CHAPTER V

DISCUSSION

Vocational choice as field of enquiry in psychology, has received the attention of theorists and researchers for almost a century, and has been driven by a very practical issue: namely, "How can individuals select meaningful work in which they can become productive members of a pluralistic and free society"? The theories vary in terms of descriptive, explanatory, predictive and heuristic emphasis. For example, the trait and factor theories, emphasize prediction, decision theories are heuristic, self theories and social theories are descriptive and explanatory, while cognitive information processing theory seeks to be comprehensive but is still explanatory and heuristic. All theories are useful and provide essential perspectives for practitioners of the science and craft of career counseling. Some of the emerging issues in the field of vocational choice include the expanding of a theoretical and research base on the influences of gender, culture, ethnicity and physical disabilities on vocational decision making, job satisfaction and job performance. Moreover the role of mental health in career choice, the optimal use of technology, and ascertaining how knowledge structures, cognitive skills and attitudes can be developed through education and career guidance are additional important research thrusts leading into the next century. Expectations are that the field will continue to evolve as the ability to make sound vocational choices become an increasingly important survival skill in rapidly changing societies - societies wrought by powerful global and national forces moving towards greater pluralism in the labor force, a peacetime market economy, an expanding population growth, and an ever greater use of technology in production of goods and services (Peterson, 1994)

Career Development: The Indian Context

Unemployment has been a spectre that has haunted the Indian Economy for the last four decades. In absolute terms, a total of 400,000 additional jobs were created in 1993, as against the requirement for about 65,00,000 additional jobs (43rd National Sample Survey, Government of India, 1992). Unemployment levels are higher amongst graduates (BA,
than amongst those who opt for vocational training (certificate holders in specific skills) soon after high school (Arulmani, 1996).

The last couple of years have seen sweeping economic changes in the country. This has led to a transformation of occupational opportunities. The industrial sector faces acute manpower shortage, especially the information technology sector and the demand for vocationally trained workers is growing at geometric proportion. Yet the number of individuals opting for vocational training are few and these students largely come from lower income groups. (Ray, 1995).

The background upon which career choices are made therefore is such that strong attitudinal variables influence the career decision making process. Recent socio-economic reforms have however widened the scope of occupational choices and the trend is toward a marked increase in the demand for skilled personnel.

The Indian adolescent usually enters the final year of high school (class 10) between the age of 14 to 15 years. Completion of class 10, brings formal school education to an end signalling the beginning of specialization. It is observed that three groups emerge on successful completion of high school in India that are distinguished by their career orientation to the future and by the emerging career developmental tasks.

**Group 1**: comprises of individuals who wish to go on for further education and is expected to make a choice between three pre-specified subject streams, namely the science, commerce and humanities. The career developmental task before the 14 year old, in this group therefore is to develop reasonable clarity about the career family he or she is moving toward.

**Group 2**: has individuals who choose to undergo vocationally oriented certificate/diploma course. Here again, an even higher degree of career choice crystallization is expected.
Group 3: consists of those who cannot afford to remain financially unproductive any longer. They drop out of formal education and enter informal “apprenticeships” as unskilled workers. Given their unskilled status, these youth are at high risk for remaining unskilled and for later unemployment (Arulmani, 1996).

The beginning of specializations, carry the connotations of making a career preference and in turn transforming this preference into a commitment to a particular career path. As per developmental theories, decisions such as these are expected in the period of transition, when the individual is at least 17 years of age. In reality, the task associated with the stages of interest, capabilities, value and transition occur almost simultaneously, nearly three years earlier than expected. It may well be, that the individual is not vocationally mature enough to deal with this career developmental task and perhaps is unaware of the implications and ramifications of choices made.

The implications then that this transitory phase of career development has for a career psychologist in India immense. Whether the contributions made, are one of building theory or that of application in terms of counseling, it is the responsibility of a professional (in this case the career psychologist) to preserve, utilize and channelize the human resource of a country like India optimally. In the wake of India being declared a nuclear state (May 11, 1998) by the Government of India, it becomes even more incumbent upon us to support thus euphoria with true progress.

In order to understand the psychological framework from which an average Indian high school student, ventures to put his first step into the world of career paths; the present study attempts to study the effects of personality and some psycho-social correlates and the influence they exercise upon career preference.
SECTION I

I. Career Preference and Personality

A person's type is the product of conscious orientation to life: habitual, purposeful ways of using one's mind-habitual because they seem good and interesting and trustworthy. Of the sixteen specific types that result from the various combinations of the preferences, each is a product of its dominant process, extraverted or introverted as the case may be and modified by the nature of its auxilliary (the modification is especially marked in the introvert types, whose auxilliary is mainly responsible for their outer behavior).

The preference that seems to have the most influence on occupational choice, the SN Preference, determines in large part what will interest people. Sensing types are drawn to occupations that let them deal with a constant stream of facts, whereas Intuitives like situations in which they look for possibilities. The next most important preference is TF, which determines the kind of judgement that is easier and more agreeable to use. People who prefer Thinking are more skillful in handling matters that deal with inanimate objects, machinery, principles or theories none of which have any inconsistent and unpredictable feelings and all of which can be handled logically. Feeling types are better skilled in matters involving people, what they value, and how they can be persuaded or helped.

People who are completely open minded about occupations can benefit from looking at the kinds of work that appeal most to people with the same best-liked perceptive process and judging process. Each of the four combinations of perception and judgement tends to produce distinct interests, values, needs and skills.
In the present study career preference has a highly significant relationship with the personality type of the individual. Thus Hypotheses 1:1 has been supported. The trend of results indicate that majority of individuals in this sample are IST types and EST types. However among the IST types a greater proportion of individuals prefer the Judging attitude i.e., ISTJ, to the Perceiving attitude i.e., ISTP. Similarly among the EST types a greater proportion of individuals prefer the judging attitude i.e. ESTJ, to the perceiving attitude i.e. ESTP.

In terms of dominant and auxilliary processes, Extraverted Thinking Types with sensing as the auxilliary process i.e. ESTJs constitute the largest group in this sample. This is followed next only by Introverted Sensing Types with Thinking as the auxilliary process i.e. ISTJ. The third largest group are the Introverted Thinking Types with Sensing as the auxilliary process i.e. ISTP. The fourth largest group are the Extraverted Sensing supported by Thinking as the auxilliary process i.e. ESTP. The fifth largest group are the introverted sensing types supported by Feeling as the auxilliary process, i.e. ISFJs. These five Personality Types account for majority of the sample. The frequency of Intuitive and Feeling Types is relatively very less when compared to the Sensing and Thinking Types in this sample.

Before going into the details of why individuals with certain personality types prefer certain careers, a description of the frequently occurring types in this sample, will throw some light on why they opt for certain particular career preferences.

Extraverted Thinking Types, (E-TJ) are analytical and impersonal. They tend to be executives, legal, technical or interested in reform. They organize the facts and everything else within reach. They are decisive, logical, strong in reasoning power. They aim to govern their own conduct and other people's in accordance with thought out conclusions. They value truth in the form of fact, formula and method. Their emotional life is accidental in the sense that they suppress their feelings too much, that once in a way they have unexpected explosions of temper which consciously they would never "think" of committing. Social life for E-TJ is incidental.
Extraverted Thinkers with Sensing as the auxiliary process i.e. ESTJs solve problems by expertly applying and adopting past experience. They like work where they can achieve immediate, visible and tangible results. They have a natural bent for industry, production and construction. They enjoy administration and getting things organized and done. Executives of this type prefer to base plans and decisions on established facts and procedures; they do not listen to their own intuition, very much and may need an intuitive around to point out the value of new ideas (Myers and Myers, 1980).

Introverted Sensing Types are systematic painstaking and thorough. They carry responsibility especially well, but ISTJ generally like it better than ISFJ. They are hard-working individuals and the most practical of the Introvert Types. Outwardly they are matter of fact, inwardly entertained by extremely individual reactions to their sense impression. They are conspicuous, for patient and willing application to detail. They adopt excellently to routine. And they absorb and enjoy using a number of facts.

Introverted Sensing Types with Thinking as the auxiliary process i.e. ISTJ types emphasize logic, analysis and decisiveness. With enough Extraversion, ISTJs make able executives. They also make exhaustively thorough lawyers who take nothing for granted and thus catch many slips and oversights that others make. All contracts should be cleared by ISTJ; they will overlook nothing that is in it and assume nothing that is not. This is a fine type for accountants. It also appears to be ideal for dictating machine transcribers (Myers and Myers, 1980).

