

**AN UNDERGRADUATE SURVEY: WHY DO STUDENTS ENROL
TO STUDY PSYCHOLOGY?**

**Submitted in partial fulfillment
of the requirements for the degree of Master of Social Science
in Counselling Psychology
in the School of Psychology,
University of Natal, Pietermaritzburg.**

Unless specifically indicated to the contrary this project is the result of my own work.

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August 1999

ABSTRACT

This endeavor emerges out of a context of widespread consultation around a clearer, internationally recognizable practice framework for psychology in South Africa, as well as the implications of programme design as demanded by current tertiary education restructuring. This climate of change has prompted the investigation of ideas for restructuring undergraduate psychology courses to meet the needs of the students, the profession and the society. A specially designed questionnaire and the NEO-Five Factor Inventory were administered to 508 psychology students at all levels of undergraduate study. Analysis focused on why students chose to study psychology at university, and situated this within career choice theory as well as the effects of personality, gender and population group membership. Results reflect two main student trends: students who are interested in a career in psychology, and those who see psychology as an adjunct to other career choices. The importance of broader national and global trends on the psychological discipline in a multicultural and diverse context is emphasized.

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1. INTRODUCTION

Recent years have been marked by a general rise in professional awareness concerning the relevance of psychology in South Africa. Policy makers have highlighted that changing needs, demands and circumstances demand a revision of the practice framework for the field of psychology, including how students should be trained in psychology (PsySSA, 1998).

In this way contemporary psychology is undergoing a process of transition. In this climate of change the training model envisioned for psychology students is one that meets the needs of the students, the profession and the society. Ideally, to accomplish this we require a keen understanding of students and what motivates them to choose psychology as a subject and/or a career. Left unexplored, this area would constitute a loss of vital insight both for the profession and its training schools. To date useful questions remain unanswered.

The present study, therefore, aims:

- To know whom our students are demographically, personality- and performance-wise.
- To gain an understanding of how the students' needs impact on departmental policy and course construction. For example, to ascertain the relative demand for dedicated versus general degrees in psychology.
- To uncover and air the reasons why undergraduate students choose to study psychology as a subject and/or pursue it as a career.
- What students would do if access to a psychology course were limited.
- To explore the effect of personality, gender and population group differences on psychology as a career choice.
- To situate all local results in a broader context and develop an awareness of the impact of major national and global trends on the discipline of psychology as well as its students.

In order to achieve these goals, a detailed review of current local, national and global trends and their impact on the psychological discipline is called for. A thorough understanding of career choice theory and the effect of variables, such as personality, gender and population group, are also essential. And although there is a scarcity of research investigating why people choose to study psychology, a comprehensive review of available research is nonetheless required.

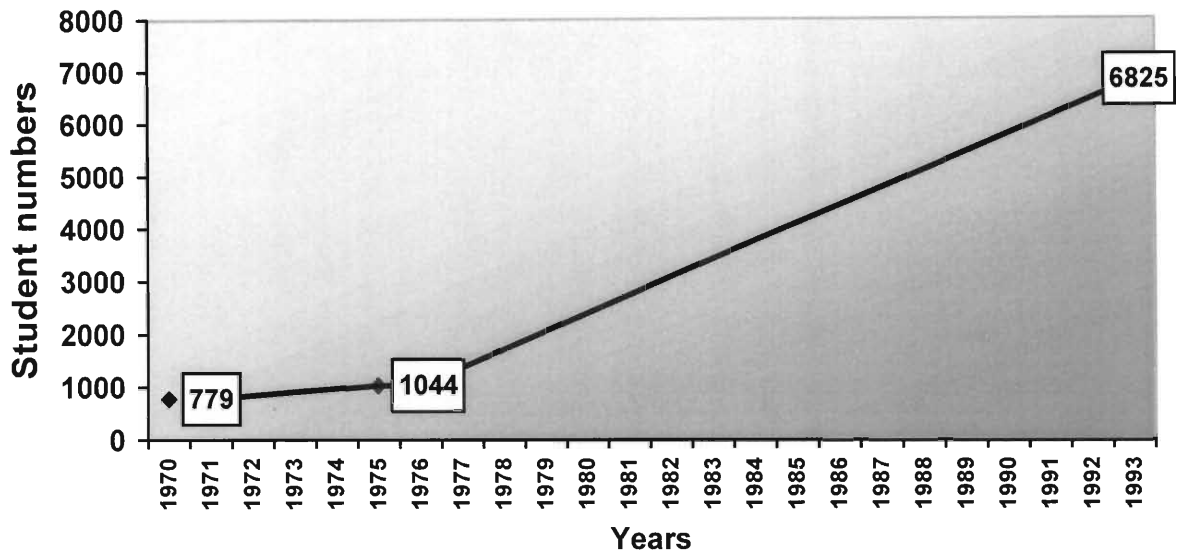
2. LITERATURE REVIEW

2.1 CURRENT STATUS AND TRENDS IN PSYCHOLOGY

2.1.1 Psychology graduate increases

Several earlier writers have drawn attention to the popularity of psychology as a major discipline for study in South Africa. Raubenheimer (1981) pointed to what he thought was the rapid growth in psychology majors between 1970 and 1975, during which one in three graduates in the humanities was a student with a major in psychology. These figures show an average growth rate of approximately 6.8% per year. If one extrapolates Richter et al.'s (1998) more recent statistics, the period between 1975 and 1993 shows a more pronounced trend with an average annual increase of approximately 30.8%. Comparable growth occurred in postgraduate studies. Raubenheimer's figures, together with Richter et al.'s statistics, show the extremely rapid growth in students majoring in psychology in South Africa from the mid-1970's to 1993. Combining these two sources of information indicates the growth from 1970 to 1993 as depicted in Figure 1.

Figure 1: South African students majoring in Psychology (1970, 1975 & 1993)



Further afield similar trends are apparent. Research on the status of the undergraduate major in psychology in America revealed that after several years of zero or negative growth, the psychology major is now increasing (McGovern, Furumuto, Halpern, Kimble, & McKeachie, 1991 in Shepperd, 1993). Studies in the United Kingdom have shown that the year-by-year increase for degrees in psychology is somewhat erratic, but the 14% increase of 1997 over 1996 is a little less than the average rate of increase over the last approximately 10 years (Holdstock & Radford, 1998).

Although the increase in number of psychology majors is widespread, there is a surprising lack of analysis of this trend in the relevant psychological literature. This may indicate that many departments are either ill informed about trends in their own student body and effective methods for dealing with increasing student numbers, or that they see it happening but have carried out no published research in the area (McDonald, 1997).

Shepperd (1993) explores the increased numbers of undergraduate psychology majors and considers the impact of this increase. Despite undergraduate student:faculty ratios reaching as high as 50:1 (Shepperd, 1991 in Shepperd, 1993), many departments have not received comparable increases in faculty, staff, and operating budgets (McDonald, 1997). Although growing numbers may affirm strong departmental teaching and demonstrate the overall health of the discipline, there are many disadvantages to this influx. For both students and staff these include: sacrifices in the quality of education; larger lecture classes; and a decrease of class discussion, writing assignments and laboratory work. In addition for staff, the teaching becomes less rewarding and there is a lowering of academic productivity.

McDonald (1997) and Shepperd (1993) also explore strategies to limit or manage growing numbers. Examples include: hiring new faculty and increasing budgets; establishing criteria and/or caps for admission; a rigorous curriculum that encourages students to self-select out of psychology; requiring application essays; and making use of multiple regression procedures to develop a prediction model. For example, do students in psychology with mathematical training fair better than those without? Should one, therefore, introduce a prerequisite course in Mathematics or Statistical Methods?

