57	23	43
532	48	89	6	11	559	5	9	49	91
533	46	85	8	15	560	13	24	41	76
534	24	44	30	56	561	37	69	17	31
535	0	0	54	100	562	38	70	16	30
536	20	37	34	63	563	20	37	34	63
537	5	9	49	91	564	23	43	31	57
538	34	63	20	37	565	5	9	49	91
539	38	70	16	30	566	25	46	29	54

TABLE D-2

MMPI ITEM FREQUENCIES
MALE EXPERIMENTAL SAMPLE

The values listed below indicate the frequency of true responses to each item, given by the male experimental sample. The sample size was N=50, therefore the number of false responses can be calculated by subtracting the given frequency for true responses from fifty. The percentage can be calculated by multiplying the frequency by two.

Item	Freq True	Item	Freq True	Item	Freq True	Item	Freq True
1	31	26	16	51	45	76	0
2	50	27	2	52	2	77	9
3	40	28	2	53	7	78	32
4	14	29	6	54	49	79*	38
5	15	30	12	55	44	80	23
6	24	31	1	56	3	81	36
7	47	32	5	57	34	82	7
8	47	33	4	58	47	83	50
9	45	34	0	59	14	84	10
10	2	35	1	60	49	85	0
11	2	36	43	61	12	86	11
12	25	37	43	62	3	87	6
13	6	38	26	63	44	88	47
14	2	39	12	64*	17	89	12
15	33	40	1	65	49	90	49
16	0	41	6	66	3	91	27
17	47	42	2	67	7	92	3
18	44	43	1	68	41	93	29
19	6	44	0	69*	1	94	8
20	45	45	9	70	23	95	50
21	5	46	40	71	33	96	46
22	1	47	0	72	4	97	6
23	0	48	0	73*	15	98	50
24	4	49	0	74	1	99	11
25	30	50	1	75	45	100	24

(Male Experimental Sample, continued)

Item	Freq True	Item	Freq True	Item	Freq True	Item	Freq True
101	41	143	12	185	43	227	0
102	46	144	14	186	3	228	36
103	49	145	4	187	47	229	2
104	2	146	3	188	30	230	38
105	37	147	13	189	1	231	6
106	0	148	14	190	46	232	29
107	49	149	11	191	8	233	17
108	1	150	48	192	49	234	13
109	21	151	0	193	36	235	32
110	1	152	42	194	1	236	2
111	9	153	48	195	32	237	39
112	42	154	45	196	48	238	10
113	50	155	38	197	0	239	10
114	1	156	1	198	38	240	16
115	50	157	0	199	32	241	5
116	4	158	4	200	0	242	41
117	22	159	2	201	18	243	44
118	19	160	32	202	1	244	10
119	37	161	2	203	3	245	0
120	43	162	21	204	17	246	0
121	0	163	39	205	0	247	0
122	46	164	47	206	30	248	16
123	0	165	25	207	46	249	50
124	28	166	12	208	12	250	4
125	3	167	8	209	2	251	2
126	23	168	0	210	1	252	0
127	35	169	47	211	0	253	41
128	38	170	17	212	0	254	23
129	16	171	14	213	2	255	31
130	41	172	13	214	33	256	1
131	40	173	44	215	9	257	48
132	14	174	39	216	2	258	50
133	29	175	49	217	11	259	9
134	36	176	38	218	6	260	11
135	1	177	49	219	26	261	15
136	8	178	50	220	48	262	45
137	49	179	3	221	40	263	10
138	15	180	17	222	22	264	12
139	1	181	23	223	31	265	5
140	20	182	2	224*	5	266	3
141	17	183	23	225	33	267	14
142	23	184	0	226	13	268	25

(Male Experimental Sample, continued)

Item	Freq True	Item	Freq True	Item	Freq True	Item	Freq True
269	1	311	27	353	34	395	4
270	27	312	1	354	0	396	2
271	2	313	19	355	0	397	13
272	43	314*	29	356	9	398	4
273*	3	315	0	357	11	399	42
274	34	316	15	358	1	400	27
275	3	317	7	359	4	401	32
276	50	318	48	360	0	402	26
277	6	319	16	361	7	403	50
278	15	320	4	362	6	404	14
279	2	321	12	363	2	405	50
280	5	322	3	364	0	406	19
281	46	323	4	365	0	407	46
282	4	324	2	366	3	408	22
283	30	325	8	367	33	409	30
284	5	326	1	368	9	410	11
285	19	327	27	369	44	411	4
286	2	328	3	370	33	412	42
287	24	329	27	371	39	413	32
288	1	330	47	372	34	414	4
289	42	331	0	373	49	415	29
290	4	332	5	374	28	416	11
291	0	333	0	375	2	417	9
292	7	334	1	376	46	418	17
293	1	335	2	377	9	419	8
294	36	336	15	378	47	420	15
295*	28	337	2	379	40	421	16
296	26	338	1	380	29	422	3
297	16	339	0	381	3	423	33
298	1	340	24	382	8	424	1
299	7	341	0	383	17	425	10
300	26	342	6	384	18	426	16
301	1	343	9	385	4	427	36
302	43	344	2	386	2	428	36
303	1	345	0	387	1	429	38
304	19	346	7	388	1	430	36
305	3	347	44	389	7	431	2
306	47	348	19	390	18	432	24
307	12	349	2	391	0	433	5
308	6	350	0	392	2	434	9
309	41	351	1	393	4	435	4
310	46	352	7	394	37	436	31

(Male Experimental Sample, continued)

Item	Freq True	Item	Freq True	Item	Freq True	Item	Freq True
437	12	470	2	503	22	535	1
438	8	471	4	504	10	536	17
439	25	472	10	505	6	537	25
440	33	473	10	506	9	538	3
441	22	474	41	507	7	539	46
442	21	475	14	508	46	540	47
443	12	476	25	509	9	541	3
444	6	477	25	510	3	542	41
445	41	478	42	511	3	543	1
446	1	479	42	512	2	544	5
447	14	480	1	513*	18	545	2
448	5	481	22	514	1	546	42
449	39	482	34	515	48	547	39
450	27	483	50	516	30	548	48
451	27	484	4	517	0	549	9
452	14	485	3	518	3	550	32
453	23	486	46	519	0	551	14
454	10	487	6	520	29	552	35
455	19	488	50	521	46	553	1
456	2	489	25	522	31	554	33
457	35	490	50	523	24	555	3
458	23	491	0	524	45	556	37
459	0	492	9	525	10	557	1
460	39	493	39	526	0	558	33
461	17	494	3	527	48	559	4
462	48	495	35	528	43	560	10
463	29	496	43	529	18	561	31
464	41	497	50	530	4	562	19
465	11	498	27	531	5	563	50
466	43	499	20	532	43	564	20
467	4	500	22	533	43	565	0
468	20	501	38	534	26	566	7
469	3	502	38				

*This item was left blank by one of the fifty subjects.