Introverted Sensing Types with Feeling as the auxiliary process is ISFJs emphasize loyalty, consideration and common welfare. This is a fine type for a family doctor. The use of feeling in contacts with patients, supplies the warmth and reassurance they crave, and the highly cultivated Sensing neglects no symptoms and is able to draw on an accurate and encyclopedic memory. This is also a fine type for nurses (Myers and Myers, 1980).
Introverted Thinking Types are analytical and impersonal, primarily interested in the underlying principles. They organize concepts and ideas (if INTP) or facts (if ISTP), but not people or situations, unless out of necessity. The decisiveness of the dominant Thinking usually shows only in intellectual matters. Such persons are quiet, reserved, detached and perhaps even aloof except with intimates. Inwardly they are absorbed in the current analysis or problem. They are inclined toward shyness, especially when young as the chief interest of Introverted Thinking are little help in small talk or social contacts.

Introverted Thinkers with Sensing as the auxiliary process i.e. ISTPs have a vested interest in practical and applied science, especially in the field of mechanics. Of all the processes, Sensing provides for the greatest understanding of visible and tangible properties of matter how it behaves and what you can and cannot do with it. People of this type are likely to be good with their hands, which is a genuine asset in practical application of scientific principles.

With non-technical interest, the ISTPs can use general principles to bring order out of confused data and meaning out of unorganized-organized facts. The capacity of Sensing to absorb fact and detail can be very useful to ISTPs who work in the field of economics, or as security analysts or as market and sales analysts in business and industry—in short dealing with statistics in any field.

Extraverted Sensing Types are realistic, matter of fact and practical. They are adaptable, usually easy going and very much at home in the world, tolerant of others and of themselves. Endowed with a great capacity for enjoying life and a zest for experience of all kinds. They are apt to learn most and best from experience, making a better showing in life than in school. Such persons are usually conservative, valuing custom and convention, and liking things as they are. And they are able to absorb an immense number of facts, like them, remember them and profit from them.
Extraverted Sensers with Thinking as auxiliary i.e. ESTPS make decision with Thinking rather than Feeling and therefore are more aware of the logical consequences of acts or decisions. Thinking gives ESTPs more grasp of underlying principles, helps with mathematics and theory and makes it easier for them to get tough when the situations call for toughness.

In dealing with mechanical and other concrete problems they are solid and practical and avoid complexity. In straightforward matters, their judgement is accurate and reliable. They tend to prefer action to conservation. The more directly a matter can be translated into action, the clearer and more effective they become. When they do sit around, it is in an attitude of friendly readiness to do almost any pleasurable thing (Myers and Myers, 1980).

In the present study, the first five occupational groups i.e. Engineering, Medical Health, Teaching and Welfare, Administrative and Clerical and, Sales and Business; require a greater amount of Sensing and Thinking processes; and involve professions that are very structured and suit the Sensing Types who are good at absorbing facts. Further, in these professions decisions based on Thinking rather than Feeling processes, are more often needed, except perhaps with the exception of Medical Health: Level 2 and Sales and Business: Level 2 and 3 which do require the feeling component.

The last five occupational groups i.e. Services, Literary, Artistic and Musical, Outdoor, and Protective rely greatly on Feeling and to some extent on Intuition Processes, both of which are found less frequently among individuals who comprise this sample.

Individual from all Personality Types are required for specific subdivisions within a given professional group. However composites of related occupations also, are likely to be more attractive to certain personality types than to others (Myers and McCaulley, 1985). The Vocational Expression Blank used in this study to assess career preference, gives us a composite of related occupations.
Individuals in the present sample have a greater loading (75.62%) on the ST preference (ESTJ, ISTJ, ISTP and ESTP), with one or the other being dominant or auxiliary processes. Hence decisions about careers, are very practical and based on factual information (Sensing Process); and also critical evaluation (Thinking Process) plays a key role. These practical decisions seem to have influenced the participants to opt for careers such as Engineering and Medical Health most frequently, as these two professional groups of occupations are based on factual information and require quick and crucial decision making (especially Medical Health occupations). Furthermore ESTJs, ISTJs, ISTPs and ESTPs respectively, have given a greater preference to Engineering careers than Medical Health careers.

Several reasons can be attributed to these findings. Firstly, Engineering and Medicine are considered to be the most prestigious careers in India. While the civil services are also considered prestigious entry into these services is limited because of the limited amount of seats available when compared to Engineering and Medicine. This piece of factual information, is one of the reasons the Sensing Types opt for these careers. Secondly another important factor that contributes to these Careers Preferences, is that both these careers are highly remunerative.

The higher frequency of individuals preferring ESTJ, ISTJ, ISTP and ESTP choosing Engineering more frequently than Medical Health can be explained by the fact that ESTJ have a natural bent for industry production and construction; ISTJs make able executives; ISTPs are interested in applied science and mechanics; and ESTPs have a grasp of mathematics and theory, and good at mechanical concrete problems which are at the core of Engineering as a subject.

Another reason for a greater frequency of individuals preferring Engineering to Medical Health, is that an engineering graduate has greater job opportunities than a medical graduate, on completion of graduation. A medical graduate has to do post graduation for a good job opportunity. Further, an Engineer gets paid very well these days, especially in the information technology industry, when a compared to a struggling doctor, who can become successful only after years of specialization. Another trend that might contribute to a greater frequency of individuals preferring
Engineering over Medical Health is that students want to pursue higher education abroad, and also work abroad, as it brings them remuneration in Dollars. While it is easy to get visas to go abroad for Engineers it is equally difficult for medical students or doctors to get visas to go abroad, because of the policies of the consulates of the respective countries, especially the United States of America. Keeping these facts in mind the ST type of individuals opt for Engineering which requires lesser number of years in terms of education, and gives back equally if not more in terms of remuneration when compared to doctors.

Another point to be noted is that such a large number of individuals with ST type of process opting for careers such as Medical Health, which generally attracts SF types. This is because the logical and practical STs prefer Medical Health not for its intrinsic quality of dealing with people, but because of its benefits in terms of being a prestigious and remunerative profession. Moreover the higher frequency of STs when compared to the SFs and NFs in the students preferring Medical Health, could be due to the fact that they are affected by cultural pressures and by the stage of type development which according to Myers and McCaulley (1985) play an important part in type development.

The other careers are not preferred so much except perhaps Teaching and Welfare, which is not such a prestigious or well paying career in comparison to Engineering and Medical Health. Thus individuals who opt for these careers are probably in it for job satisfaction.

Personality Types such as SF, NT and NF are spread across occupations. These processes are few and far between and show no specific pattern. Even among these group a preference for Engineering and Medical Health is seen, but this is considerably less when compared to ESTJ, ISTJ, ISTP and ESTP types.
Similar results are reported in the career listings in Appendix D of the MBTI manual (Myers and McCaulley, 1985). According to the career listings ESTJs, ISTJs, ISTPs and ESTP individuals are likely prefer Engineering careers more often than Medical careers.

Results relating personality type and career preferences have been reported by Laney (1949). He analyzed the type preferences separately for distribution of types within occupational groups. He found that the highest percentage of ST was found among Accountants (64%), the highest frequency of SFs was found among sales and customer relations (81%), the greatest number of NFs were found among creative writers (65%) and research scientists constituted the highest NT percentage (77%).

In a study on practising psychologists from a range of disciplines, Perry (1974) found that one third of experimental psychologists prefer Sensing and two-thirds preferred Intuition. Clinical psychologists were more likely to be concerned with possibilities (N) for people (F).

In another study relating type to career preference, Myers and Davis (1965) found more Introverts, Intuitives, Feeling Types (and to a lesser extent) Perceptive Types, among medical students than could be expected in a general college bound group of students in the 1950s. It was further reported that among high school graduates with all four predisposing preferences INFPs are at least four times likely to enter medical school as classmates with the four opposite preferences, i.e. ESTJs. The results in the present study have contradicted this finding. This can be due to fact that the sample is a general high school sample and not a specifically medical sample and secondly as pointed earlier due to the job market requirements and lucrattiveness of the job.

Results relating the MBTI types with career preferences have also been reported by Friedman and Slatt (1988), Kean, Mehlhoff and Sorensen (1988), Humes (1992) and Lowenthal (1994).
The career preference of the individual differs significantly with the EI Index of Personality Type. Hypothesis I: 2 has thus been supported. The trend of results indicate that at one extreme, introverts are found among those who prefer Administrative and Clerical: Level 2 careers; and at the other extreme are the Extraverts who prefer Services: Level 1 careers. The sample as a whole tends to be Introverted. This is in keeping with the cultural stereotype that Indians are more reserved when compared to Westerners.