Shepperd (1993) cautions psychology departments facing the problem of too many majors not to adopt predictors blindly. Rather, he suggests that a department should develop its own prediction model based on data from its own psychology graduates and tailored to its specific needs. Departments, particularly in a South African context, may not want to apply a weighted prediction model indiscriminately. Instead they may want to establish an affirmative action plan to ensure that previously disadvantaged students are included in the major, and the effect of mathematical prediction models needs to be considered.

McDonald (1997) points out that previous authors have not always considered the impact of gender in their prediction models (Meeker, Fox, & Whitley, 1994, Shepperd, 1993 in McDonald, 1997). Hedges and Nowell (1995) showed that a premajor course requirement that emphasizes credits in science and mathematics may be more difficult for some prospective female majors, whereas a premajor course requirement that emphasizes credits involving reading comprehension, writing, perceptual speed, and associative memory may be more difficult for some prospective male majors (in McDonald, 1997).

Departments should, therefore, guard against adopting a selection procedure based solely on a statistical regression analysis that ignores known gender effects. In the same way a psychology department, situated in a broader South African context of socio-economic and political changes, should approach prediction models with caution. Care should be taken not to implement choice-limiting strategies without a thorough understanding of the consequences of those decisions on already disadvantaged students.

The surge in the total number of psychology graduates is a serious matter, but it should not detract from the simultaneous gender shift. This gender shift, coined the 'feminization' of psychology, may be one of the most important demographic developments in psychology and some other disciplines during the 20th century and possibly the 21st century as well (McDonald, 1997). Information from many sources will be needed to understand the feminization of, and corresponding male flight from, psychology (Metzner, Rajecki & Lauer, 1994).

2.1.2 The 'feminization' of psychology in South Africa

The global phenomenon of increasing numbers of women in professions has been intensively studied and well documented. This trend has been noted for psychology in many countries around the world (Ostertag & McNamara, 1991). It has been described by Richter and Griesel (1999) as "one of the major global and ecological movements of our time" (p. 134).

At the end of 1996 in South Africa, there were equal numbers of registered male and female psychologists (2130 and 2125). However, this contemporary parity has been brought about by dramatic historical adjustments with a 'cross-over' in the late 1980's, culminating in the 1995-1996 biennium with 70% of all newly registered psychologists being female. The proportional adjustment has come about – seemingly not because of an efflux of men from the profession¹, but because of a substantial increase in psychologists generally, most dramatically around the late 1980's, an increase largely taken up by women (Richter & Griesel, 1999).

¹ At least a relationship has not been clearly discerned to date; although there is a notable drop in male registrations in the last biennium analysed, 1995-1996 (Richter & Griesel, 1999).

Despite this aforementioned increase, South African women are not showing corresponding gains in areas which confer status and influence. Rosenzweig (1994) describes how this trend has led to what he has coined the 'professional devaluation' of psychology, which can result in lower income and decreased status.

Unlike in North America, there is, to date, no firm evidence that increasing numbers of women are influencing the study of psychology in South Africa to be redirected from what is called basic science to applied research. However, there does seem to be evidence of diversification in topics and subjects of study (Richter & Griesel, 1999). There are some indications that the greater number of women in South African psychology, as has happened elsewhere, will create a path towards a more diversified discipline, with a greater emphasis on women's issues (Ostertag & McNamara, 1991).

Women's need to balance work commitments with undiminished family and domestic responsibilities may be a strong force driving women into the profession and then restructuring their professional lives. For example, many professional women psychologists in South Africa appear to be practicing their profession in a part-time, privatized way which maintains flexibility and allows them to meet their various family responsibilities (Richter & Griesel, 1999).

The increase in women psychologists has also been interpreted as resulting from the emergence of social service-oriented economies and an emphasis on the need for specialized knowledge to solve major societal problems (Pion et al., 1996 in Richter & Griesel, 1999). This trend towards service has led to current ideas concerning the restructuring of professional psychology in South Africa in an effort to better serve those needs.

2.1.3 Changes in the professional field of psychology in South Africa

As mentioned above, there is presently a process underway towards a revised professional practice framework for the field of psychology in South Africa. “The need to revise the framework arises out of changing needs, demands and circumstances in our communities and society, either at present or expected in the future” (PsySSA, 1998, p. 1). The four key areas targeted for revision are: the existence and responsibilities of helping/ caring roles; statutory control regarding registration, licensing, etc.; training models; and ensuring professional competence through continuing education. The discussion, therefore, encompasses the current and future expected context within which the profession of psychology will have to be practiced in South Africa, and proposed/ suggested criteria for a professional practice framework for psychology in the future.

With regards to training and development programmes, there is a general shift towards multiple entry and exit points. For example, three levels of psychological roles are being proposed, i.e., Level 3 – Psychologist (Specialist or Generalist Psychologist); Level 2 – Psychological Counsellor; and Level 1 – Helper. Two education and training routes are suggested: the “early specialization” (via a 3 or 4-year B. Psych – Level 2) and the current “later specialization” (via a 6-year D. Psych – Level 3). These revisions would necessitate major changes within all academic institutions with regard to course construction (PsySSA, 1998). The implications of these changes are that graduates at lower levels may be credentialed to practice, even though under circumscribed conditions. If anything, this is likely to lead to increased registration by students to study psychology.

Although crucial to current psychological practices, these trends and developments are only examples of the many global and national forces that influence students to opt into, or out of, a career in psychology and some of the ways of managing the documented influx. The following section reviews literature exploring the internal and external conditions that continue to impact on career choice. To gain a thorough understanding, it is necessary to revisit the roots of career development theory and practice.

2.2 CAREER CHOICE/ DEVELOPMENT

2.2.1 General theories of career choice

2.2.1.1 Theories of career choice/ development

In the wise choice of a vocation there are three broad factors: (1) a clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations and their causes; (2) a knowledge of the requirements and conditions of success, advantages and disadvantages, compensation, opportunities, and prospects in different lines of work; (3) true reasoning on the relations of these two groups of facts (Parsons, 1909, in Brown, Brooks, & Associates, 1990, p. 1).

The roots of career development theory and practice can be traced to 1909 when Frank Parsons summarized the first conceptual framework for career decision making and thus the first guide for career counsellors. His influence is seen, for example, in the trait and factor approach, which is a more scientific version of Parson's matching individuals and jobs model (Brown et al., 1990).

Trait and factor theory asserts that people seek out jobs with requirements that are consistent with their personality traits. In a variation of this theme, Holland's theory sees people as choosing work environments that are congruent with their personality types. Holland's typology asserts that it is useful to characterize people according to their resemblance to six personality types and to characterize environments according

to six ideal environments (Holland, 1985). A brief description of Holland's six personality types follow:²

- **Realistic** individuals prefer activities that involve the systematic manipulation of machinery, tools, or animals.
- **Investigative** people tend to be analytical, curious, methodical, and precise.
- **Artistic** individuals tend to be expressive, nonconforming, original, and introspective.
- **Social** individuals usually enjoy working with and helping others but avoid ordered, systematic activities that involve tools and machinery.
- **Enterprising** individuals enjoy activities that entail manipulating others to attain organizational goals or economic gain, but they tend to avoid symbolic and systematic activities.
- **Conventional** types enjoy systematically manipulating data, filing records, or reproducing materials (Brown et al., 1990).