APPENDIX E

SIGNIFICANT MMPI ITEMS

TABLE E-1

NMPI ITEMS SIGNIFICANT BEYOND THE .01 LEVEL
FOR EXPERIMENTAL SAMPLE OF FEMALES

True				False												
14	38	55	58	26	30	67	84	89	94	111	112	116	124	129	136
70	78	95	98	138	157	170	175	199	217	224	228	229	234	244	250
102	127	132	140	265	271	279	280	285	292	298	316	319	322	337	338
176	206	230	249	345	348	361	375	381	383	387	389	390	392	395	398
261	367	373	464	404	406	425	436	439	442	444	446	465	468	469	470
488	490			491	492	498	505	510	518	520					

TABLE E-2

NMPI ITEMS SIGNIFICANT BEYOND THE .01 LEVEL
FOR EXPERIMENTAL SAMPLE OF MALES

True			False												
38	58	95	19	26	28	30	35	45	59	62	67	77	84	89	99
98	102	127	111	116	124	135	155	156	158	157	170	199	217	229	231
206	222	237	244	250	264	265	271	279	280	285	287	292	298	301	316
249	311	373	322	325	337	338	345	348	361	363	365	368	375	380	381
483	488	490	385	386	387	389	390	395	398	404	406	410	411	414	425
548			436	444	446	451	456	459	461	470	484	485	491	492	498
			505	510	518	520	534								

TABLE E-3

NMPI ITEMS SELECTED FOR THE EXPERIMENTAL SCALE

True			False											
38	58	95	26	30	67	84	89	111	116	124	136	138	157	170
98	102	127	199	217	229	244	250	265	271	279	280	285	292	298
206	249	373	316	322	337	338	345	348	361	375	381	387	389	390
488	490		395	398	404	406	425	436	444	446	470	491	492	498
			505	510	518	520								

THE MMPI ITEMS AND DIRECTION OF DISCRIMINATION
FOR GIVING-ORIENTED INDIVIDUALS
ON THE EXPERIMENTAL SCALE

26	F	I feel that it is certainly best to keep my mouth shut when I'm in trouble.
30	F	At times I feel like swearing.
38	T	During one period when I was a youngster I engaged in petty thievery.
58	T	Everything is turning out just like the prophets of the Bible said it would.
67	F	I wish I could be as happy as others seem to be.
84	F	These days I find it hard not to give up hope of amounting to something.
89	F	It takes a lot of argument to convince most people of the truth.
95	T	I go to church almost every week.
98	T	I believe in the second coming of Christ.
102	T	My hardest battles are with myself.
111	F	I have never done anything dangerous for the thrill of it.
116	F	I enjoy a race or game better when I bet on it.
124	F	Most people will use somewhat unfair means to gain profit or an advantage rather than to lose it.
127	T	I know who is responsible for most of my troubles.
136	F	I commonly wonder what hidden reason another person may have for doing something nice for me.
138	F	Criticism or scolding hurts me terribly.
157	F	I feel that I have often been punished without cause.

170 F What others think of me does not bother me.

199 F Children should be taught all the main facts of sex.

206 T I am very religious (more than most people).

217 F I frequently find myself worrying about something.

229 F I should like to belong to several clubs or lodges.

244 F My way of doing things is apt to be misunderstood by others.

249 T I believe there is a Devil and a Hell in afterlife.

250 F I don't blame anyone for trying to grab everything he can get in this world.

265 F It is safer to trust nobody.

271 F I do not blame a person for taking advantage of someone who lays himself open to it.

279 F I drink an unusually large amount of water every day.

280 F Most people make friends because friends are likely to be useful to them.

285 F Once in a while I laugh at a dirty joke.

292 F I am likely not to speak to people until they speak to me.

298 F If several people find themselves in trouble, the best thing for them to do is to agree upon a story and stick to it.

316 F I think nearly anyone would tell a lie to keep out of trouble.

322 F I worry over money and business.

337 F I feel anxiety about something or someone almost all the time.

338 F I have certainly had more than my share of things to worry about.

345 F I often feel as if things were not real.

348 F I tend to be on my guard with people who are somewhat more friendly than I had expected.

361 F I am inclined to take things hard.

373 T I feel sure that there is only one true religion.

375 F When I am feeling very happy and active, someone who is low or blue will spoil it all.

381 F I am often said to be hotheaded.

387 F The only miracles I know of are simply tricks that people play on one another.

389 F My plans have frequently seemed so full of difficulties I have had to give them up.

390 F I have often felt badly over being misunderstood when trying to keep someone from making a mistake.

395 F The future is too uncertain for a person to make serious plans.

398 F I often think, "I wish I were a child again."

404 F People have often misunderstood my intentions when I was trying to put them right and be helpful.

406 F I have often met people who were supposed to be experts who were no better than I.

425 F I dream frequently.

436 F People generally demand more respect for their own rights than they are willing to allow for others.

444 F I do not try to correct people who express an ignorant belief.

446 F I enjoy gambling for small stakes.

470 F Sexual things disgust me.

488 T I pray several times every week.

490 T I read in the Bible several times a week.

491 F I have no patience with people who believe there is only one true religion.

492 F I dread the thought of an earthquake.

498 F It is always a good thing to be frank.

505 F I have had periods when I felt so full of pep that sleep did not seem necessary for days at a time.

510 F Dirt frightens or disgusts me.

518 F I have often felt guilty because I have pretended to feel more sorry about something than I really was.

520 F I strongly defend my own opinions as a rule.

APPENDIX F

PERCENTAGE OF RESPONSES IN SCORED DIRECTION ON EXPERIMENTAL SCALE

Item Number	Direction of Scoring	Experimental Sample		Control Sample	
		Female	Male	Female	Male
26	F	59	68	18	28
30	F	74	76	31	19
38	T	28	52	09	24
58	T	98	94	54	52
67	F	85	86	48	50
84	F	81	80	52	49
89	F	87	76	35	34
95	T	98	100	52	42
98	T	98	100	68	57
102	T	81	92	51	53
111	F	59	82	33	46
116	F	91	92	63	60
124	F	69	44	29	23
127	T	59	70	27	28
136	F	96	84	48	45
138	F	52	70	25	48
157	F	98	100	70	80
170	F	85	66	52	40
199	F	28	36	06	09
206	T	54	60	11	08
217	F	63	78	30	51
229	F	93	96	57	46
244	F	87	80	40	41
249	T	96	100	67	63
250	F	89	92	60	62
265	F	89	90	54	48
271	F	100	96	67	67
279	F	96	96	70	64
280	F	94	90	52	46
285	F	54	62	21	10
292	F	76	86	52	59
298	F	87	78	51	50
316	F	89	70	41	43
322	F	85	94	41	46
337	F	91	96	63	72