While, Introverts and Extraverts are found among all professions, the nature of the job at hand regardless of its interest value is the part which decides whether the job requires an Introvert and Extrovert.

In work situations by nature, Extraverts like variety and action. They tend to be faster and dislike complicated procedures. They are often good at greeting people. Such persons are often impatient with long and slow jobs. They are interested in the results of their job, in getting it done and in how other people do it. Often they do not mind the interruption of answering the telephone. They frequently act quickly, sometimes without thinking. They like to have people around and usually communicate freely.

In contrast, in work situations, Introverts like quiet for concentration. They tend to be careful with details, dislike sweeping statements. They have trouble remembering names and faces. They tend not to mind working on one project for a long time without interruption. They are interested in the idea behind the job. They dislike telephone intrusions and interruptions. They like to think a lot before they act, sometimes without acting. They work contentedly alone and have some problems communicating.

As implied in the description of these types, it explains why Introverted individuals in this sample are more likely to prefer Administrative and Clerical work, while Extraverted individuals prefer Services which involve dealing with people actively.
Results similar to these, have been reported in a study related to careers by Furnham and Springfield (1993a). They found that Extraversion and Introversion seemed important correlates of management practices and climate for the Chinese group as when compared to the European group.

According to the career listings in Appendix D of the MBTI manual (Myers and McCaulley, 1985), which describe types of populations; Extraverts are more likely to be found (in decreasing order of preference) in certain specific professions when compared to Introverts. These professions are sales workers, artists and entertainers, personal service workers, religious workers, counselors, managers and administrators, food service workers, laborers, writers and journalists, clerical and kindred workers, health care therapists, farmers, health service workers, office machine operators, psychologists, teachers, private household workers, protective service workers and mechanics.

Introverts on the other hand are more likely to be found (in decreasing order of preference) among librarians, archivists and curators, computer specialists, doctors of medicine, scientists: life and physical, cleaning services, lawyers and judges, specialized: operatives, health technologists and technicians, craftworkers, miscellaneous operatives and factory workers, transport operatives, engineering and science technicians and social scientists.

In the present sample a majority of individuals are Introverts and have also preferred careers like Engineering and Medical Health with a very high frequency. This finding supports the career listings in Appendix D of the MBTI manual (Myers and McCaulley, 1985).

Hypothesis I:3, on the other hand has not been supported by the results, because Career Preference did not differ significantly with the SN Index of Personality Type.
These results can be attributed to the fact that majority of individuals in this student sample are Sensing Types (90.93%) and the Intuitives are in the minority (9.06%). Thus majority of the Sensing Types have chosen fact oriented professions like Engineering, Medical Health, Teaching and Welfare and Administrative and Clerical. Even among careers that require Intuition, such as Services, Artistic and Musical, and Literary, most individuals, though comparatively in less frequency when compared to those preferring Engineering and Medical Health, are Sensing Types. Moreover as the number of Intuitives are very few, in this sample, careers such as Services, Artistic and Musical are not frequently preferred.

This point is further reiterated by the description of Sensing Types and Intuitive Types in work situations. Sensing Types dislike new problems unless there are standard ways of doing them. They work more steadily, with a realistic idea of how long a job will take. They usually reach a conclusion step by step. Sensing Types are patient with routine details and are impatient when the details get complicated. Such individuals are not often inspired and rarely trust the inspiration when they are. They seldom make errors of fact and tend to be good at precise work.

Intuitive Types contrarily like solving new problems. They dislike doing the same thing repeatedly. They enjoy learning new skills more than using it. They work with bursts of energy powered by enthusiasm, with slack periods in between. They reach conclusions quickly. They are impatient with routine details and are patient with complicated situations. Intuitive Types follow their inspiration, good or bad. They frequently make errors of fact and dislike taking time for precision.

According to the career listings of Appendix D of the MBTI manual (Myers and McCaulley, 1985), Sensing Types are more likely to be (in decreasing order of preference) in certain specific type of occupations when compared to Intuitives. They prefer to be in farming, cleaning services, protective services, transport operatives, craftwork, miscellaneous operatives and factory work, military personnel, specialized operatives, personal service workers, office machine operators, health technologists and technicians,
managers and administrators, sales workers, nurses, engineering and science technicians, food service workers, librarians, archivists and curators, engineers and teachers. Intuitives when compared to Sensing Types are more likely (in decreasing order of preference) to be in the following professions namely psychologists, social scientists, writers and journalists, artists and entertainers, counselors, lawyers and judges, scientists: life and physical, computer specialists, doctors of medicine, health care therapists and religious workers.

As the SN index does not differ significantly with the careers preferred, Hypothesis 1: 3 has been rejected and an alternative null hypothesis is setup stating that "Career Preference of the individual does not differ significantly with the SN Index of Personality Type".

Career preference does not differ significantly with the TF index Personality Type. Thus Hypothesis 1: 4 has been rejected. Factors contributing to thus finding are that, firstly, majority of the sample comprise of Thinking Type individuals (81.56%), when compared to those who are Feeling Types (18.43%). Secondly occupations which require Feeling Types, also comprise of Thinking Types, though not in high frequencies. While this trend exits, however in some cases, it has been found that Feeling Types are more likely to choose Teaching and Welfare: Level 3 and Thinking Types are likely to prefer Medical Health: Level 3 careers. This finding is in keeping with theory that as professionals in Teaching and Welfare: Level 3 are more likely to be teachers in direct contact with people and require the feeling component. Where as Medical Health: Level 3 professionals tend to be technicians and therefore need to be Thinking Types. However this result is not statistically significant Hence a alternative null hypothesis has been set up stating that "Career Preference of the individuals does not differ significantly with the TF index of Personality Type".

Describing the TF types in work situations it appears that Thinking Types do not show emotion readily and are often uncomfortable dealing with people’s feelings. They may hunt people’s feelings without knowing it. They like analysis and putting things into logical order. They can get along without harmony. They tend to decide impersonally, sometimes paying
insufficient attention to people's wishes. Such persons need to be treated fairly. They are able to
reprimand people or fire them when necessary. They are more analytically oriented and respond
more easily to people's thoughts. And lastly they tend to be firm minded.

Feeling Types on the other hand tend to be very aware of other people and their feelings. They enjoy pleasing people, even in unimportant things. They prefer harmony and efficiency may be badly disturbed by office feuds. They often let decisions be influenced by their own or other people's personal likes and wishes. They need occasional praise. These types dislike telling people unpleasant things. They are more people oriented and respond more easily to people's values and tend to be sympathetic.

Referring to the career listings of Appendix D of the MBTI manual (Myers and McCaulley, 1985), which shows tables of occupations empirically attractive to EI, SN, TF and JP and to the sixteen MBTI types; it is evident that Thinking Types are definitely more attracted to certain occupations when compared to Feeling Types. The following career profiles (in decreasing order of preference) are more attractive to Thinking Types, namely farmers, computer specialists, scientists: life and physical, lawyers and judges, engineers, managers and administrators, protective services, military personal, engineering and science technicians, cleaning services, miscellaneous operatives and factory workers and laborers.

Contrastively Feeling Types are more likely to prefer the following career profiles (in decreasing order of preference) namely, private household workers, health service workers, office machine operators, librarians, archivists and curators, clerical and kindred workers, religious workers, food service workers, health care therapists, teachers, health technologists and technicians, writers and journalists, artists and entertainers, psychologists, social scientists, sales workers, and doctors of medicine.

Similar to the SN and TF indices of personality, the JP index also did not differ significantly, with the Career Preferences of the individuals. An alternative null Hypothesis has
been set up stating that "Career Preference of the individual does not differ significantly with the JP Index of Personality Type". Majority of individuals in this sample are in the Judging attitude across careers. However for professions such as Services, Artistic and Musical, and Literary, those in the judging attitude are in a lesser frequency when compared to the other careers such as Engineering, Medical Health and Teaching and Welfare. Since the judging process is the major trend among individuals in the present sample, individuals across different careers do not differ on the JP index.

The above result is supported by the career listings in Appendix D of the MBTI manual (Myers and McCaulley, 1985).

In terms of work environment persons in the judging attitude like work where they can plan their work and stick to the plan. They like to get things settled and finished. They may decide things too quickly. They may dislike to interrupt the project they are on for a more urgent one. They may not notice new things that need to be done. They want only the essentials needed to begin their work. Such persons tend to be satisfied once they reach a judgement on a thing, situation, or person.

Contravening to their counterparts, Perceptive Types adapt well to changing situations. They do not mind leaving things open for alterations. They may have trouble making decisions. They start too many projects and have difficulty in finishing them. They may postpone unpleasant jobs. They want to know all about a new job. Perceptives tend to be curious and welcome new light on a thing situation or person.