Each type is assumed to flourish in an environment having the same label. More explicitly, it is assumed – other things being equal – that congruence of person and job environment leads to job satisfaction, stability of career path, and achievement (Holland, 1996).

² An updated complete description and explanation of types can be found in Holland (1997).

In 1951, Ginzberg and colleagues posited occupational choice as a developmental process that occurs throughout the life span – a process characterized by compromise because people must balance interests, aptitudes and opportunity. It was a landmark contribution that broke with the static trait and factor theory of occupational choice, and provided a psychological perspective on the career development process (Brown et al., 1990).

The sociological perspective, by contrast, stresses the cultural and social determinants of career choice. Social-class boundaries act as a critical filter for the kinds of information, encouragement, and opportunities available to the individual. Thus, the person is steered by socioeconomic factors toward an occupational role that matches his or her social status (Hotchkiss & Borow, 1990). Sociologically based theories, therefore, provided much needed guidelines for helping individuals from various socioeconomic strata, since many psychologically oriented theories appear to assume that all people function in the same manner in making career decisions, regardless of social class.

Super's theory is less interested in explaining career choice than in describing the process or evolution of choice. The focuses of this theory are on life stages and the career-related issues and concerns that occur at different developmental stages throughout the lifespan. He identifies, in career terms, the developmental tasks of each stage and highlights the importance of self-concept in the selection and implementation of career choice. He also emphasizes the interrelationship of life roles. A decision to follow a particular career is, therefore, based not only on the expected tasks involved but also on the interaction between an individual's self-concept or social identity, and their representation of that profession (Super, 1980).

“Career choice is not a single isolated decision taken by an individual, but rather an extension and implementation of the self-concept which is developed over the individual’s life span” (van der Merwe, 1993 in de Haas, van der Merwe, & Basson, 1995, p. 5). Note the use of the term ‘career’ rather than ‘vocation’; the term ‘vocation’ implies a ‘calling’, whereas ‘career’ emphasizes development across a life span – an important conceptual shift, because career choice development is not a single isolated event.

2.2.1.2 The complexities of career choice

At the risk of oversimplifying, Naicker (1994) asserts that the developmental frame of reference used to locate career guidance practices in the 1960s and 1970s was based on the theories of Ginsberg, Holland and Super. Naicker believes that these theorists stressed the importance of the role of the individual but underplayed the role of social forces. They argue that people enter occupations after careful and systematic consideration of their personal preferences. This explanation of occupational choice is an exaggerated one, Naicker argues, since personal preference in choosing careers is seldom conducted in such a straightforward, systematic, and objective way.

Naicker (1994) states:

When people are faced with alternatives in making choices, other factors such as external social influences, and the cultural environment in which they are located, as well as their struggle to come to terms with the options available to them, also account for the way in which they are channeled towards one occupational stream or another (p. 31).

In some ways career choice represents the last in a series of decisions. Numerous issues require to be borne in mind including financial remuneration, length of training, opportunity for advancement, flexibility to accommodate future family needs, and the likelihood of employment, but ultimate choice reflects the relative importance of work and other life roles (Naicker, 1994).

Behr (1987) studied a South African group of 600 first-year University of Durban-Westville students. He found that students link their university education with job opportunities, but in making their decisions, the importance of interest and personal satisfaction in structuring their subject and course choices are also borne in mind. Behr posits that career decision making is primarily a matter of personal choice, and extraneous influences such as peer and parental advice are largely ignored, though guidance from teachers and school counsellors is considered.

Feather (1975) also noted that career choices are influenced by significant others, and are limited by a person's social, economic, and educational milieu. Decisions are, therefore, mediated by internal, as well as external considerations to the person.

Despite (or rather because of) the complexity of these and other issues, theories and practices of career development have proliferated. Unfortunately most of these theories assume a degree of free choice, and constrained career decision making remains an area warranting further research.

2.2.1.3 A theory for South Africa

In an attempt to capture the complexity of this area of study Vondracek, Lerner and Schulenberg (1983) proposed that “a theory of life-span vocational role development must meet the conceptual and methodological requirements of a *developmental* approach, that it must contain a *contextual* perspective, and that it must be *relational* in the sense that it provides for the examination of the ‘goodness of fit’ between individual and contextual development” (p. 179)³.

The consequences of this viewpoint for vocational intervention are described as a more pronounced focus on events, processes, and life periods, which are identified as antecedents of major vocational decisions. Vocational intervention is seen as a succession of procedures designed to changing personal situations as well as to changing economic and contextual circumstances (Vondracek et al., 1983). Such a theory seems capable of addressing the diversity of vocational decision-making processes in the South African population.

There are many complex variables that are intricately linked to career decision making in South Africa. This study will be limited to the variables of personality type, gender and population group. These factors will be the focus of ensuing discussion.

³ Italics in the original.

2.2.2 Personality and career choice

Since the dawn of career counselling, an assumption about the existence of a relationship between personality and career choices has been entertained. The idea that personality relates meaningfully to the kinds of careers people choose and how they perform in those careers has a long history in career psychology. For example, trait-factor/person-environment fit approaches to career choice and adjustment (e.g., Dawis and Lofquist's [1984] theory, Holland's [1997] theory,) are predicated on the notion that patterns of personality-related variables (e.g., needs, interests) differentiate people predominating in one occupational group from those predominating in others (Tokar, Fischer & Subich, 1998).

There is also much evidence that assessments of personality are significantly predictive of career choice behaviours, other career-relevant individual difference variables (e.g., vocational interests, work values), and various aspects of career adjustment (Holland, 1997; Tokar, Fischer & Subich, 1998).

2.2.2.1 The Five-Factor Model

Trait psychologists generally agree that personality is composed of a variety of traits, or dispositions to behave in certain ways, on which people differ, and that these individual differences may be organized hierarchically. Although a consensual taxonomy of personality traits does not exist, the past two decades have witnessed an emerging convergence of views regarding the structure of phenotypic personality traits (McCrae & Costa, 1997).

When a broad domain of personality attributes, assessed for a large and representative sample of adults, is factor analyzed, the resultant covariance structure most often is comprised of five orthogonal, superordinate dimensions of normal personality – usually labeled Extraversion or Surgency, Agreeableness versus Antagonism, Conscientiousness or Will to Achieve, Neuroticism versus Emotional Stability, and Openness to Experience, Intellect, Imagination, or Culture (McCrae & Costa, 1997).

The “Big Five,” as they are often called, have been recovered in factor analyses of peer- and self-ratings of trait descriptors involving diverse conditions, samples, and factor extraction and rotation methods (Digman, 1990; Goldberg, 1993; Wiggins & Trapnell, 1997 in Tokar et al., 1998). Tests of cross-cultural replicability suggest that the Five Factor Model (FFM) is a biologically based human universal – i.e., that personality is more a matter of universal human nature than of cultural construction, and that applications of trait psychology may prove generalisable across cultures and within different cultural contexts (McCrae & Costa, 1997; McCrae, Costa, Pinar, Rolland, & Parker, 1998).