Appendix F, Continued

Item Number	Direction of Scoring	Experimental Sample		Control Sample	
		Female	Male	Female	Male
338	F	94	98	60	66
345	F	96	100	73	75
348	F	72	62	31	22
361	F	69	86	41	59
373	T	89	98	51	49
375	F	89	96	53	64
381	F	93	94	65	66
387	F	100	98	59	53
389	F	89	86	51	53
390	F	81	64	32	36
395	F	94	92	49	52
398	F	94	92	56	50
404	F	85	72	36	33
406	F	87	62	44	29
425	F	59	80	32	54
436	F	44	38	14	16
444	F	70	88	41	49
446	F	94	98	71	60
470	F	93	96	52	61
488	T	96	100	73	50
490	T	94	100	30	21
491	F	96	100	47	56
492	F	70	82	40	52
498	F	57	46	29	18
505	F	96	88	70	61
510	F	87	94	37	65
518	F	91	94	63	76
520	F	59	42	19	14
		5212	5308	2867	2925

APPENDIX G

DISTRIBUTION STATISTICS OF THE FIVE SAMPLES ON THE EXPERIMENTAL SCALE

Group	Mean	S.D.	S_x	Skewness	Kurtosis	Range
SLS	51.41	4.89	.65	-3.96**	2.78**	36-59
TIL	51.47	4.09	.70	-1.04	- .84	42-58
N	39.71	6.70	1.27	-1.28	- .60	25-49
SW	40.03	7.22	1.32	-1.65	1.10	20-54
WR	29.00	8.84	1.77	.18	-1.54	16-42

**Significant at the .01 level

APPENDIX H

RAW SCORES FOR EACH EXPERIMENTAL SAMPLE SUBJECT ON THE 16 PF, THE MMPI, AND THE EXPERIMENTAL SCALE

TABLE II-1

RAW SCORES
SPANISH LANGUAGE SCHOOL SUBJECTS

	16 PF SCALES																MMPI SCALES											EXP
	A	B	C	E	F	G	H	I	L	M	N	O	Q	Q	Q	Q	L	F	K	1	2	3	4	5	6	7	8	9	0	E
G01	14	9	13	13	15	11	17	7	10	12	7	12	7	11	13	12	7	7	16	3	22	19	17	38	8	15	20	17	28	5	1
G02	6	6	15	6	2	12	4	13	5	16	10	6	9	17	13	15	7	7	13	17	31	29	16	36	9	26	20	12	49	4	7
G03	8	10	16	8	13	15	8	15	6	13	12	13	8	11	15	13	7	3	21	1	20	25	12	38	11	8	7	15	21	4	
G04	12	9	16	5	12	15	16	12	8	12	10	7	4	6	7	13	6	2	21	3	21	25	14	36	10	11	7	16	26	5	7
G05	16	8	17	15	22	14	22	14	6	17	10	9	9	8	11	5	7	4	26	7	19	21	18	35	11	6	3	13	18	5	9
G06	8	9	15	7	12	13	11	15	4	12	8	9	8	4	15	15	4	1	21	4	19	24	16	42	9	3	6	12	31	6	2
G07	8	5	15	10	6	11	15	12	8	20	11	13	8	10	13	14	5	1	15	12	24	30	11	38	14	14	11	11	23	7	2
G08	15	9	10	16	18	14	17	10	14	15	10	17	9	8	6	13	3	2	8	3	22	12	24	36	11	24	23	19	36	3	6
G09	14	9	17	21	11	11	14	10	8	11	10	12	3	5	17	12	5	11	16	5	17	28	12	29	11	9	5	9	27	4	8
G10	11	10	18	13	18	15	15	13	6	7	11	7	7	9	14	7	5	4	26	5	21	23	16	36	7	4	3	11	23	5	5
G11	13	8	19	12	22	12	20	15	9	6	17	12	11	6	14	11	1	9	6	23	12	22	23	30	18	35	3	18	29	6	2
G12	12	10	4	6	13	11	18	18	8	8	8	12	9	9	13	15	3	3	19	6	18	20	11	34	13	10	15	16	24	4	6
G13	14	9	13	10	11	13	13	10	2	12	9	11	9	7	15	11	9	3	25	6	29	29	14	36	6	7	7	15	25	5	6
G14	6	10	15	5	9	12	9	12	2	6	10	10	5	7	13	5	9	5	16	3	20	17	7	39	10	8	7	10	30	5	3
G15	11	10	14	16	15	16	15	13	7	10	9	16	11	11	11	20	4	1	15	4	20	21	16	40	11	12	3	16	24	5	0
G16	12	11	21	12	11	18	16	18	5	11	10	3	10	12	12	2	7	3	24	0	20	19	9	34	10	0	2	11	23	5	5
G17	14	7	14	7	22	13	11	10	3	10	12	14	7	7	11	9	5	4	17	1	18	19	13	37	11	15	5	8	30	5	2
G18	14	8	7	9	12	10	5	12	8	14	8	15	5	15	13	13	2	5	12	6	19	22	13	33	11	11	1	8	17	2	9
G19	7	10	24	7	13	17	6	14	5	14	11	10	7	11	14	15	3	0	22	2	14	18	9	39	9	8	6	15	21	5	5