According to the career listing of Appendix D of the MBTI manual (Myers and McCaulley, 1985), Judging Types are more likely (in decreasing order of preference) to be in the following careers: managers and administrators, protective service workers, cleaning services, scientists in life and physical, teachers, religious workers, doctors of medicine, librarians, archivists and curators, health technologists and technicians, nurses, private household workers, lawyers.
and judges, military personnel, health service workers, transportation operatives, computer specialists, farmers, craft workers, office machine operators, health care therapists, engineering and science technicians, specialized operatives, sales workers, mechanics, counselors and artists and entertainers.

Perceptives are likely to be writers and journalists, laborers, food service workers, psychologists and social scientists (in decreasing order of preferences).

With regard to the relationship between career preference and the hierarchical level of the career preferred, a very highly significant relationship exists. Thus Hypothesis 1 has been positively verified. The frequency distribution of data reveal that certain careers such as Engineering, Teaching and Welfare and the Protective careers have a greater number of participants choosing Level 1. careers. Participants preferring Sales and Business, Medical Health, Services and Outdoor have a greater number of Level 2. preferences. Artistic and Musical is the only career which has more number of individuals preferring Level 3. careers. This trend of results indicates that if a person chooses a particular career, he is also likely to be inclined to choose a respective hierarchical level more often.

Observations, such as these point out to the fact individuals who choose or prefer a particular career are selecting it, not only for the intrinsic nature of the job at hand, and their interest in the profession as a whole; but also due to factors such as status and responsibility, remuneration, years of education and training required and type of work, while opting for a career.

Students preferring Engineering, Teaching and Welfare, Administrative and Clerical and Protective careers obviously want these careers for the power they exercise, since they prefer Level 1. Medical Health, Sales and Business, Services and Outdoor careers are preferred by individuals, who may not be interested in the heavy responsibility that Level 1. jobs represent. They may be more oriented towards a moderate life-style and greater amount
of job satisfaction from the intrinsic nature of the work itself. In the case of Artistic and Musical careers, it is easier to get jobs in Levels 2 and 3 than Level 1 jobs, the latter requiring a lot of private financial investment.

And lastly, personality type of the individual has been found to have a very highly significant relationship with the hierarchical level of the career preferred. Thus Hypothesis 1:7 has been proved. This result implies that when individuals of a certain Personality Type prefer a career, they are more inclined than individuals of other Personality Types to prefer a particular hierarchical level of a career. In the present case ISTJ, ISTP, ESTJ and ESTP are the four Personality Types who have really given a very high preference to Level 1 and 2 careers when compared to those in Level 3. Since all of these are ST types, one can assume that their practical, logical and analytic natures have made them prefer careers that are associated with greater degree of success in terms of job challenges, social status and monetary benefits.

This result finds support in the fact that Sensing Types are less concerned with the nature of the job, than with its stability, given which they are expected to find or develop their own sources of satisfaction (Myers and Myers, 1980). A good example of such a type is an ESTJ type in general practise (medicine) whose enthusiasm for the field as much, as his/her impatience to start earning money without delay of up to five years of residency (Myers and Myers, 1980).

Summarizing this subsection, it appears that Career Preference is influenced by the Personality Type of the individual. The EI Index of Personality Type plays a significant role in the choice of careers in this sample, unlike the other Indices of Personality Type. And last but not the least the hierarchical level of Career Preferred bears a relation to both career preference type an individual selects, as well as the Personality Type of the individual.
II. Career Preference and PFHA

The left and right cerebral hemispheres of humans differ in their information processing abilities and propensities (Hellige, 1990). Various psychological functions have been ascribed to Left and Right cerebral hemispheres by various researchers. Functions frequently associated with the left hemisphere are speech, language, complex motor functions, vigilance, paired associate learning, liaison to consciousness, verbal abilities, linguistic description, ideation, conceptual similarities, arithmetic, writing, calculation, main language centre, finger naming and right-left orientation.

The right hemisphere also is associated with specific functions such as spatial orientation, picture and pattern sense, performance like functions, spatial integration, creative associative thinking, calculation, simple language comprehension, nonverbal ideation, recognition of common environmental sounds, facial identification, nonverbal paired associate learning and tactile perception (Filskov and Boll, 1981).

The premise with which functional hemispheric asymmetry has been selected as a variable for this study, is that, since each hemisphere has specialized expertise for certain behavioral functions: these specialized functions can be instrumental in the preference of careers. Moreover different careers need varied areas of expertise.

According to the findings of this study, PFHA does not show a significant relationship with the preferred career of the individual. Thus Hypothesis II : 1 has not been supported, and alternatively a null hypothesis has been set up stating that "The PFHA does not have a significant relationship with the preferred career of the individual". This implies that the Left, Right or Balanced hemispheric preferences do not really influence the careers preferred. The partial or relative specialization theory explains this finding. It appears that the neuro-behavioral tasks that are prerequisites for certain careers, exist in both hemispheres, though perhaps to a greater extent in one hemisphere when compared to the other. Since in this case
majority of individuals preferring different careers are of Balanced PFHA thus using both sides of the brain equally, significant results have not been found. Further more even the Balanced PFHA individuals do not seem to prefer certain careers more significantly than Left or Right PFHA individuals. Another angle to viewing this finding can be that all three patterns of hemispheric specialization are required by the different careers and the nature of jobs they represent. Additionally the sample comprises of high school students who are a heterogenous group with regard to their interests and ambitions. Thus these students may not really have the specific specialized hemispheric skills for the professions they choose, which is another reason for non significant results. This may be the contributing factor to why this result contradicts the findings of Prakash and Bhogle (1993). They found identifiable cerebral preference patterns among seven occupational groups; where preference patterns may have emerged because the professionals were more used to applying the relevant hemispheric skills required for a given profession, more frequently.

The discussion now shifts its focus from the general PFHA to specific subcategory styles or functions of the Left and Right Hemispheres of the brain. The analysis of data indicate that Career Preferences do not differ significantly with the Left-Logical style PFHA. This hypothesis II:2 has not been supported. An alternative null hypothesis has been set up stating that "career preferences do not differ significantly with the Left- Logical style of PFHA of the individual". Individuals preferring Administrative and Clerical: Level 2. careers are least likely to prefer logical work. And in contrast, individuals preferring Protective: Level 2. careers are most likely to enjoy logical work. However these differences are not statistically significant. Thus these results imply that individuals who prefer different careers do not vary very much in their preferred use of the Left-Logical style of PFHA.

However a significant difference is found in the careers preferred by individuals with the Left-Verbal style of PFHA. Thus hypothesis II:3 has been supported. Individuals preferring the Literary: Level 3. careers have the greatest preference for the Verbal style of
PFHA. This is in keeping with the theoretical fact that the left hemisphere is specialized for verbal information processing. Consequently while, Left PFHA on the whole may not influence careers preferred, certain behavioral tasks such as verbal information processing may have its effect on choice of a career. Porheh and Whitman (1991) have found similar results with regard to creative thought which is a prerequisite for a literary profession.

Coming to the Right-Manipulative style of PFHA, this subcategory style of PFHA does not differ significantly, with the different careers preferred. Thus Hypothesis II:4. has been rejected. An alternative null Hypothesis is set up instead, stating that "Career preference does not differ significantly with the Right-Manipulative style of PFHA". A trend exists for individuals preferring Administrative and Clerical: Level 2 and Outdoor: Level 1 careers, to prefer manipulative tasks most and individuals preferring Medical Health: Level 3 and Literary Level 3 to like the same, least. However this trend is not statistically significant. The implication of such a finding then is that persons preferring different occupations do not differ in the degree to which they would like manipulative tasks.

And lastly no significant difference exists in the Careers Preferred by individuals with a Right-Creative style of PFHA. Hence Hypothesis II:5 has not been supported. An alternative null Hypothesis has therefore been set up stating that "Significant differences do not exist in the Careers Preferred by individuals of a Right-Creative style of PFHA. Contrasting to the Left-Logical style of PFHA, in this case a trend exists for individuals preferring Administrative and Clerical: Level 2 careers to prefer Right-Creative style of PFHA most, while individuals who prefer Protective: level 2 careers prefer this least.

Concluding this subsection, the overall results suggest that except for Left-Verbal style of PFHA, hemispheric asymmetry does not exercise much influence on the preference of careers.
II. Personality Type (as measured by the MBTI-FORM G) and PFHA.