Of course, the evidence for the Big Five model is far from perfect. For example, Schneider and Hough (1995) identified personality traits (e.g., locus-of-control (LOC)) not easily accounted for in the five-factor taxonomy, which have been shown to predict important job performance constructs. In rebuttal, Tokar and colleagues contend that the Big-Five taxonomy provides a useful preliminary organizational framework for most, if not all, nontrivial personality features; the model is also to date the most parsimonious and comprehensive one available (Goldberg & Saucier, 1995 in Tokar et al., 1998). Sternberg (1995) agrees that the “Big Five” theory is currently the most widely accepted trait theory that recognizes the frequent recurrence of the five

personality traits across studies and even across theorists. These dimensions are described by Costa and McCrae (1992) as follows:

- **Neuroticism (N):** The general tendency to experience negative effects such as fear, sadness, embarrassment, anger, guilt and disgust is the core of the N domain. However, N includes more than susceptibility to psychological distress as it interferes with adaptation. Men and women who score high in N are prone to have irrational ideas, are less able to control their impulses, and cope more poorly than others with stress. Individuals scoring low on N are considered emotionally stable.
- **Extraversion (E):** Extraverts are sociable, assertive and talkative people who enjoy excitement and stimulation. They tend to be optimistic and cheerful. Introversion should be seen as the absence of E, hence people described as introverted are usually experienced as reserved, independent, and even-paced. Introverts may say they are shy when they actually prefer to be alone and do not necessarily suffer from social anxiety.
- **Openness (O):** Openness to experience is much less well known than N or E. Open individuals are unconventional, willing to entertain novel ideas and experience both positive and negative emotions more keenly than closed individuals. High O scores are sometimes associated with both education and measured intelligence, and especially to divergent thinking and creativity. However, openness is not equivalent to intelligence. Individuals scoring low on the O dimension tend to be conventional in behaviour and conservative in outlook. They prefer the familiar to the novel and are less emotionally stricken.

- **Agreeableness (A):** Like Extraversion, Agreeableness is primarily a dimension of interpersonal tendencies. The agreeable person is fundamentally generous. He or she is seen as sympathetic to others and eager to help them, and believes that others will be equally helpful in return. By contrast, the disagreeable or antagonistic person is seen as egocentric, skeptical of others' intentions, and competitive rather than co-operative.
- **Conscientiousness (C):** The conscientious individual is purposeful, strong-willed and determined. High C scores are associated with academic and occupational achievement; on the negative side, conscientiousness may lead to annoying fastidiousness, compulsive neatness or workaholic behaviour.

2.2.2.2 Empirical research / literature

Tokar et al., (1998) compiled a selective review of the literature on personality and vocational behaviour from 1993 to 1997. What follows is a summary of the major themes and contributors that emerged in their review.⁴

- Personality and vocational interests overlap moderately. Specifically, Extraversion (E) and its variants are correlated substantively and positively with Enterprising and Social interests; Openness (O) and related traits are moderately positively correlated with Artistic and Investigative interests; Conscientiousness (C) and related traits are moderately positively correlated with Conventional interests; Agreeableness (A) and Social interests have a moderate positive correlation; and

⁴ The following research is cited as secondary sources reviewed in Tokar et al., (1998).

Neuroticism (N) does not overlap substantially with any of Holland's (1997) Realistic, Artistic, Investigative, Social, Enterprising, or Conventional interest themes (De Fruyt & Mervielde, 1997; Gottfredson, Jones, & Holland, 1993; Tokar & Swanson, 1995).

- In the realm of gender studies, Femininity displays higher A and C, whereas, Masculinity is associated with a combination of higher E, O, C, and low N. Femininity correlates positively with Social interests and contributes to a function that maximally separates Social (most feminine) and Investigative (least feminine) interest types (Reichel & Muchinsky, 1995). Mau, Domnick, and Ellsworth (1995) suggested that girls who aspired to gender-nontraditional careers have a stronger belief that they were in charge of their lives (i.e., more internal LOC). Dawson-Threat and Huba (1996) found that women in female-dominated majors self-reported higher levels of femininity/expressiveness than did women in male-dominated majors. Conversely, men in male- and female-dominated majors did not differ in their level of masculinity/instrumentality. Lapan, Shaughnessy, and Boggs (1996) reported a modest but significant inverse relation between extraversion and choice of a math/science major among first-year college students.
- The relatively small literature on career processes during this period suggests the following: (a) greater N is related to lower frequency and quality of job search activities, less congruence, and greater career indecision, (b) greater E is linked to higher frequency and quality of job search activities, as well as to more job change, and (c) people with a more internal LOC fare better in other change-related processes (i.e., career progression, retirement, initiating mentoring relationships) (Leong & Chervinko, 1996; Meldahl & Muchinsky, 1997; Meyer & Winer, 1993).

- Greater job satisfaction is related to lower N and its variants, as well as to higher E and related traits (Decker & Borgen, 1993; Spector & O'Connell, 1994; Tokar & Subich, 1997).
- In general, personality dimensions reflecting N, Type A⁵ tendency, and an external locus of control⁶ tend to predict more negative perceptions of occupational stressors and strain or distress; further, Neuroticism appears to moderate (or inflate) the relation between stress and strain (Noor, 1997; Mughal, Walsh, & Wilding, 1996, Rahim, 1997).
- Recent research has aimed to strengthen the explanatory power of Holland's typology (see p. 10) and link it to the Big Five personality factors. For example, research with the NEO Personality Inventory (Costa, McCrae, & Holland, 1984) implies that Artistic and Investigative interests on the Self-Directed Search have substantial correlations with Openness on the NEO, and that Openness is also associated with more frequent job changing in a large adult sample (Holland, 1996; McCrae & Costa, 1990). The NEO-FFI has been instrumental in investigating relationships between personality characteristics and career choices. Anthony (1998), for example, found that there existed a significant dependence between technophobia and Neuroticism as well as technophobia and Openness (n=176) which would have obvious carryover effects into career choices within the computer fields.

⁵ Type A temperaments are characterised by excessive drive and competitiveness, an unrealistic sense of time urgency, inappropriate ambition, and a need for control (Reber, 1985).

⁶ An individual who has an external locus of control tends to see control as residing elsewhere and to attribute success or failure to outside forces (Reber, 1985).

2.2.2.3 The quantification/ measurement of the FFM

The NEO Personality Inventory – Revised (NEO PI-R) was developed to operationalise the five-factor model of personality, a representation of the structure of traits which has been developed and elaborated over the past four decades (Digman, 1990 in Costa & McCrae, 1992). The NEO-Five Factor Inventory (NEO-FFI) is a shortened version of the NEO PI-R that provides a brief, comprehensive measure of the five domains of personality. It consists of five 12-item scales that measure each domain. Information on specific facets within each domain is not provided, and the shortened scales are somewhat less reliable and valid than the full NEO PI-R domain scales. On average, the shorter scales of the NEO-FFI appear to account for about 85% as much variance in the convergent criteria as do factor scores. As is true in all cases where abbreviated scales are formed, some precision is traded for speed and convenience (Costa & McCrae, 1992).

2.2.3 Gender and career choice

2.2.3.1 Context

On the eve of the 1970's, Crites (1969) eliminated women from consideration in his classic Vocational Psychology with the remark that the literature was too disparate to warrant review (in Fitzgerald & Rounds, 1994). Shortly thereafter, Bingham and House (1973) found that career counsellors typically knew little about the realities of women and work, believing that women were rarely discriminated against and that there must be something wrong with a woman who held a "man's" job (in Fitzgerald & Rounds,

1994). Less than 25 years later, journals are filled with articles on women and work and it is clearly one of the most active areas of research in career psychology (Fitzgerald & Rounds, 1989 in Fitzgerald & Rounds, 1994).