G20	15	7	14	4	6	11	9	16	4	16	8	15	5	10	16	14	3	4	21	3	25	26	17	42	9	12	7	13	30	4	9
G21	7	8	19	7	7	19	3	14	5	9	13	15	8	19	17	8	7	5	16	4	20	15	4	45	8	5	7	7	39	5	3
G22	12	9	17	12	17	14	19	13	2	8	10	4	14	9	14	5	9	1	24	1	15	29	11	38	9	0	2	12	20	5	9
G23	8	9	12	2	11	15	7	9	9	18	8	10	9	6	16	17	6	4	14	4	25	1	13	39	12	21	12	21	40	4	3
G24	7	10	19	6	11	17	10	16	5	13	8	7	9	10	15	9	3	3	18	8	15	21	11	38	8	10	5	14	40	5	1
G25	12	9	19	4	12	15	6	16	5	10	9	18	4	13	13	12	4	2	17	2	22	24	11	41	10	10	4	6	39	5	4
G26	12	6	19	8	9	20	4	12	6	14	8	13	7	11	12	15	6	3	12	11	26	31	3	40	14	16	13	11	39	5	1
G27	8	5	17	5	4	14	4	16	8	13	12	10	6	13	11	14	5	3	17	7	24	24	12	42	13	14	10	14	46	5	3
G28	14	8	13	13	15	13	17	17	10	11	6	14	9	7	12	14	6	1	19	3	19	27	16	41	12	10	6	12	23	4	6
G29	13	10	16	15	10	20	11	19	9	4	21	6	9	9	11	7	4	4	24	5	21	29	16	36	11	10	6	16	21	5	5
G30	10	7	14	9	13	13	15	15	6	13	13	9	5	13	10	19	3	7	10	9	26	24	24	36	8	17	16	17	39	3	6
G31	14	7	19	9	15	8	10	15	9	7	9	4	10	11	13	14	3	1	19	3	22	20	11	39	13	4	7	10	24	5	5
G32	16	8	20	12	14	16	23	14	4	10	12	6	8	11	16	1	6	1	23	1	15	25	14	33	11	1	2	13	13	5	3
G33	16	10	23	9	14	15	16	14	3	10	12	4	8	11	16	2	9	3	29	0	21	24	15	38	13	2	2	12	22	5	6
G34	13	7	23	8	11	15	13	11	2	15	13	4	5	10	12	5	9	3	25	4	20	29	17	37	7	7	7	11	26	5	7
G35	11	7	14	5	12	12	5	14	6	13	8	16	13	8	13	16	8	1	20	6	23	27	14	43	9	14	7	13	38	4	8
G36	6	6	17	3	6	19	10	6	4	8	13	11	5	8	12	9	3	3	20	3	19	26	13	43	9	9	8	15	26	5	7
G37	15	5	15	2	10	15	12	9	4	14	7	9	4	17	17	9	9	3	26	3	20	21	9	33	6	4	2	14	30	5	1
G38	8	9	21	10	14	11	7	10	7	12	7	7	11	15	11	9	2	1	20	1	23	16	17	32	5	8	9	16	33	9	2
G39	14	10	11	24	17	22	11	12	4	10	11	5	11	7	10	13	2	1	19	7	14	29	13	33	10	12	12	26	11	5	1
G40	15	10	13	12	12	13	13	15	5	13	11	8	11	14	15	9	1	1	22	1	27	30	14	37	7	7	3	13	16	5	9
G41	10	8	24	12	12	19	22	16	10	14	9	9	6	12	15	8	7	3	23	1	18	24	19	40	5	4	1	12	22	5	3
G42	12	12	22	9	4	11	6	12	4	14	6	8	11	8	11	16	3	2	23	1	25	25	14	38	11	10	4	15	30	5	1
G43	3	5	15	8	2	20	7	18	2	12	15	9	11	13	5	11	6	7	14	4	20	16	14	37	11	13	13	9	30	4	3
G44	10	6	11	9	8	11	7	10	7	11	11	13	5	10	7	17	3	6	15	3	19	26	17	34	10	14	17	15	14	3	2
G45	6	5	17	3	7	11	16	9	12	12	12	3	10	11	12	10	5	2	24	1	25	24	16	26	12	7	6	12	25	5	6
G46	10	10	17	7	11	16	5	11	12	7	10	11	10	7	17	9	3	3	22	0	19	13	8	41	8	5	3	15	27	5	3
G47	8	7	15	6	9	15	8	12	4	7	11	8	10	11	11	15	6	4	16	5	19	25	11	42	15	19	11	11	33	5	2
G48	9	9	17	5	14	15	10	11	7	11	7	13	8	11	11	3	4	1	18	3	22	25	19	37	8	6	3	13	27	5	4
G49	14	11	18	6	13	12	17	8	8	11	12	8	9	9	13	12	3	2	15	5	18	18	19	39	7	10	4	16	23	4	3
G50	11	10	22	13	12	12	21	13	7	13	11	3	10	12	15	5	6	0	24	3	17	23	12	30	9	5	4	9	18	5	5
G51	11	10	10	9	11	11	3	14	9	9	7	11	7	11	9	16	7	6	23	9	22	23	14	32	10	19	15	17	32	5	6
G52	17	10	9	5	10	16	7	17	9	12	9	10	10	10	3	12	4	6	17	1	19	19	3	44	7	13	12	11	40	5	1
G53	13	10	15	7	17	10	10	10	7	11	6	13	11	5	6	17	3	3	12	3	20	28	13	43	11	21	21	5	20	3	5	1
G54	5	9	14	17	15	14	15	11	12	15	11	14	10	20	5	22	3	7	7	3	22	19	26	46	16	20	18	20	34	3	8