Various attempts have been made by researchers to examine the many facets of personality, one of them being functional cerebral asymmetry. Cerebral asymmetry has been studied with the Extraversion-Introversion dimension of personality (Riess, 1986), anxiety (Hicks and Pelligrini, 1984; Merckelbach, de Ruijter and Olff, 1990; French and Richards, 1990), hysterical and obsessive compulsive disorders (Smokler and Shervin, 1981) and psychopathy (Cuff, 1984). In this study, functional cerebral asymmetry is studied with Jungian typology (as measured by the MBTI-FORM G).

The findings of this study reveal that Personality Type of the individual does not have a significant association, with the PFHA he/she prefers. Hypothesis III:1 has thus been disproved. An alternate null hypothesis is framed instead stating that "Personality Type and PFHA of the individual does not have a significant relationship". It can be inferred therefore that individuals of the sixteen different types of Personality, do not differ significantly in the way they prefer to use their Left, Right or Balanced styles of neural processing.

Newman (1990) and Lyons (1985) have found contradictory results. Both researchers in their independent studies found a relationship between dominant Sensing and dominant Feeling, Personality Types and right hemisphere activation. They also found an association between dominant Intuitive and dominant Thinking Personality Types and Left hemisphere activation. Thus according these authors Right hemispheric activation is associated with individuals having the following Personality Types, namely, ISTJ, ESTP, ISFJ, ESFP (dominant Sensing); and ISFP, ESFJ, INFP, ENFJ (dominant Feeling). Likewise Left hemispheric activation is associated with individuals having the following Personality Types namely, INFJ, ENFP, INTJ, ENTJ, (dominant Intuition) and ISTP, ESTJ, INTP and ENTJ (dominant Thinking).

In this study hemispheric preference is measured by the questionnaire method unlike hemispheric activation which is measured by electro-encephalogram (EEG) method. Thus
while preference for a particular PFHA may exist, this need not necessarily mean hemispheric activation to the same degree. Further majority of individuals in this sample prefer Balanced PFHA. This means that they prefer to use both Left and Right PFHA as frequently. However in terms of dominant and auxilliary processes, only one process can be dominant for a given individual. This therefore contradicts the logic since one cannot use both sides of the brain, and at the same have only one dominant process which is lateralized. Thus if perhaps methodologically one measures PFHA by the EEG method one could definitely say if both the hemispheres are really equally activated for balanced PFHA individuals. Since the present methodology is only in terms of preferences, similar results have not been obtained. Further more according to the assessment method applied in this study most individuals are of Balanced PFHA. However, even among those STs who clearly prefer Left and Right PFHA, it appears while dominant Thinking Types prefer Left PFHA more than Right PFHA as found by Newman (1990) and Lyons (1985); the dominant Sensing types contrarily to their findings also prefer left PFHA to right PFHA. Thus it seems that regardless of the dominance and auxilliary factors individuals prefer Left PFHA. This again may be attributed to social influences on type development, since our education system emphasizes the use of the Left hemisphere functions when compared to that of the Right hemisphere functions.

Contrary findings to this study have also been reported by Wissing and Guse (1991), and De Pascalis (1993) who found a relationship between personality and PFHA. Crossman and Polich (1990) also found oppositional personality attributes to be associated with observed trends in hemisphericity.

Absence of association between personality (as measured by other scales) and functional hemispheric asymmetry, like the results of this study, have been reported by Hicks and Pelligrini (1984), Reiss (1986), French and Richards (1990); and Merckelbach, de Ruiter and Olff (1990).
The focus now shifts from the general Personality Type of the individual to specific Indices of Personality Type with reference to PFHA. The results show that the EI Index of Personality Type does not differ significantly with the PFHA of the individual. Hypothesis III: 2 has thus, not been supported. An alternative null Hypothesis is therefore set up stating that "The EI Index of Personality Type does not differ significantly with the PFHA of the individual." A trend however does exist for the Right and Balanced PFHA individuals to be more Introverted and for Left PFHA individuals to be more Extraverted. But the observed trend is not statistically significant.

This finding can be explained in terms of Newman's (1990) and Lyon's (1985) findings. If the four dominant Processes i.e. S, N, T and F are specific lateralized functions, i.e. S and F lateralized to the Right hemisphere and N and T lateralized to the Left hemisphere; then it follows that Extraversion and Introversion are function of both the hemispheres. Because all four dominant Processes can be either Extraverted or Introverted according to the theory behind the development of MBTI. Hence the result in this case is non significant because it appears that the EI Index is a function of both hemispheres, and not a lateralized function as hypothesized.

Bhoj (1992) in a study, found similar results with reference to Extraversion-Introversion dimension of personality and Cerebral Dominance.

In a similar vein, the SN Index of Personality Type does not differ significantly with the PFHA of the individual. Thus Hypothesis III: 3 has to be rejected. An alternative null hypothesis is instead framed stating that "The SN Index of Personality Type does not differ significantly with the PFHA of the individual". This means regardless of the hemispheric preference an average individual in this group seeks the fullest possible experience of what is immediate and real. Moreover the results also indicate that an average individuals of all three PFHAs are all Sensing Types. In terms of scores the trend indicates that Right and Balanced hemispheric individuals have higher scores than Left hemispheric individuals. Thus these two i.e. Right and Balanced PFHA individuals are less likely (according to continuous scores) to report Sensing than the Left PFHA individuals and more likely to report Intuition. However this trend is not statistically significant.
The result with regard to the SN Index contradicts Newman's (1990) and Lyons (1985) findings. This stronger tendency to localize Sensing in the Left hemisphere to the Right could be due to cultural and social influence on Type development and hemispheric lateralization.

Unlike the EI and SN Indices, the TF Indices of Personality Type differs quite significantly with the PFHA of the individual. Hypotheses III:4 has thus been supported. This trend of results indicates that while all the three types of PFHA individuals are Thinking Types, Right and Balanced hemispheric preference individuals are less likely to report the use of Thinking process and more likely to report the Feeling process when compared to Left hemispheric dominance. This is because in terms of continuous scores, scores below 100 indicate a tendency towards the Thinking process and scores above 100 indicate a tendency towards the Feeling process.

Thus from this result it can be inferred that the Thinking process is a lateralized function of the Left hemisphere. Hence a Left hemispheric preference individual in this sample is more likely to be seek rational order and plan according to impersonal logic, instead of seeking rational order according to harmony among subjective values. The findings of Newman (1990) and Lyons (1985) support this result.

The JP Index of Personality Type also has been found to differ significantly with the PFHA of the individual. Hypothesis III:5 has thus been supported. Individuals from all three groups of PFHA i.e. Left, Right and Balanced, on an average are Judging Types. The trend however indicates that individuals with Right and Balanced PFHA are less likely to report preferring the judging attitude than those with Left PFHA. Consequently those with Right and Balanced PFHA are less likely to report making decisions, seeking closure, planning operations or organizing activities than individuals with Left PFHA; and on the other hand the former are more likely to report spontaneous behavior, curiosity, adaptability, openness to events and changes, and aiming to miss nothing, when compared to the latter.
The Judging attitude (analytical, critical, decision making etc.,) it appears is more a function of the left hemisphere and Perceiving Attitude (information seeking, sensation, inspiration, selection of stimulus) a function of the right hemisphere. According to Newman (1990) and Lyons (1985) if the dominant S, N, T & F processes are lateralized functions it follows that each hemisphere has J and P attitudes, since the processes can have the J or P attitude. Therefore the partial specialization theory (Cohen, 1983) explains this phenomenon. As per the partial specialization theory each hemisphere has the capacity for a particular function in this case J and P. However a particular hemisphere develops a particular function to a greater degree. Thus it seems that, the judging attitude being lateralized to the left hemisphere and the perceptive attitude being lateralized to the right hemisphere is only a matter of degree.

The Indices of Personality Type and the subcategory style of PFHA have been correlated to examine if certain neuro-behavioral tasks are associated with the Indices of Personality. Some significant results have emerged from the correlation thus partially supporting Hypothesis III : 6. An alternative hypothesis is thus set up to represent the partial relation, stating that "There exists a significant negative relationship between the EI, TF and JP Indices of Personality Type and the Left-Logical style of PFHA and a significant positive relationship between the JP Index of Personality Type and the Right-Manipulative Style of PFHA.

The results indicate that individuals who have a greater logical preference score low on the EI Index and therefore likely be more Extroverted than Introverted and visa versa. Along similar lines, individuals who have a greater Logical preference score low on the TF Index and are therefore more likely to prefer the Thinking process to the Feeling process and visa versa. Like the previous Indices i.e., EI and TF, the results once again denote that individuals who have a greater preference for logical work score low on the JP Index and are therefore likely to prefer the Judging attitude to the Perceiving attitude and visa versa. The other subcategory style of PFHA to show a relationship with the Indices of Personality Type is the Right-Manipulative style of PFHA. The findings indicate that those individuals preferring manipulative tasks to a greater
degree are likely to score high on the JP index. Such individuals are therefore more likely to prefer the Perceptive attitude to the Judging attitude.