The majority of this work has focused on women's career choices, including the question of why and under what conditions they choose to work at all. As occupational involvement became more common for women, the focus began to shift to the nature and degree to which choices were traditional or nontraditional. A variation of this work involved examination of the degree to which a choice involved a science versus nonscience focus (Goldman & Hewitt, 1976), science being an historically atypical pursuit for women (in Fitzgerald & Rounds, 1994). Contemporary studies continue to focus on the content and nature of women's choices, and the overwhelming majority of interventions that have been reported are designed to facilitate the choice process or expand the options that women consider (Fassinger, 1990 in Fitzgerald & Rounds, 1994).

2.2.3.2 Theory

Women's career development is reportedly more complex than men's, with a number of factors such as marriage, as well as family plans and realities, contributing significantly to that complexity (Fitzgerald, Fassinger, & Betz, 1995). Further, as noted by Ritchie et al. (1997), many women "see their personal and career lives as inextricably linked" (p. 144). As a result, theories have been extended to more adequately account for women's career issues (e.g., Super, 1980), and "gendered" models of women's career development have received more attention, including research into women's career decision making processes (Hackett, 1997).

Fitzgerald and Rounds (1994) argue that the theory of work adjustment (TWA) from the perspective of career psychology for women is not sufficiently comprehensive to account for effects of the work-family interface and sexual harassment on the work adjustment process. This intellectual tradition has typically dichotomized the concerns of work and family, thus reducing their usefulness for women for whom these domains are generally closely connected. For example, it has been asserted that woman may prefer work that can accommodate family commitments. The result is the absence of any systematic framework for understanding women's work behaviour that is both theoretically grounded and parsimonious, yet sufficiently comprehensive to account for the complex realities of women's lives.

2.2.3.3 Theoretical constructs

In a time when traditional sex-roles are being challenged and changed, there still exists a gender emphasis that permeates most facets of society. "In western societies certain psychological characteristics have traditionally been viewed as either 'masculine' or 'feminine'. Feminine characteristics include being affectionate, gentle, sensitive to the needs of others, tender and warm. Masculine characteristics have included being aggressive, ambitious, assertive, analytical and dominant" (Bern 1974, cited in Nelson-Jones, 1991, p. 33). The predominant traditional roles of women have been those of nurturers and social harmonisers. Men's traditional roles have focused on being breadwinners and disciplinarians (Nelson-Jones, 1991). For example there were certain traditional feminine occupations – nursing, teaching, secretarial work – which reflected what was/is considered to be women's nurturing nature.

Allegedly there are significant changes currently under way in how gender-roles are defined, negotiated and end up in practice. There has been an increase in talk about psychological androgyny. The androgynous male or female is flexible masculine/feminine as circumstances warrant (Bern, 1981 in Nelson-Jones, 1991). Lazarus (1996) believes that an effective psychotherapist must have both tender-minded and tough-minded qualities and, like an “authentic chameleon”, must know what approach to use when. He believes that “a flexible repertoire of relational styles... seem to enhance treatment outcome” (p. 143).

In the same way Apter and Smith’s Reversal theory⁷, which had its genesis in the 1970’s, posited that humans are inherently inconsistent but that these inconsistencies have certain identifiable patterns. These subjective experiences are allegedly bistable rather than homeostatic; that is, people have two stable states on certain phenomenological dimensions which they frequently switch between. Four metamotivational pairs attempt to explain a person’s transactions with others/ with objects in the environment. One such pair is the Mastery/ Sympathy transaction and its relevance to gender will be elucidated below.

When people are in the *mastery state*, they view the situation they are in as a competition or struggle. They are focused on control, value toughness and strength and are seen as taking or yielding. When people are in the *sympathy state*, they view their situation in terms of harmony or unity. They are focused on caring, value tenderness and sensitivity, and are seen as giving or being given to. O’Connell and Apter (1993) argue that the mastery and sympathy states differ in one’s interpretation of what might

⁷ A detailed account of this theory can be found in Apter, Fontana & Murgatory (1985), Kerr, Murgatroyd, & Apter, (1993) as well as O’Connell & Apter (1993).

be termed “felt toughness” or “felt tenderness”. In the mastery state, it is important and valued to be tough; in the sympathy state it is important and valued to be tender (Apter, Fontana & Murgatory, 1985). Even with emerging constructs like ‘psychological androgyny’ one continues to associate these two states as stereotypic of masculine versus feminine characteristics.

2.2.3.4 Career counselling and education

Research into subjects such as mathematics and science has indicated a detrimental effect on girls in mixed sex teaching (Economic and Social Research Council, 1988; Rennie, 1987; Smith, 1986 in Lawrie & Brown, 1992). Teachers in mixed schools are said to make gender more salient and thus reinforce existing sex stereotypes creating somewhat of a funnel in career choice (Clarricoates, 1983; Stanworth, 1981; White, 1983 in Lawrie & Brown, 1992). In addition, it would appear that school subjects have either “masculine” or “feminine” images (Ormerod, 1981; Powell & Batters, 1985 in Lawrie & Brown, 1992).

Kelly and Smail (1986) found that female pupils with strong sex stereotypes were less interested than other pupils in studying science subjects that were traditionally associated with members of the opposite sex (in Lawrie & Brown, 1992). Research has also suggested that pupils in mixed sex schooling are more likely to choose subjects that are perceived to be appropriate for their gender than pupils in single sex schools (Dale, 1974 in Lawrie & Brown, 1992).

Gender has been linked to disparity in the uptake and experience of education, both within schools and in further and higher education. Despite an overall rise in the proportion of female undergraduates, the physical sciences and technological courses have not succeeded in attracting equal numbers of female applicants (Lightbody & Durndell, 1996). A number of explanations have been proposed for this imbalance; for example, the sex stereotyping of science and technology (Cockburn, 1985; Culley, 1988; Gatti, 1992; Pratt, Bloomfield & Seale, 1984; Whyte, 1986 in Lightbody & Durndell, 1996). The allegedly ‘hidden curriculum’ within schools is said to actively reinforce gender stereotypes and that young people have preconceived ideas about careers in science and technology (Fuller, 1991 in Lightbody & Durndell, 1996).

2.2.3.5 Career choices

Lightbody and Durndell (1996) have revealed a picture of gender dependent attitudes and behaviour, particularly in the case of science. They cite studies showing that boys prefer science and technology subjects, while girls tend to prefer language, social studies, and humanities (e.g., McTeer, 1986; Shemesh, 1990). Zuckerman and Sayre (1982) reported that while respondents expressed predominantly non-stereotypic attitudes toward occupations and activities in general, when they chose careers for themselves, their choices were very traditional (in Lightbody & Durndell, 1996). Bem (1993) proposed that hidden or subtle beliefs about sex and gender roles are so deeply entrenched in society that they are no longer visible. She claims that the pervasive qualities of what she calls “gender lenses” permeate our entire culture (in Lightbody & Durndell, 1996).

Lightbody and Durndell (1996) suggest that although 'sex' was not a central characteristic in respondents' schematic representations of social or technical roles, or career aspirations – that gendered career choice, whether or not it is instigated at a conscious level, persists. It is not so much that science and technology are perceived to be 'masculine' – 'traditional' may be a more apt description. Unless these disciplines reflect the changing society in which they are embedded the situation is unlikely to change.

2.2.4 Population group and career choice

2.2.4.1 Context

A brief overview of the South African context is provided as a backdrop to some of the issues confronting South African career psychologists. Stead and Watson (1998) argue that given the context, it is important to progress toward the indigenisation of career research and counselling in South Africa.