TABLE H-2

RAW SCORES
TORONTO INSTITUTE OF LINGUISTICS SUBJECTS

	16 PF Scales															MMPI SCALES										EXP
ID	A	B	C	E	F	G	H	I	L	M	N	O	Q	Q	Q	Q	L	F	K	1	2	3	4	5	6	7	8	9	10	E
34		TIL																												
T01	3	10	10	6	13	19	13	12	11	13	12	12	10	13	12	13	4	3	15	0	18	18	22	35	7	10	9	16	39	46
T02	12	7	15	4	11	15	14	13	3	10	10	6	5	10	13	7	6	6	22	7	21	27	11	35	8	4	4	10	19	52
T03	13	9	16	15	17	11	21	11	4	13	8	8	15	4	13	9	4	4	26	3	16	24	17	36	16	2	4	11	16	58
T04	7	6	22	5	10	16	12	13	4	6	13	8	6	8	16	11	8	4	25	1	10	25	14	38	12	3	2	17	26	54
T05	8	9	11	8	18	8	8	12	2	15	8	20	9	13	8	13	4	1	14	2	23	14	12	39	4	11	6	20	31	42
T06	14	6	9	5	16	11	10	10	9	10	10	17	6	6	9	16	6	2	19	3	26	18	13	43	10	15	6	12	30	48
T07	10	6	16	6	11	14	18	14	2	7	7	6	6	13	11	10	6	3	23	0	21	22	15	39	5	4	3	9	27	54
T08	15	11	15	12	10	14	12	8	2	12	16	10	11	9	8	13	5	3	22	2	21	21	12	37	9	9	3	12	15	52
T09	16	8	22	12	18	13	17	11	10	7	6	4	10	9	14	9	11	1	25	0	19	21	13	31	10	6	2	15	22	56
T10	11	12	16	7	17	15	12	11	16	11	9	12	12	8	11	14	2	1	24	4	23	18	11	40	4	11	10	10	42	48
T11	11	6	20	10	12	16	17	9	7	10	7	7	9	6	13	7	6	1	25	3	17	22	17	36	10	6	5	20	17	55
T12	44	9	15	7	9	10	13	11	8	14	10	13	5	13	12	16	3	1	14	6	21	20	17	43	8	22	20	18	34	47
T13	12	8	16	5	16	20	10	13	4	9	12	10	7	11	13	12	6	3	22	1	18	20	10	36	10	4	6	9	34	55
T14	10	7	12	12	14	12	11	11	3	9	10	5	6	12	12	12	2	2	17	1	19	23	17	39	12	7	4	10	24	53
T15	15	7	17	11	14	19	17	5	4	11	11	7	4	8	12	6	7	2	23	1	16	24	10	39	9	3	1	13	19	57
T16	6	9	14	8	12	14	13	13	3	14	8	7	8	9	15	5	4	0	19	3	18	24	15	36	11	3	4	15	21	51
T17	16	10	19	6	14	17	17	13	4	11	16	8	7	9	14	6	5	0	26	1	16	24	11	36	8	4	2	12	19	53
T18	14	9	10	2	13	17	8	17	6	13	9	15	12	12	12	14	3	1	18	5	18	17	12	38	10	11	3	11	38	49
T19	10	11	18	6	9	11	13	7	12	14	10	6	14	9	8	5	5	1	22	5	23	20	17	37	7	6	5	10	29	49
T20	16	9	17	15	12	20	23	10	4	10	9	5	14	6	13	3	12	6	19	1	16	21	13	35	8	4	4	7	17	53
T21	6	12	13	7	12	13	5	9	2	17	7	6	7	11	11	8	6	1	19	5	20	24	11	40	9	10	5	10	33	53
T22	12	9	20	10	17	15	13	14	8	13	15	11	6	5	13	9	9	5	25	8	19	28	13	32	10	6	1	15	14	56
T23	14	9	23	15	21	10	18	12	8	19	12	4	10	5	16	4	8	1	19	1	16	20	15	27	9	4	4	14	13	48
T24	12	7	18	10	17	11	1	6	13	6	15	12	7	10	8	13	6	4	17	2	21	20	17	43	11	13	5	16	32	57
T25	13	12	18	11	5	14	10	12	2	11	5	5	8	9	15	9	3	3	25	2	17	23	16	41	9	5	5	13	22	55
T26	10	9	19	4	15	16	15	6	3	11	10	6	11	5	13	12	4	1	22	3	18	21	11	36	5	7	1	16	20	45
T27	4	7	20	8	10	15	8	9	10	16	10	13	5	14	14	9	6	5	14	8	21	27	21	37	13	7	14	11	20	36	50
T28	9	7	17	8	18	14	14	13	0	7	12	10	7	12	8	8	2	4	16	5	19	22	16	39	11	10	11	19	22	49
T29	10	9	21	10	10	18	10	13	5	9	13	6	10	12	14	9	7	1	22	2	18	20	9	35	10	01	3	9	28	50
T30	15	9	20	14	16	15	15	12	6	10	10	10	12	14	14	8	8	1	21	7	26	12	31	36	8	6	6	15	20	55
T31	8	12	19	11	12	15	12	14	8	19	6	10	8	10	16	12	7	5	16	7	18	21	14	39	7	15	9	19	34	44
T32	14	9	22	13	18	13	12	15	4	14	6	7	7	8	12	11	3	1	22	3	18	24	12	37	11	8	8	11	18	55
T33	12	10	17	9	16	14	11	14	2	6	9	9	8	7	13	11	7	2	23	2	21	23	12	32	11	4	3	10	21	54
T34	18	9	15	13	23	19	19	14	6	9	11	9	9	5	10	12	3	5	14	2	14	22	16	44	10	15	9	12	26	47

TABLE H-3

RAW SCORES
NURSE SUBJECTS

	16 PF SCALES															MMPI SCALES											EXP
	A	B	C	E	F	G	H	I	L	M	N	O	Q	Q	Q	Q	L	F	K	1	2	3	4	5	6	7	8	9	0	E
N01	9	9	21	10	18	12	6	7	8	9	6	12	11	11	13	10	4	5	20	7	19	25	12	26	9	7	6	19	29	4
N02	12	10	13	13	21	11	5	8	13	8	12	9	10	7	10	21	2	6	11	3	17	17	10	36	13	19	13	21	9	14	2
N03	13	6	19	10	9	15	11	15	6	15	12	6	13	13	15	10	11	9	2	17	2	17	22	14	9	11	2	7	3	16	29	8
N04	14	5	12	3	18	14	11	13	5	11	7	10	5	7	10	11	4	2	16	6	17	27	10	35	8	18	9	14	31	14
N05	12	8	13	9	12	13	8	11	8	14	10	14	6	9	13	15	2	1	13	3	24	19	17	48	13	18	11	17	31	25
N06	14	8	19	8	14	10	4	16	5	12	8	10	6	13	9	8	2	7	11	4	19	14	12	25	13	17	2	16	39	14
N07	13	9	16	12	11	18	8	11	10	16	10	12	7	11	6	17	4	4	17	9	27	23	17	37	11	21	12	13	31	37
N08	12	10	17	9	20	17	17	10	5	12	9	8	12	8	11	10	5	2	25	1	17	23	15	35	10	2	2	11	12	27
N09	14	9	20	16	18	14	24	8	2	13	16	11	21	10	12	2	4	1	24	1	15	21	13	31	9	0	1	12	19	47
N10	15	8	17	7	15	10	9	10	6	16	8	6	9	14	13	8	1	4	10	8	12	21	15	32	9	15	13	16	31	21
N11	13	9	10	19	26	18	21	10	5	9	12	9	5	5	10	15	4	1	16	5	16	20	13	42	10	13	6	22	13	42
N12	10	10	14	16	11	13	14	15	9	11	11	9	12	13	8	21	3	2	19	4	15	21	10	35	7	12	7	9	36	39
N13	12	7	14	11	16	14	15	10	9	16	8	9	10	13	9	15	2	1	12	2	22	20	13	44	9	18	18	19	20	27
N14	8	9	19	20	19	18	23	6	7	16	8	6	12	12	14	20	1	2	16	3	15	19	14	42	12	7	7	19	19	41
N15	13	8	12	22	12	8	12	11	12	13	10	14	11	12	8	23	11	11	12	17	21	24	32	61	21	9	23	33	33	53
N16	15	8	16	8	10	14	7	13	5	11	8	15	8	9	8	15	3	3	10	4	18	16	13	40	9	13	6	16	36	48
N17	11	10	8	8	10	11	21	21	7	15	13	16	9	17	9	23	8	7	9	3	34	15	18	34	16	20	16	12	54	29
N18	9	7	13	21	20	8	17	10	14	20	7	12	11	10	7	19	9	4	16	11	13	25	15	33	11	19	16	19	24	23	29
N19	14	10	17	9	14	16	10	8	12	11	11	10	9	10	15	2	1	13	6	13	19	11	40	13	2	21	3	18	16	45
N20	4	10	20	8	15	11	9	8	5	11	15	9	10	13	10	13	6	4	13	1	12	12	12	41	8	7	4	10	36	40
N21	12	7	11	15	15	5	7	16	11	15	4	13	11	11	3	20	0	4	7	6	18	15	19	46	7	16	21	21	41	27
N22	15	7	24	9	19	15	13	10	1	8	13	4	10	9	10	6	5	0	19	5	23	22	14	38	13	9	6	11	22	44
N23	13	10	17	5	15	9	3	17	7	13	10	14	8	13	4	13	3	5	22	4	25	24	16	46	11	17	16	13	41	48
N24	6	8	13	16	14	12	11	6	8	18	8	16	9	16	4	22	4	15	13	11	20	27	21	40	11	13	11	16	28	42
N25	14	11	8	11	21	13	14	14	11	14	9	13	7	16	10	19	6	10	4	5	20	17	15	46	7	24	3	12	53	20	21
N26	12	9	20	13	11	17	13	10	6	11	13	10	7	17	15	11	6	3	16	4	20	18	11	36	7	9	5	13	28	44
N27	8	7	13	11	15	8	12	15	10	20	5	13	10	12	3	20	0	5	13	6	21	21	15	41	6	14	20	13	45	53
N28	12	11	15	12	22	17	18	6	7	11	9	8	11	11	12	12	2	1	13	8	18	25	15	46	13	16	7	21	17	39