In descriptive terms, the results mean that the strong logical preference is associated with an individual who is Extraverted i.e. aware and relies on the environment for stimulation and guidance, is action oriented, has a sometimes impulsive way of meeting life, is frank, has ease of communication and is sociable. A Thinking Type individual who relies on principles of cause and effect, tends to be impersonal has analytical ability, objectivity, concern with principles of justices and fairness, criticality and has an orientation to time that is concerned with connections from past through the present and toward the future; is also likely to have a higher degree of preference for Logical activity and thought. The Logical Style is also strongly preferred by persons who are in the Judging attitude i.e. organized, purposeful, decisive, plan operations and seek closure. And lastly individuals who have a greater preference for manipulative tasks are likely to perceptsives i.e. attuned to incoming information, spontaneous, curious and adaptable.

The fact that the Thinking process and Judging attitude involves analytical ability and that the Perceptive attitude involves manipulative i.e. spatial ability is supported by the analytical model proposed by Bradshaw and Nettleton (1981). According to their formulation the Left hemisphere processing are sequential, analytic and time-dependent. The right hemisphere is characterized as a holistic spatial processor.

Enquiring further into the dynamic relationship between Career Preference and Personality Type, an attempt to investigate if the PFHA plays a role in influencing Personality Type and its relation to Career Preference has been made. Significant results have not emerged from this enquiry.

Individuals preferring Left PFHA do not reveal any significant relationship between their Personality Type and Career Preference. Thus Hypothesis III: 7 has not been supported by the results. An alternative null hypothesis is thus set up stating that "Individuals with Left Hemispheric
Dominance do not have a significant relationship between this Career Preference and Personality Type.

Individuals with a Right hemispheric preference also do not show any relationship between their Personality Type and Career Preference. Hence Hypothesis III : 8 also has to be rejected. An alternative null hypothesis is set up instead stating that "Career Preference and Personality Type will not have a significant relationship for those individuals with Right Hemispheric Dominance."

And finally similar nonsignificant results are found for Balanced Hemispheric preference and its influence on Career Preference and its relation with the Personality Type of the individual. Thus once again an alternative null hypothesis has been set up, stating that "Individuals with Balanced hemispheric preference will not have a significant relationship between their Career Preference and Personality Type."

The fact that Left, Right and Balanced PFHA does not influence the relation between the Career Preference and Personality Type can probably be attributed to, firstly the absence of any strong relation between Career Preference and Personality Type. And secondly as PFHA does not show a direct relationships to the 16 Personality Types directly. Thus while Career Preference and Personality Type are significantly related independent of PFHA, when PFHA is taken into account, similar results do not emerge.

Concluding this subsection, if has become apparent that PFHA does not bear any direct relation to the sixteen Personality Types (as measured by the MBTI FORM G). Indices of Personality Type namely TF and JP however seem to differ with individuals of Left, Right and Balanced PFHA. And lastly the subcategory styles of PFHA have a greater influence on Indices of Personality Type than PFHA as a whole. The EI, TF and JP Indices of Personality Type are seen to have a negative correlation with the Left-Logical style of PFHA. And contrarily the JP index has a positive correlation with Right-Manipulative style of PFHA. Thus in this subsection
some hypothesis have come up with significant results while others have not.

IV. Career Preference and other Psycho-Social Variables.

Research on Career related processes exhibit a lacuna with regard to an important precursor of career choice, namely subject choice. Career acquisition depends not so much on aspiration as on educational routes into which an individual is channeled (Herriot, 1984). Educational interest has therefore been chosen as one of the important psycho-social variables to be studied with Career Preference. A highly significant relationship has been found between Career Preference and the first subject choice of the individual. Thus the hypothesis IV:1 that "Career Preference will be significantly related to the educational interest of the individual" has been supported. The major trend of results indicate that Science and Engineering are the most preferred subjects. Further students who prefer Science are more likely to prefer Medical Health careers than those preferring Medicine as a subject.


Vocational Aspiration is an individuals expectations and goals with regard to one's career, which are affected by economic, personal, sociocultural and familial factors. In this study Career Preference has not differed significantly with the Vocational Aspiration of the individual. Therefore Hypothesis IV : 2 has not been supported. An alternative null hypothesis is thus set up stating that "Career Preference does not differ significantly with the Vocational Aspiration of the individual". As majority of individuals have preferred Engineering, Medical Health and Teaching and Welfare careers, the degree of expectation and anticipation of goals, may not vary much given their information about these careers. However, even considering the other seven groups of careers there does not seem to be much variance in Vocational Aspiration. This could point out, to the fact that students are aware of social factors that exist in terms of support and pressure from peers and family as well as a realistic view of what is expected of them from different professions. It further suggests that just because a particular career is not trendy
such as Literary, Artistic and Musical, Outdoor and Protective careers, those who choose to prefer these occupations have an equal degree of ambition to get ahead in these careers as are those preferring Engineering, Medical Health or Teaching and Welfare respectively.

Contradictory findings have been reported by Grewal (1980) who studied occupational aspiration of young boys and he found that the maximum number of subjects i.e. 50% aspire for middle level occupations (Level 2); nearly 30% aspired for top level occupations (Level 1) and about 20% for low level occupations (Level 3). A similar trend has been observed in this study with regard to occupational hierarchies; i.e. Level 1 being aspired for most and Level 3 least. However with Vocational Aspiration with all its other connotations excluding prestige, it seems has not differed with the Career Preferred, the rationale of which has already been discussed.

Sex roles are meaningful ways to order one's sense of self as socially efficacious, to create a sense of personal conformity, and to order self concept. The creation of self concept is partially accomplished by acting, and noticing that the self is the centre of effective acts. Roles permit structural action like work in a society (Sinnot, 1994). In the present study the work aspect of sex roles has been studied in order to see if a particular Sex Role Orientation is likely to affect the career one chooses. The following Hypothesis has been set up to verify the same, stating that "There exists a significant relationship between the Career Preference and Sex Role Orientation (Masculinity, Femininity, Androgynous and Undifferentiated), of the individual. This hypothesis has been supported. Surprisingly in this sample Masculine and Androgynous sex role stereotypes amounted to almost a negligible number of individuals. Nearly two-thirds of the sample are of the Undifferentiated sex role type. Thus they are likely to score low on both Masculine and Feminine qualities. The other approximate one-third of the sample are Feminine. The trend of results indicate the Undifferentiated group and the Feminine sex role type of individuals both have given a greater preference to Engineering, Medical Health and Teaching and Welfare. The Undifferentiated group however are more likely to choose these careers than are those with a Feminine Sex Role Orientation. The Undifferentiated group are
also likely to prefer the Literary and Artistic and Musical careers more often that those with the Feminine Sex Role Orientation. Thus it seem that it is no longer the trend that traditionally masculine careers will attract those with Masculine Sex Role Orientation.

Further it seems that this trend towards Undifferentiated and Feminine sex roles almost to the exclusion of Masculinity and Androgynous, seems to be the result of diffused sex roles in today's urban settings. Boys are no longer hesitant to have long hair, pierce their ears, take up domestic responsibility or take up any activity that girls would. Further girls are also more masculine in their approach to life, clothes values etc., However while diffused Sex Roles and slightly Feminine orientation exists, this is not strong enough to be called psychological androgyny and has therefore to be classified as Undifferentiated and Feminine.

The relationship between Sex Role Orientation and Career Preference has also be reported by researchers such as Sztaba and Colwill (1988) Neimeyer et al. (1989), Marro and Vouillot (1991) and Miller et al. (1993).

Research on Fear of Success, has revealed that those who are high on Fear of Success are likely to have low career aspirations. Moreover women tend to fear success and therefore are likely to choose more traditional occupations like teaching and nursing. Based on these assumptions in this study it has been hypothesized that "Career Preferences of the individual will differ significantly with fear of success". This finding has not been supported. Therefore an alternative null hypothesis is set up stating that "Career Preference of the individual will not differ significantly with fear of success."

These findings are contrary to the results of Rao (1982). However slightly similar results have been reported by Zuckerman and Allison (1976) who found no relationship between Fear of Success and major field of study.
These results imply that Career Preference does not seem to influence the degree of Fear of Success across occupations. Thus if Fear of Success is experienced in extreme degrees it is probably due to reasons other than that of Career Preference, such as acceptance among peers, change of life style etc.,

Summing up this subsection it is observed that Career Preferences are likely to vary with Educational Interest and Sex Role Orientation. However Vocational Aspiration and Fear of Success do not seem to affect the Preference of Career.