In 1995 South Africa was comprised of about 43 million people of whom 33.7 million were Black, 5.3 million White, 3.7 million Coloured, and 1 million Asian. South Africa's multicultural environment comprises 11 official languages, with Zulu (22%), Xhosa (18%), Afrikaans (15%), Northern Sotho (10%), and English (10%) being the most common home languages. Although South Africans elected a new democratic government in 1994 and adopted a new constitution in 1996, the nation is still struggling to overcome problems associated with its history of apartheid (Stead & Watson, 1998).

Current problems include a 29% unemployment rate and an unsatisfactory 3.1% growth rate (South African Institute of Race Relations, 1997 in Stead & Watson, 1998). According to the National Manpower Commission (1994), the growth rate needs to be at least 8-10% if the unemployment backlog is to be addressed (in Stead & Watson, 1998). Unemployment is probably fueled by education factors such as a population that had a mean of 6.9 years of schooling in 1991 (South African Institute of Race Relations, 1997 in Stead & Watson, 1998); and the recent deterioration in the matriculation examination results. De Lange (1981) indicates that only between 2% and 5% of African school entrants obtain matriculation (in Naicker, 1994).

Compounding the problems of unemployment are the occupational aspirations of most Black students, which tend to be poorly matched to labour market trends (Watson, Foxcroft, Horn, & Stead, 1997 in Stead & Watson, 1998). Mkhize, Sithole, Xaba and Mngadi's (1998) research into career decisiveness, indecisiveness, and career indecision yielded results that show that Black high school boys and girls know what career they want to pursue, but that they lack the occupational knowledge and information about the job market due to the absence of guidance.

Historically, certain cultural and political factors have resulted in Black people being excluded from participating in the process of industrialization in South Africa. They were used to provide mainly cheap, unskilled manual labour (Biesheuvel, 1974 in Cloete, 1981). The position of Black people, however, changed dramatically during the seventies. Although numbers were still small, Black people had gained entry into almost the entire range of the occupational structure (Department of Labour, 1977 in Cloete, 1981).

This process of integration depends not only on legislation, but on the intention of Black individuals to enter occupations in all the different sectors and levels of the economy. Unfortunately, when making vocational choices Black people had to consider other factors that did not influence the decision of White people. For example, they had to take into account a variety of official and unofficial racially discriminatory practices operating in the labour market (Cloete, 1981).

The multicultural and economic context of South Africa is an important factor in understanding career development and yet it has received insufficient attention in South African career literature (Stead & Watson, 1998). South Africa is a country undergoing considerable change; hence the dynamic interaction between the environment and individual factors cannot be ignored by either career counselors or career researchers (Stead, 1996).

2.2.4.2 Theory

South African career research has largely been dependent on the career theories and research emanating from Europe and America. These career theories, most notably those of Holland (1985) and Super (1980), have generally been accepted *a priori* by researchers and counsellors. Much of the research prior to 1990 has focused on White samples (de Bruin & Nel, 1996 in Stead & Watson, 1998) and has assumed that the Western heritage of White South Africans would justify the use of theories, constructs, and instruments derived from European and American contexts. The use of Western approaches was then extended and assumed to have similar meaning and relevance for different ethnic groups.

Much of South African career research has been characterized either by atheoretical perspectives or by brief references to the applicability of American career theories in South Africa (Nel, 1987 in Stead & Watson, 1998). Little effort has been devoted to examining the appropriateness of these theories in the South African context (Stead & Watson, 1998).

Since 1990 researchers have started to question the universality or even appropriateness of existing career theories for South Africans. Naicker (1994) has emphasized the importance of sociological factors in the career choice of South African youth and criticized the efforts of the early developmental and trait-and-factor theorists for largely omitting contextual factors in career choice.

Stead (1996) has suggested that the developmental-contextual approach of Vondracek et al. (1983) is a useful framework for explaining the career development of Black adolescents during both the pre- and post- apartheid years as this approach focuses on the dynamic interplay between individual and contextual factors. The usefulness of this approach is that it considers career development to be a lifespan phenomenon that is best understood from multidisciplinary and contextual perspectives. It encourages researchers to examine career issues from a holistic perspective and not solely on reductionistic and linear approaches based mainly on the individual (Stead & Watson, 1998).

Due to a lack of an appropriate framework or clarity in current South African research there is a movement afoot to employ an indigenous approach as a way of understanding career psychology within the South African context. This approach emphasizes the understanding people have of themselves and the world and is embedded in an ecological context. It avoids excessive European and American influence and underscores the employment of multiple research methods. It can be described as the search for a new identity in South African career psychology. This identity need not be divorced from Western psychology but it should be intimately linked to the sociocultural milieu in South Africa (see Kagitcibasi, 1992; Kim & Berry, 1993; Moghaddam, 1990 in Stead & Watson, 1998).

2.2.4.3 Theoretical constructs

The use of Western values and beliefs such as individualism, rational and independent career decision-making and the nuclear family structure (Katz, 1985) in South African research have precluded the study of variables prevalent in African cultures. For example, the Xhosa expression “umntu ngumntu ngabantu” (i.e., a person is a person through others) has yet to be explained in relation to the career choice process. This sense of community may be related to variables such as career maturity and life roles in the South African context (Stead & Watson, 1998).

Since career decision-making may be regarded as essentially socially determined in the Black community (Cloete, 1981; Saaiman, 1995), it is possible that the family would exert a significant influence on the career development of the adolescent in this population group. The communal system and people-oriented child-rearing practices bring about the perception that something has to be done for the community via a

people-oriented career. Meyer (1993) established that the service motive towards their own community is an important motivational force in the process of career decision-making (in Saaiman, 1995).

A second perspective is offered by Apter and Smith's Reversal Theory for the transactional pair called Autocentric/ Allocentric. People in the *autocentric state* are concerned with what happens to themselves in the course of an interaction with other people or with objects. Thus, one's satisfaction or dissatisfaction with the outcome of an interaction depends upon what happens to oneself. On the other hand, when people are concerned with what happens to another person or group in the course of an interaction with them, they are in the *allocentric state* (Apter et al., 1985). A parallel may be *tentatively* drawn between the individualistic and collectivist cultures represented among the various population groups of South Africa.

2.2.4.4 Career counselling and education

The importance of applied psychology and career counselling for promoting the psycho-social development of pupils is being increasingly acknowledged (Kelly, 1989; Roberts, 1981 in Naicker, 1994). Provision of career guidance in schools across South Africa has varied. Tremendous discrepancies existed, particularly in the Apartheid era (de Haas et al, 1995). Naicker (1994) asserts that the imbalance of current career counselling services and resources between sections of society as well as current career practices and assumptions needs to be questioned.

Donald and Csapo (1989) indicate that the average ratio of educational psychologists to pupils in Black education departments is about 1:30 000; Indian pupils have 1:8 800, Coloured pupils 1:9 000; and White pupils 1:2 750 (in Naicker, 1994). The de Lange Report (1981) also states that “the best provision (of guidance) although inadequate, exists for Whites and Indians. The guidance for Coloureds is totally inadequate while there is little or no guidance for Blacks” (in Naicker, 1994, p. 29).

South African research has focused on career education programmes rather than on career counselling. The primary focus has been on diagnosis rather than issues of process and outcomes with external factors shaping service provision (de Bruin & Nel, 1996 in Stead & Watson, 1998). Without a recommitment to career counselling, counselors will leave disadvantaged students adrift in a flood of new labour market opportunities (Hawks & Muha, 1991).

It is clear that South Africa is a developing country and is only in the initial stages of providing effective and contextually relevant career programmes to all its citizens. Naicker (1994) asserts that training programmes for school career counsellors should be made more relevant to prevailing practices, and adopt different paradigmatic perspectives when viewing career counselling for a new South African society. Youngsters must be encouraged to discover their strengths and weaknesses and to be able to respond creatively to the prevailing socio-economic constraints that influence job choices.