TABLE H-4

RAW SCORES
SOCIAL WORKER SUBJECTS

	16 PF SCALES															MMPI SCALES										EXP
ID	A	B	C	E	F	G	H	I	L	M	N	O	Q	Q	Q	Q	L	F	K	1	2	3	4	5	6	7	8	9	10	E
30	SOCIAL WORKERS																													
S01	12	9	18	10	17	15	10	15		5	12	10	7	14	11	12	2	12	2	11	5	21	14	3	10	7	4	20	3	54
S02		8	11	14	17	22	7	24	11		9	16	3	8	13	14	7	12	3	5	17	6	23	27	22	3	5	4	9	9	19	20	39
S03	13	10	12	11	15	9	18	11		5	14	11	3	11	13	13	8	6	4	17	4	17	26	10	4	5	11	7	6	18	19	39
S04	13	4	14	14	20	10	15	13		7	19	11	7	15	9	12	11	2	4	19	1	14	21	17	3	4	9	6	6	18	12	49
S05	12	8	11	19	11	9	5	16		7	12	13	15	9	15	10	19	4	3	16	3	20	21	15	3	7	10	10	10	16	35	46
S06	13	10	16	21	21	6	22	12		8	16	6	12	11	12	10	15	0	6	10	10	19	22	12	0	4	2	617	16	26	15	31
S07	10	11	11	12	19	11	13	12		6	15	14	10	15	7	13	20	3	3	12	6	20	19	14	4	9	13	16	20	18	29	35
S08	10	10	21	14	18	15	12	10		4	11	10	7	9	8	8	12	4	2	19	1	16	19	15	3	9	8	5	3	13	27	47
S09	13	10	13	20	16	6	23	15		3	14	11	4	11	12	7	5	4	4	22	2	19	23	12	3	7	9	2	1	12	10	40
S10	13	10	12	18	13	13	12	14		8	16	8	10	7	16	9	11	21	22	0	3	15	20	15	4	0	8	8	17	19	22	45
S11	11	10	15	14	18	11	12	12		11	15	8	13	11	10	7	11	3	11	4	4	28	21	20	3	8	11	2	11	6	25	35
S12	11		9	16	14	14		21	4	14		5	12		6	5	16	16	8	5	6	6	22		6	20	24	13	37		9	2	7	14	20	39
S13		4	12		9	11	12		8		4		9	13	21	10	15	11	17		7	18	3	11		6		9	33	23	21	37	10	31	24	20	54	20
S14		8		8	9	13	13	10		7	12		4	11		6	11		9	12		7	17	2		4	12		6	26	24	15	41		9	21	21	29	33
S15		8	11	13	18	16	12	14	13	14		6		9		8	10	15		8	13		1		5	16	12	21	24	14	14		6	10		6	16	27	43
S16	11		8	11	14	18	11	12	14		5	16		5		5	8	13	14	11		4	21	7		3	22	22	14	42		9		6	21	52	03	9
S17	13		9	19	17	14		8	14		8	11	19		6	8	12		9	11	21		1		4	13		6	22	22	21	74	1	.7	15		6	21	27	38
S18		7	8	14		6	14	10	13	16		8	12	12		7	9	10		8	12		7		5	17		4	22	20	11	45		9	20		8	20	35	42
S19		5	12	13	16	23	10	14		8		8	11	13	10	14	17		8	10		3		7		8		3	16	18	15	38		5	13	13	25	27	34	
S20	11		8	18	16	21	15	13	17		6	17	11		7	12	17		9		9		6		7	19		7	20	20	15	47	12	10	20	26	43		
S21	15	11	11	16	20	11	20	11		8	12	13		5	12		6	10		1		4	16		3	12	25	20	45	10		7		9	17	15	48		
S22	10		6	14	10	18	14	10		3	12		6		9		9	8	13		3		3	15		11	7	18		9	38		7	11		6	11	27	46	
S23	14	10	15		9	17	12	21		9		3	14		8		5	16	7	13		4		1		6	23		3	18	23	14	35		8		4		4	13	40
S24		9		7	15	12	14		9	10	12		5	15	12	12	11	15		7	10		7		3	20		8	23	33	19	45	14	11		4		13	23	43
S25	13		9	15	12	22	21	11	10	12		6	15	10		8		9	10	12		5		3	14		41	41	3		8	38		3		6		9	17	22	50
S26	11		8	13	10		6		6		11	3		8	18	10	16		9	16		6	21		2		9		5		53	8	14	24	40	17	32	37	61	22	4
S27	12	10	16		7	13	12		8	14	11	19	12	11		7	11	10	16		5		6	15		5		9	22	24	16	43	14	13		8		16	37	40
S28	12		9	17	14	20	10	18	14		3		13		7		11	10		9		8		4		1	21		1		44		7		1		3	15	11	42
S29	10		6	15		6	14		4		9	15		8	15		9	11	14	19		9		9		3		6	20		02	31	8	15	44	11		7		7	12	31	40
S30	15	10	16	19	20		8	17	10		5	14	11		7	12	12		9	14		3		3	17		21	32	11	6	38	13	11	12	23	12	37		