V. Career Preference and Demographic/Social Variables.

Career Preferences are influenced among other things, by the Demographic Variables that are a part of, and that interact with the individual. Factors such as school, the family background, personal interest are some of the broad areas which affect the career decision making. Based on this premise an assumption has been made that certain Demographic Variables are predictors of Career Preference.

The Multiple Regression Analysis in relation to Career Preference indicated the following variables significantly predict the Career Preference of individual namely: when mother of the individual is an undergraduate and when father's preferred occupation for son/daughter is Artistic and Musical and Protective careers. Religion, Order of Birth, Zone, Syllabus (Central/State), Type of School (Single sex/Co-educational), Preferred Subject, Hobbies and Interest, Education of Father, Occupation of Father and Mother, and Preferred Occupation for Son/ Daughter by Mother were not significant predictors of Career Preference. Thus Hypothesis V : 1 has been partially supported.

This result suggests that undergraduate mother's are more likely to participate in and influence the Career Preference of the individual, when compared to mothers who are graduates, post graduates or matriculates. This may be due to unfulfilled personal desires of completing education
and having a career for themselves. Apparently these mothers are therefore perhaps more likely to influence the career the individual prefers.

It also is evident that fathers who prefer the not so trendy occupations such as Artistic, Musical careers and Protective careers for their children, also have a higher chance of being a major influence in the Career Preference of their child than fathers choosing otherwise.

These results are congruent with the fact that research has consistently demonstrated that parents are the most influential in the career decision making process (Miller 1989; Wilkowski, 1993; Hoffman, Hojacker and Goldsmith, 1993). The Indian adolescent is likely to find the pursuit of independence fraught with resistance. It is not unusual to hear a parent declare that he is going to "make his son an engineer or his daughter a doctor" (Arulmani, 1996). However, Thompson (1994), has reported that higher levels of career maturity are associated with optimal levels of independence from family.

Family income of individuals preferring different careers varies significant. Thus hypothesis V:2 has been supported. Those from the lowest income group prefer Medical Health: Level 3 and Teaching and Welfare: Level 2. Those with the highest range of family income are likely to prefer more adventurous and creative occupations such as Protective: Level 2 careers and Artistic and Musical: Level 3. Thus for the higher income groups financial reasons do not seem to influence career decisions as much as the nature of those careers and the interest value.

Career Preferences do not differ significantly with the marks obtained in the last final examination. Thus an alternative hypothesis is set up stating that "the career preference does not differ significantly with the percentage of marks obtained in the last final examination". The trend of results do indicate that individuals scoring in eighties are more likely to prefer Medical Health: Level 2 and Administrative and Clerical: Level 1 and those scoring in the
first half of the sixties are likely to choose Literary: Level 2 and Sales and Business : Level 3. However this trend is not statistically significant and thus the hypothesis has not been supported.

SECTION II

I. SEX DIFFERENCES

In this section, the subsidiary hypotheses which assume that sex differences exist within the different variables, in this study are discussed.

Locating and explaining gender differences in career decision making is significant for both theory and practice. Several theories that guide today's practice have been criticized for their inadequate treatment of special needs and characteristics of women's career decision making (e.g. Fitzgerald and Crites, 1980; Osipow, 1983; Brooks, 1984 and Brown, 1984). In his review of literature on gender differences, Osipow (1983) has concluded that these are substantial enough to justify distinct theories. Gati, Osipow and Givon (1995) have however shown that despite the observed differences, the similarities between the sexes are greater than previously believed.

One of the purposes of the present research has been to explore differences in career related preferences of boys and girls that may account for their distinctive career choices. It has been hypothesized that career preference and sex of the individual have a significant relationship" (Hypothesis I : a). This finding has been affirmed by the results.

Girls and boys seem to vary nearly on all the career preferences i.e. the degree to which they may prefer a career. However the Medical Health career preference stands out as the career in which girls really outdo boys in their preference for all three Levels of this profession. In every other career, the results indicate that if boys like one particular level then girls prefer the other. In terms of overall trends it is apparent that boys do prefer Engineering, Teaching and Welfare, and Administrative and Clerical Careers to a greater extent do girls. This finding may be
due to the fact that girls have become more ambitious in the past couple of years. Thus opting for careers like Engineering and Medical Health. Since Medical Health is considered to be a caring, service oriented profession, it is more appealing to girls than boys, the former having a greater naturally nurturing personality make up. In India parents also prefer their daughters to be in the caring profession than in a male dominated profession like Engineering. Moreover because girls only supplement family income it is easier for them to opt to study for many years as is required in Medicine up to completion of a masters degree. Because in today's world people prefer to go to a specialist than to a general physician, medical students end up studying almost up to the age of 27 years or more in some cases. Boys on the other hand being more independent by nature, prefer to start working earlier and thus opt for Engineering, Graduation for which takes only four years to complete. Even if they do a masters degree they still will be much younger than a medical student when they get their first job. However, a trend does seem to exist that after Medical Health careers, girls also are likely to prefer Engineering careers, instead of traditional careers like Teaching and Welfare, which in fact boys have chosen more often. Thus these results suggest that girls are becoming non-traditional in the preference of career and boys are still relatively traditional choosing masculine careers.

Shenoy (1993) has reported similar results that boys seem to prefer Engineering as a career choice and girls, medicine. Sex differences in career preferences have also been reported by Verma and Sharma (1987) and Sen and Seth (1992).

Considering hierarchical level of career preferred, significant sex differences exist. Thus Hypotheses 1: that states "the hierarchical level of the career preferred will have a significant relationship with the sex of the individual" has been supported. Boys have preferred Level 1. careers more often than girls. And girls have preferred Level 2 and 3. careers more frequently than boys. Thus it seems than girls are less ambitious than boys where prestige, social status and higher education are involved. This can be attributed to the fact, that girls are aware that they will have to play dual roles when they get married i.e. one of a homemaker as well as that of a career woman. Level 1 jobs are highly stressful, involve a lot time and responsibility
when compared to Level 2 and Level 3 jobs. Boys on the other hand have the liberty to explore their ambition to its fullest as the role of a homemaker is not endowed upon them by society. Put in technical terms girls probably fear the negative connotations that success may bring because if they are dedicated to doing well in their careers the home front will suffer, and this will lead to feelings of guilt and inadequacy. Another factor that might lead girls to aspire for lower level jobs than boys is that "positions of power" are considered to be masculine. Therefore girls may feel that they will not be accepted in society for being Masculine in their Sex Role Orientation.

Tomini and Page (1992) in a similar study have reported that women showed lower levels of confidence regarding chosen careers.

The results of this study indicate that Personality Type has significant relationship with sex of the individual. Hypotheses I: c has thus been supported. Girls and boys differ in the degree to which they prefer each of the sixteen personality types. In terms of dominant processes it seems that boys are more likely than girls to use the Thinking Process and girls are more likely to use the Intuition process, when compared to boys. Where Sensing and Feeling processes are concerned they use these in the dominant mode as frequently. Further boys are more likely to be introverted when compared to girls, who in turn are more likely than boys to be extraverted.

Thus boys are likely to live in an inner world of ideas and make decisions and organize things. Girls are more likely to seek their stimulation from their environment and think of possibilities rather than actualities. This seems to re-affirm the fact that boys are more practical and action oriented than girls who are not expected by society to make only practical decisions about issues like career, but are allowed to explore avenues even if they may not make very successful careers; as women are not considered to be the main breed winners so to speak.
Hume (1992) also has found slightly similar results with their use of the MBTI. The results indicated that by nature girls prefer the Feeling mode while boys prefer the Thinking mode.

The individual Indices of Personality Type have not varied with the sex of the person. Thus Hypothesis I: d has not been supported. An alternative null hypothesis has thus been set up stating that “Significant sex differences are not found in the four Indices of Personality Type. Thus as discussed previously while boys and girls differ in their use of dominant and auxiliary processes, the degree to which they report use the four Indices i.e. EI, SN, TF and JP in terms of continuous scores does not vary significantly.

Hemispheric preference i.e. Left, Right and Balanced PFHA has not differed with the sex of the individual. Thus Hypothesis I: e has been rejected and an alternative null hypothesis has been framed stating that “Sex of the participant will not have a significant relationship with the PFHA of the individual”. These trend of results denote that girls prefer wholly lateralized left or right hemispheric functions more than boys. Boys on the other hand prefer to use both hemispheric functions more after than girls. The finding however is not statistically significant.