2.2.4.5 Career choices

A comparison of the choice patterns of young Black people with that reported in other countries, reveals a much closer resemblance to developing African states than to White South Africa or other industrialised countries. Features of this pattern are the limited number of occupations chosen, and a high level of decisiveness (Cloete, 1981).

Hartman (1988) argued that political, industrial and technological developments had resulted in many Black adolescents making career choices that were based on trial-and-error simply because they lacked both occupational information and the ability to integrate this information with self-knowledge (in Watson & Stead, 1993). Mkhize et al. (1998) confirmed this trend a decade later. The situation remains compounded by the negative impact that a political system of Apartheid has had on black adolescents' self-concepts, the hopelessly inadequate educational system they have been belaboured with, and their consequent unrealistic expectations (Watson & Stead, 1993).

Black career choices tend to be concentrated most in the social services, business organisation and educational fields and least in the outdoor, arts, practical and technical fields (Cloete, 1981; Spence, 1982; Watts, 1980 in Watson & Stead, 1993).

Explanations for this trend include the following:

- Traditional African society has favoured communal economic and socio-political systems, as well as people-oriented child-rearing practices.
- Black South Africans are humanistically inclined and thus tend more to people- rather than thing-oriented occupations. For example the three most popular occupations, teaching, nursing and medicine, are people-oriented (Cloete, 1981).

Although this may be a result of their historical lack of exposure due to the apartheid policy.

- Black South Africans have been limited historically to social careers. This led to limited role models, which affected occupational foreclosure.
- Parents have tended to be inadequate sources of occupational knowledge. Matsebatlela (1986) points out that Black parents' career advice is usually limited to (a) the need to bring in a regular income, and (b) the need for social and professional status.

While personal ambition and motivation are important considerations for socially advantaged students, most disadvantaged school-leavers are compelled to take whatever jobs are available. The growth in student numbers, high failure and drop out rates, and limited job opportunities mean that more and more school-leavers are chasing fewer jobs. Under such circumstances career counselling should not only try to get young people to develop personal decision-making skills, but also help them to adjust successfully within the opportunity structures open to them.

In sum, the opportunity composition includes factors such as personality, gender, population group, economic conditions, the family, the job market, the occupational structure, the influences of scientific discoveries and technological advances, and social and intellectual movements on the environment. Unfortunately the focus of this study only allows for detailed attention to the former three, but counsellors need to be aware of all these factors. In so doing youngsters will be taught how to negotiate their chances of obtaining jobs in a realistic way (Naicker, 1994).

2.3 WHY CHOOSE TO STUDY PSYCHOLOGY?

While turning specifically now to the factors affecting the choice of psychology as a subject to study at university, one must not lose sight of the myriad of career choice theories advocating that subject choices are merely the early steps in the long road of career choices. What follows is a review of relevant literature pertaining to subject choice, although the area remains wanting.

“While psychology students expend a great deal of effort scrutinizing the motives of individuals, the effort is not nearly so often extended to themselves. This constitutes the loss of a vital dimension of experience both for the profession and its training schools” (Solas, 1996). While motivation has been the subject of intensive psychological research (Arkes & Garske, 1977 in Solas, 1996), few studies have been conducted into the motives of those enrolling for study in the discipline or entering the profession.

There has, however, been a long-standing interest in the knowledge, beliefs, and superstitions students bring to social science courses dating back to the First World War (Conklin, 1919; Peters, 1916 in Furnham & Rawles, 1993). Nixon (1925) demonstrated an alarming amount of ignorance about psychology (in Furnham & Rawles, 1993). “To a large extent lay conceptions of psychology may have an influence on whether a prospective student chooses to read the subject; and may in part be responsible for the high drop-out rate in psychology courses... Most prospective students expressed greatest interest in clinical topics, although they were surprisingly ignorant in that area” (Furnham & Rawles, 1993, p. 248).

Though one might hope that students' interest in the discipline led them to read more widely before embarking on a course and hence have fewer misconceptions about psychology, this is by no means certain. In fact, on a multiple choice test measuring misconceptions about psychological knowledge and interests, Furnham found that although psychology students expressed more interest in psychology, they got no more answers correct than their friends studying other disciplines as varied as law and architecture (1983). Metzner et al. (1994) found that a student's contact with basic college psychology courses is a crucial element leading to a decision to major in the field.

2.3.1 Entry motives into psychology

In Queensland, Australia, Solas (1996) aimed to recover, acknowledge, and air the entry motives of first-year undergraduate students (n=98), and what most influenced their decision to major in psychology. Students evidently found it much easier to express what they wanted to achieve by choosing psychology as a career, than what they hoped to avoid. The general pattern of responses suggested that, upon entering a major in psychology, students were more self- rather than other-oriented, reflecting what O'Connell and Apter (1993) refer to as "autocentric" rather than "allocentric" personalities. The quality of giving, a quality indicative of collectivist (as opposed to individualistic) cultures was subordinate to that of taking.

Interestingly both women and men attached importance to helping others in their reasons for majoring in psychology, but women did so at an even higher frequency than men. This finding is consistent with a general pattern in the history of psychology

that higher proportions of women compared with men pursue applied careers (Scarborough & Furumoto, 1987 in Metzner et al, 1994).

Holdstock and Radford (1998), writing in the UK, believe that the present psychology degree syllabus is of more interest to females than males (judging by graduation rates). However, some males have academic interests more typical of females, and this helps to establish the 'traditional' (and also international) ratio for psychology of 75 per cent female (Radford & Holdstock, 1996). "Similar or corresponding gender effects are present in all academic subjects" (Radford, in press, p. 2).

Solas' (1996) study participants were first-year Australian undergraduate psychology students, and he describes the cohort as "characteristically female (78%); a statistic that reflects the continued feminization of the profession (Keys & Hogberg, 1990)". McDonald (1997) maintains that the number of bachelor's degrees awarded in psychology has increased by 59% since 1985 almost entirely due to an increase in the number awarded to women, which has increased by 80%.

Solas' (1996) student accounts were also marked by the tendency prevalent in psychology to stand apart from, rather than be a part of, the moral and political complexities of living. Jackson's (1994) tracer study showed the absence of psychology graduates in politics. This suggests that psychology undergraduate courses do not really address political issues and if they do, graduate skills in psychology are not sought after by politically-related employers or students choose not to exercise these skills.

The students in Solas' (1996) study wished to acquire knowledge and understanding in order, first of all, to grow and develop, and secondly to help others. The majority of students were motivated by the prospect of entering a career that promised opportunities for personal advancement, financial reward and, to a less extent, helping others. By the same token, these students hoped that through doing psychology they would avoid boring, routine, monotonous, and otherwise unsatisfying work.

2.3.2 A retrospective view of choosing psychology

Taking a retrospective view, previous surveys indicate that approximately 70% of past psychology graduates would choose to major in psychology again (Davis, 1979; Lunneborg, 1974 in Lunneborg & Wilson, 1988). Graduates rated their degrees as most valued in later years for contributing to their personal growth and providing them with a liberal arts background. They valued the psychology major least as career preparation, in spite of (or perhaps because of) the wide variety of jobs which they could enter, the majority being found in education (32%) and business related jobs (23%), with a very small percent finding psychological employment (5%) (Ware & Meyer, 1981 in Lunneborg & Wilson, 1988).