TABLE H-5

RAW SCORES
WELFARE RECIPIENT SUBJECTS

	16 PF SCALES															MMPI SCALES											EXP
	A	B	C	E	F	G	H	I	L	M	N	O	Q	Q	Q	Q	L	F	K	1	2	3	4	5	6	7	8	9	0	E
WC01	15	8	13	5	18	14	8	10	11	10	17	15	9	10	10	11	4	3	17	5	17	24	19	34	8	7	21	42	28	40
WC02	10	2	12	10	10	15	11	11	6	8	14	15	5	7	14	13	6	4	13	5	23	21	17	39	7	21	7	13	32	34
WC03	13	6	17	10	15	13	15	11	10	14	12	11	9	9	14	11	7	4	13	4	20	14	14	28	11	12	13	11	34	31
WC04	10	7	17	10	18	8	14	9	8	13	11	9	9	16	8	6	3	8	12	2	22	13	21	24	7	14	12	15	30	24
WC05	12	8	20	9	10	16	22	7	7	14	14	2	13	14	16	6	8	7	18	8	16	19	24	39	11	10	15	22	15	42
WC06	11	7	12	10	13	11	11	9	14	13	10	15	4	12	11	24	5	8	7	5	27	13	25	41	8	22	13	13	44	22
WC07	12	6	13	8	18	16	7	14	11	3	17	11	9	7	7	13	1	3	9	5	27	19	19	32	6	14	12	18	22	23
WC08	16	6	9	14	12	12	12	10	12	9	13	10	17	4	14	11	5	4	12	7	12	19	16	18	36	13	28	32	27	38	19
WC09	12	9	12	11	9	14	14	9	13	11	11	13	7	11	10	15	8	6	10	12	27	18	19	34	10	13	13	21	34	30
WC10	9	7	20	11	8	14	14	18	4	15	7	9	10	10	11	10	6	10	19	7	29	29	22	39	12	22	22	23	37	38
WC11	11	8	14	14	12	19	10	13	9	13	13	13	5	7	12	11	3	4	16	4	18	18	25	36	7	10	13	20	22	40
WC12	14	9	15	12	16	19	14	11	4	13	15	13	11	9	16	6	2	0	16	1	21	18	13	44	7	9	3	15	19	37
WC13	13	5	16	10	11	17	17	9	6	12	11	12	8	8	15	8	9	8	23	7	27	31	16	35	8	8	7	14	19	40
WC14	8	4	15	9	16	11	17	12	9	11	12	13	11	14	8	17	6	2	8	9	22	18	16	35	13	22	21	6	15	28	26
WC15	8	3	11	14	11	11	10	10	14	15	11	12	8	12	8	14	2	19	3	17	25	20	21	34	20	37	55	32	40	31	7
WC16	9	5	13	19	10	9	10	11	9	19	12	15	12	6	6	15	3	15	10	10	27	19	24	32	14	23	36	21	43	21	1
WC17	12	4	8	13	23	10	22	13	15	19	10	12	13	6	15	22	4	9	10	3	19	16	23	39	16	19	25	30	31	72	3
WC18	19	10	12	11	14	14	20	13	14	12	9	10	10	7	11	13	3	8	15	3	22	27	21	32	10	3	9	16	13	33	8
WC19	8	5	9	6	6	18	8	9	4	13	14	13	8	10	12	9	7	5	13	7	24	22	20	39	3	14	8	11	39	36	1
WC20	11	3	21	9	21	5	19	12	21	3	13	9	11	11	16	4	10	0	20	1	27	19	13	29	7	13	3	8	31	41	1
WC21	11	5	9	12	17	11	13	11	7	8	6	16	11	8	13	20	2	9	5	10	24	20	26	37	14	29	23	22	35	17	4
WC22	14	8	11	12	16	12	13	13	11	14	13	13	13	6	11	19	3	9	3	8	16	15	20	40	9	13	19	19	27	21	1
WC23	9	7	14	10	8	12	12	10	9	14	14	13	7	16	12	13	7	4	10	8	24	18	18	36	12	21	21	21	39	22	1
WC24	8	6	16	11	12	16	8	14	12	16	5	15	8	13	13	17	3	5	11	7	20	21	16	44	11	19	13	19	32	27	1
WC25	13	4	8	10	18	11	11	11	8	11	15	11	15	4	8	11	8	2	13	8	25	34	32	35	23	19	30	41	24	37	16

APPENDIX I

ROTATED FACTOR LOADINGS

TABLE I-1

ROTATED FACTOR LOADINGS
TOTAL GROUPS (N=171)

VARIABLE 1						
.10097	.28804	.05007	.66719	-.05457	.23567	-.13980
VARIABLE 2						
.30515	.21566	.32861	-.09235	.11070	-.20022	.37432
VARIABLE 3						
.56184	.22406	-.35131	-.16141	-.12103	-.17154	-.06825
VARIABLE 4						
-.29433	.73370	.15438	-.00976	-.00880	-.01989	.01131
VARIABLE 5						
-.04354	.65154	.25975	.34052	.09729	-.13097	.15617
VARIABLE 6						
.28909	-.22550	-.57699	.29056	-.01851	-.21391	.24787
VARIABLE 7						
.09068	.74838	-.15010	.25727	-.18264	-.14736	-.08727
VARIABLE 8						
.19764	-.15455	.14698	-.03017	.00888	.71075	.16298
VARIABLE 9						
-.62284	-.06464	.13231	-.07574	.13496	-.14587	.09554
VARIABLE 10						
-.40436	.16105	.13041	-.44196	-.24461	-.04989	.12928
VARIABLE 11						
-.00909	.01177	-.70798	-.03067	.28629	.06623	-.08837
VARIABLE 12						
-.56301	-.47403	.16755	.10715	.11516	.00349	.14478
VARIABLE 13						
.04704	.66191	.14722	-.27516	.17315	.13977	-.03520
VARIABLE 14						
-.08160	-.16801	.08761	-.73421	.04401	.14551	-.01280
VARIABLE 15						
.37907	-.13746	-.56081	.18043	-.16057	-.20118	.03415
VARIABLE 16						
-.61326	-.23295	.37778	.01525	-.11466	.00796	.30205
VARIABLE 17						
.37981	-.18107	-.48687	-.05105	-.28092	.07985	-.18446
VARIABLE 18						
-.68524	-.03176	.01305	-.16027	-.09182	.13970	-.31141
VARIABLE 19						
.81140	.07943	-.00900	.16025	-.35964	.02809	-.03700
VARIABLE 20						
-.64050	-.12930	.04757	-.10922	-.46353	-.05277	-.11721
VARIABLE 21						
-.45749	-.49751	-.02383	-.26436	-.27769	.02242	-.13290
VARIABLE 22						
.18407	.05152	.04156	.05109	-.84931	.07887	-.04453
VARIABLE 23						
-.71338	.14896	-.01971	-.04273	-.17959	-.08442	-.18008
VARIABLE 24						
-.00067	-.01371	.01465	-.10169	.02709	.23800	.84067
VARIABLE 25						
-.44548	.07138	-.28492	.04694	-.28248	.50578	.06406
VARIABLE 26						
-.86852	-.27676	.03564	-.08869	.02989	.07703	.04901
VARIABLE 27						
-.87269	-.07542	.06396	-.10409	.03587	.16536	-.11597
VARIABLE 28						
-.69844	.35174	.09219	.01897	-.07838	-.13092	.17925
VARIABLE 29						
-.44905	-.68604	.07098	-.33590	.23337	.13743	-.02614
VARIABLE 30						
.81448	-.13821	-.04413	.17259	-.19477	.05141	.10900

TABLE I-2

ROTATED FACTOR LOADINGS
GIVING-ORIENTED SAMPLES (N=88)