Bhoj (1992) has found similar results i.e. boys and girls did not differ in their preference for Left, Right or Balanced hemispheric activity. Herman, Grabowska and Dulko (1993) also have reported that male and female subjects do not differ in their pattern of hemispheric organization on either verbal or spatial tasks. This result according to the authors indicates that neither biological sex nor gender identity are significant factors in determining the pattern of hemispheric asymmetry for either verbal or nonverbal tasks. Further results which are highly similar to the observed trends of this study have been reported by McGlone (1980). The findings of McGlone’s (1980) study suggest that the male brain is more asymmetric for verbal functions, and possibly for visuo-spatial functions as well. In the female brain these functions are, it is argued, strongly lateralized.
While the results indicate that hemispheric differences are not related to gender, it seems however, that sex differences are observed with reference to specific hemispheric activities or functions. In accordance with this finding it has been observed that significant sex difference exist in three subcategory styles of PFHA. Thus Hypothesis I: f has been partially accepted. A more suitable hypothesis is therefore framed stating that "significant sex differences exist in the Left-Logical, Right-Manipulative, and Right-Creative subcategory styles of PFHA".

Boys or girls do not differ in their preference of verbal activities such as learning new words, writing a movie script etc. However differences are observed in the other three subcategory styles. Boys prefer logical and manipulative activity more than girls. Thus boys are more apt than girls to like to study logic, improve this strategy in a game or review a book (Logical activities). Moreover they are also the type to enjoy building a house or shack, engage in sports or do carpentry work (Manipulative activities). Thus it seems that like the previously observed trend boys prefer to use both hemispheric functions, i.e. a balanced preference, when compared to girls. Girls seem to enjoy creative activity such as inventing a story, drawing a landscape or playing an instrument by ear, much more than boys. This finding is also in keeping with the trend that girls prefer Right hemispheric functions more than boys.

Harter (1984) in a study on lateral specialization and verbal / spatial ability also has observed sex differences in the relationship between lateral specialization and spatial ability. While boys' spatial ability scores were positively associated with having a left ear advantage for nonverbal sound stimuli; the girls' spatial ability scores were not significantly related to ear advantage scores for nonverbal sounds but were associated with their ear advantage sound for verbal stimuli. In the present study similar trends were observed with girls having higher verbal preference scores than boys. However these trends did not materialize as significant results.
Sex differences have also been reported by Voyer and Bryden (1990) in a study on spatial ability and lateralization of mental rotation (cognitive processes). Boys showed a left visual superiority and girls an insignificant right visual field advantage.

An important precursor of a career preference is an interest in a particular stream of education. What an individual prefers as a career is very likely to be an off-shoot of a particular branch of education that interests the individual. Significant sex differences among participants seem to exist in the ranks given, to the eight broad subject areas as measured by the Educational Interest Record. Thus hypothesis I: g has been supported.

The results indicate that both boys and girls differ in the degree to which they prefer a particular subject. Majority of boys are more likely to give Science, Engineering, Medicine, Agriculture and Commerce higher ranks than girls. Girls are more likely to give higher ranks to Home-Science, Fine Arts and Humanities than boys. Thus this result shows that where educational choice is concerned girls are more traditional in their approach. They choose subjects which require the feminine touch. However boys continue to choose traditionally masculine subjects. Thus both groups have been socialized to think traditionally.

It is noteworthy to mention here, that while girls prefer to study traditionally feminine subjects they do not reflect this to a great degree in their career preference. Thus perhaps their careers preferences are made not so much because of their real interest in masculine professions, but because masculine professions such as Engineering, which is the most frequently preferred career, has more scope for success and status than careers such as home-science, fine arts etc. Thus it appears that girls educational interest is more from their true interests and career preferences are more due to practical choices.

Shenoy (1993) also has reported sex differences in relation to different educational interest areas. Significant differences between boys and girls were found in the areas of Science, Engineering, Agriculture, Humanities and Commerce with boys evincing a keener
interest in these fields than girls. This result is very similar to the results of the present study with the exception of humanities.

Vocational Aspiration of the individual in this sample does not seem to be influenced by gender. Thus hypothesis I: h has not been supported. An alternative null hypothesis has thus been set up stating that "Vocational Aspiration does not differ for boys and girls. Girls and boys therefore do not differ in their expectation levels for a particular career. Using the same scale i.e. Vocational Aspiration Scale, Shenoy (1993) has found similar results. However Vimala (1989) has reported that girls had higher vocational aspiration scores compared to boys on the Vocational Aspiration Scale.

Boys and Girls do not differ in their Sex Role Orientation. Thus hypothesis I: i has to be re-framed into a null hypothesis stating that "Sex Role Orientation i.e. Masculinity, Femininity, Androgynous and Undifferentiated does not have a significant relationship with the sex of the individual". Surprisingly Masculinity and Androgynous Sex Role Orientations are almost negligible in this sample. Furthermore what is even more striking in these results that boys have a greater Feminine and Undifferentiated Sex Role Orientation than girls. However this is just a trend which is not significant. These results point out to the fact that perhaps the current day society does not emphasize masculine traits anymore. But is focussed on being more nurturing and having feminine qualities and being more democratic, than autocratic which is a masculine trait.

The next psycho-social variable is Fear of Success. Boys and girls once again do not seem to differ in the degree to which they fear success. Thus Hypothesis I: j is rejected and an alternative null hypothesis is set up stating that "boys and girls do not differ significantly on fear of success". This finding is contrary to Horner's (1972) finding that women fear success because of the potential for social rejection and/or the loss of femininity especially when that success involves aggression and male competition. The contrary results of the study seems to be linked to the sex role orientation of the boys in the sample. Fear of
Success and sex role orientation are to a great degree interdependent in nature. Thus as boys do not differ much from girls in their sex role orientation, this also can account for the fact that boys and girls are as likely or not, to fear success.

Among the demographic variable, no gender differences were observed for preferred Subject. Both boys and girls give almost equal importance to all subjects. However sex differences exist in the area of Hobbies and Interests. Boys prefer collection of things and sports more than girls. Girls like entertainment, performing arts and fine arts more than their counterparts. Further there are more boys having no Hobbies and Interests when compared to girls.

Parental preferences for boys and girls also seem to differ significantly. Fathers prefer their sons to take up Engineering, Sales and Business and Protective careers; and for their daughters they prefer Medical Health, Teaching and Welfare, and Administrative and Clerical.

Mothers prefer their sons to take up Engineering, Sales and Business and Protective careers; and prefer their daughter to take up Medical Health, Teaching and Welfare and Services. Thus while expectations of parents for sons and daughter is different, parents as a group appear to have similar expectations from their children i.e. traditional sex compatible careers. Thus Hypothesis I : k has been partially accepted therefore a more relevent hypothesis is framed that "Significant sex differences exist for Hobbies and Interest and Preferred occupation for Son/ Daughter by Mother and Father".

Concluding this section, it is clear, likes always that gender plays a major role in behavioral variability.

The deliberations of this discussion chapter, denote that Career Preference is not a choice made in an ivory tower of isolation. Contrarily it is influenced by behavioral variability accountable in terms of personality type, specific hemispheric functions, gender differences as well psycho-social factors such as educational interest and sex role orientation and inimitably demographic/social variables.
COLUMN GRAPH SHOWING FREQUENCY OF INDIVIDUALS PREFERING DIFFERENT CAREERS WITH HIERARCHICAL LEVELS OF CAREERS PREFERRED

CAREER PREFERENCES WITH THE LEVEL PREFERRED

- LEVEL 1
- LEVEL 2
- LEVEL 3
Figure 2.

Pie Chart Showing
Percentage of individuals preferring the three hierarchical levels of careers.
Column graph showing the frequency of the 16 Personality Types (as measured MBTI Form G)

**KEY**

1. ISTJ
2. ISFJ
3. INTJ
4. INFJ
5. ISTP
6. ISFP
7. INTP
8. INFP
9. ESTJ
10. ESFJ
11. ENTJ
12. ENFJ
13. ESTP
14. ESFP
15. ENTP
16. ENFP
Figure 4.

PIE Chart showing the percentage of individuals preferring LEFT, RIGHT and BALANCED hemispheric preference.

- LEFT: 3, 52%
- RIGHT: 1, 26%
- BALANCED: 2, 22%
Pie Chart showing percentage of individuals with differing SEX ROLE ORIENTATIONS.

- **1. MASCULINE**
- **2. FEMININE**
- **3. ANDROGYNOUS**
- **4. UNDIFFERENTIATED**