VARIABLE 1							
-.04193	.77404	-.21755	-.02008	.09076	-.10609	-.02082	.04873
VARIABLE 2							
-.08126	.17110	.09010	.28577	.31350	.17032	-.57049	.15269
VARIABLE 3							
-.62090	-.04049	.08132	.19999	-.32665	-.13325	-.19070	-.10137
VARIABLE 4							
.00940	.57790	.31140	-.20847	-.27593	-.07269	-.46170	-.05272
VARIABLE 5							
-.03918	.69374	.27213	.00796	.07814	.22560	-.16098	-.02687
VARIABLE 6							
-.04885	-.00120	-.30537	.31410	-.57901	.00709	.00280	.14630
VARIABLE 7							
-.20273	.71284	.26734	-.02481	-.25088	-.01178	-.14305	-.18905
VARIABLE 8							
-.01113	-.09125	-.15652	-.11711	-.16926	-.15179	-.32589	.65698
VARIABLE 9							
.52515	.09198	.25011	.26729	-.05524	-.02686	-.16507	-.04543
VARIABLE 10							
.11046	-.14095	.50122	.17235	.13199	-.49260	-.11398	.00894
VARIABLE 11							
-.07613	-.09744	.02695	-.12692	-.68033	.11389	.20197	.03020
VARIABLE 12							
.63117	.02171	.06350	.00903	.16860	.00761	.26056	.36320
VARIABLE 13							
.05122	.18139	-.07962	-.10738	.10644	.08139	-.73312	-.04235
VARIABLE 14							
.11319	-.55635	.09060	-.11195	-.24515	-.14290	.05490	.07512
VARIABLE 15							
-.55574	-.14035	-.09505	.42064	-.10453	-.10457	-.01914	-.01589
VARIABLE 16							
.01774	-.11622	.19184	-.21881	.37736	.07743	.09868	.19454
VARIABLE 17							
-.30737	.26034	-.31190	.19054	-.25606	-.54395	.09380	-.05503
VARIABLE 18							
.64540	-.08565	-.16873	-.04234	-.26772	-.28175	-.05494	-.35569
VARIABLE 19							
-.79929	.28102	-.20925	.05039	.08001	-.10934	.11201	-.03551
VARIABLE 20							
.25796	-.31369	.18222	-.11785	.21123	-.66027	.03851	-.05603
VARIABLE 21							
.41769	-.25461	-.01113	.13014	.17834	-.50977	.36472	.09975
VARIABLE 22							
-.35215	.11472	.02023	-.39350	.00609	-.00994	.18457	-.02688
VARIABLE 23							
.34711	.13651	.69990	-.12650	-.07120	-.05310	.05125	-.15759
VARIABLE 24							
.16966	-.11266	-.04327	.02581	.00477	.09254	.14552	.75566
VARIABLE 25							
.11662	-.00118	-.00835	-.80279	-.00485	-.03622	-.06490	.04743
VARIABLE 26							
.80597	-.21916	.23534	-.10600	.13339	-.19074	.10044	.08115
VARIABLE 27							
.78172	-.23384	.22104	-.18931	.01182	-.13140	-.06587	-.12767
VARIABLE 28							
.24481	.13812	.74400	.02009	.18203	.01368	.06395	-.06497
VARIABLE 29							
.61173	-.61902	-.22315	.15618	.01160	-.06302	.00230	.16080
VARIABLE 30							
-.66315	.10509	-.37653	-.23105	.03014	-.08049	.09601	-.17580

APPENDIX J

INTERCORRELATIONS OF ALL VARIABLES FOR THE GIVING-ORIENTED SAMPLES (N=88)

16 PF

A	100															
B	11	100														
C	-02	05	100													
E	18	18	11	100												
F	23	28	05	50	100											
G	-16	-04	21	-06	-15	100										
H	31	06	16	59	49	07	100									
I	-02	08	-04	01	-11	08	-10	100								
L	02	08	-35	13	05	-04	05	-01	100							
M	-02	03	02	04	-02	-20	-06	-05	20	100						
N	-05	-19	16	12	-13	26	-01	02	-09	-11	100					
O	01	-07	-53	-11	00	-10	-34	05	33	16	-08	100				
Q1	-02	31	01	30	20	-02	19	03	07	-02	-12	-10	100			
Q2	-17	-19	-04	-14	-35	-02	-35	11	00	13	09	12	-22	100		
Q3	-03	-05	40	-19	-14	23	07	05	-20	-05	-04	-34	-12	-08	100	
Q4	00	00	-51	-09	-12	-26	-24	02	33	15	-24	51	02	12	-51	100

MMPI

L	05	-14	34	08	-08	20	19	02	-15	00	07	-19	-01	-03	29	-44	100											
F	-05	-18	-20	04	-12	02	-12	-05	22	09	03	22	-09	21	-24	16	-02	100										
K	31	08	44	-02	09	12	28	01	-35	-19	03	-46	-03	-24	39	-49	45	-47	100									
Hs	-08	-12	-17	-11	-26	-21	-25	01	05	39	-06	18	-09	17	-07	24	-07	32	-25	100								
D	-11	-20	-27	-33	-35	-13	-39	-01	16	28	-04	38	-24	21	-20	33	10	25	-25	51	100							
Hy	04	-20	17	14	-07	-07	17	01	-24	05	00	-19	-13	03	04	-14	31	05	31	36	08	100						
Pd	02	-05	-15	25	23	-26	27	-14	30	29	-02	13	01	03	-34	29	-24	19	-35	14	20	01	100					
Mf	06	02	-22	-17	-10	12	-27	23	-02	02	-02	32	-09	09	-06	21	-14	-08	-23	-01	18	-13	-09	100				
Pa	-06	-23	-18	20	-03	-18	-03	08	-02	-01	05	03	14	-02	-23	23	-09	10	-12	09	-02	15	11	04	100			
Pt	05	-14	-49	-10	-17	-24	-33	-03	39	34	-07	50	-08	16	-46	65	-30	45	-73	50	50	-15	40	29	19	100		
Sc	04	-11	-45	04	-15	-24	-20	00	38	19	-09	37	-03	27	-42	51	-32	56	-72	42	36	-16	41	09	20	80	100	
Ma	03	08	-19	23	21	-25	17	-19	31	26	-17	26	01	-06	-19	35	-22	01	-23	22	06	-08	54	-04	05	36	38	100
Si	-25	-19	-35	-48	-49	07	-63	19	26	14	-06	38	-08	35	-16	40	-23	39	-61	30	48	-30	00	32	-05	59	52	-13	100
Ex	03	-07	39	02	00	14	07	-09	-35	-25	00	-45	-07	-12	22	-46	35	-29	71	-21	-27	37	-39	-19	11	-58	-51	-38	-41	100

	A	B	C	E	F	G	H	I	L	M	N	O	Q1	Q2	Q3	Q4	L	F	K	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma	Si	Ex
	16 PF																MMPI													

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