A similar South African tracer study found that, on average, graduates found their studies to have been 'valuable'. Ninety percent did not regret their study choice, stating that it had provided them with 'people-oriented' skills, allowed them to function effectively in the work place, assisted in personal development, and taught them critical and analytical thinking skills (Jackson, 1994).

Neuropsychology and Animal Behaviour were seen as the least relevant courses. The majority (77%) felt that studying psychology had positively changed the way they thought about society, others and themselves, and that it gave them insight into other's behaviour and emotion. Alternate South African majors were English and Sociology, whereas in Edey and Molin's British study English and Law most frequently accompanied Psychology (Jackson, 1994).

When the South African respondents were asked whether, with hindsight, they would choose the same major subjects 39% replied 'yes', and 61% replied 'no'. For the latter, the most popular alternative choices were commercial-related subjects (e.g., Economics, Marketing, Accountancy) (Jackson, 1994).

2.3.3 The economic relevance of the study of psychology

A major point of contention, other than the relevance of psychology in the 'New South Africa', seems to be the productivity or viability of human science in our society and economy. Godsell (1993) believes that universities no longer offer a confident promise of employment, especially in relation to humanities / arts-based graduates (in Jackson, 1994). Edey and Molin (1993) state "Investment in a university degree is a waste of money from all points of view if graduates cannot contribute to the economy" (in Jackson, 1994, p. 19).

Van Aardt (1993) proposes that a shift in the education of human scientists is needed (in Jackson, 1994). He supports a commerce-based education that improves graduates earning capacities through the acquisition of practical market-related skills and competencies, instead of satisfying the quest for knowledge, which may be interesting but of little market value. In this way, the present knowledge-based system must shift towards competency- and insight-based skills if it is to contribute more to economic development (in Jackson, 1994).

Khotseng (1993) counterargues that Van Aardt makes erroneous assumptions about the nature of development (in Jackson, 1994). The argument that humanities cannot create wealth or contribute to economic development is too simplistic. Khotseng reconsiders the concept of development, exploring aspects of social and not merely economic development, and connects it with concepts of empowerment, mastery of one's life, democracy and literacy. This argument suggests that the human sciences and natural sciences reinforce each other in a country's development.

Lund (1993) compiled a list of the top ten skills required by employers (in Jackson, 1994). Many of the skills listed are ideally associated with humanities trained graduates (e.g., language and communication skills) and this suggests that humanities and art trained graduates, including psychology graduates, are employable and marketable.

2.4 SUMMARY COMMENTS

Major national and global trends affecting the discipline of psychology as well as its students appear to be the pronounced increase of undergraduate psychology majors, the ‘feminization’ of the discipline, and the policy changes that are currently being debated in the professional field of psychology in South Africa and elsewhere.

Contemporary career choice/ development theories in South Africa are moving away from the well established but imported theories of Ginsberg, Holland and Super, and towards theories that are better suited to capture the complexity of a diverse population – a so called indigenous approach (Watson & Stead, 1998). For example, Vondreck et al. (1983) aims to adopt a holistic developmental, contextual and relational approach, which allows for the consideration of internal and external forces (e.g., personality, gender and population group) and their effect on career choice/ development.

- There is much evidence that assessments of **personality** are significantly predictive of career choice behaviours, and that the most widely accepted current theory of personality is the Five Factor taxonomy which is operationalised through the NEO PI-R and the NEO-FFI.
- Research supports the notion that society still functions through ‘lenses of **gender**’ (Bem, 1993 in Lightbody & Durndell, 1996). In other words, gender permeates every context – whether it be high school or society’s role expectations – and this in turn affects career choice in many ways.
- In South Africa, the political legacy of Apartheid has left major discrepancies in the provision of career counselling services, and the appropriateness of theory utilized has been questioned. **Population group** continues to have a profound effect on

every aspect of career choice (e.g., self-confidence, individualism versus collectivism, economic constraints, etc).

Undergraduate psychology students are reported to have high levels of interest in the subject (especially in clinical topics), as well as surprising ignorance of the discipline. They seem to be more self- rather than other-oriented, focusing on the acquisition of knowledge and understanding to firstly grow and develop, and then to help others.

3. METHOD

3.1 SAMPLE AND PROCEDURE

All undergraduate psychology students at the University of Natal, Pietermaritzburg were identified as the population (N=681). Data collection took place on the 20th & 21st April 1998, two weeks into the second term of the first semester. Both the personality inventory and the questionnaire were administered in forty-five minute lecture periods to each of the three years of the undergraduate student body, and were handed in by the students on completion at the end of the lecture period. This procedure was adopted to maximise the percentage return.

Students were requested to complete the personality inventory and the questionnaire as part of a study by the Psychology Department on student motivations. Completion of the tasks was not related to course requirements and some students chose not to participate in the research. Anonymity of the questionnaires ensured that there was no violation of confidentiality, and there were no procedures in place to identify students who did not participate in the study.

The sample collected, 508 students, represented 75% of the undergraduate psychology group. The bulk of the 25% loss was most likely due to absenteeism on the days of administration and/or lack of interest. One per cent (n=5) of the NEO-FFI forms were discarded as they were deemed invalid, but their questionnaire responses were still utilized, therefore, the total sample size did not decrease for these indicators.

3.1.1 Instruments

Form S of the NEO-Five Factor Inventory (NEO-FFI) as well as a specially developed questionnaire entitled “Department of Psychology Undergraduate Survey” were utilised in this study.

3.1.1.1 NEO-FFI

Form S of the NEO-FFI is a 60-item version of the NEO PI-R (Form S) that provides a brief, comprehensive, cross-cultural measure of the five domains of personality – currently the most widely accepted trait theory (Costa & McCrae, 1992). It consists of five 12-item scales that measure each domain, namely: Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C). Information about specific facets within each domain is not provided, and the shortened scales are somewhat less reliable and valid than the full NEO PI-R domain scales.

Internal consistency has been calculated previously using coefficient alpha. Coefficients were .86, .77, .73, .68, and .81 for N, E, O, A, and C, respectively. All these values are smaller than those for the corresponding NEO PI-R domain scales, but are nonetheless regarded as acceptable (Costa & McCrae, 1992, p. 53). The NEO-FFI is useful when time for testing is limited and global information on personality is considered sufficient – as in this study. There is no time limit for the NEO-FFI but most respondents require only 10 to 15 minutes to complete it. Completed inventories were scored by hand to obtain domain and T-score ranges.

3.1.1.2 Department of Psychology Undergraduate Survey (see Appendix 2)

In the first part of the questionnaire students were requested to supply demographic information including:

- a) Year of registration
- b) Age
- c) Gender
- d) Marital status
- e) Ethnic group
- f) Nationality
- g) Provincial non-term home
- h) Home language
- i) Type of school from which matriculated
- j) Co-educational or single sex schooling
- k) Matric⁸ subjects, results and grades
- l) Matric final average

The second part of the questionnaire asked respondents to indicate:

- a) The first source of information they received on psychology as a university subject and to classify this source in categories provided
- b) Whether they had had previous experience with a registered psychologist
- c) Why they chose psychology as a subject and to classify reasons in categories provided
- d) How they thought the study of psychology would benefit them
- e) Their major subjects
- f) Their degree registration
- g) Their current career choice(s)
- h) Whether they think psychology is essential, advantageous or irrelevant to their current career choice(s)
- i) What they would have done had they not been able to take psychology at this university
- j) Whether they see a Psychologist as a male or female occupation and why
- k) If they intend to register for postgraduate studies in psychology and whether they hope to do so at the University of Natal, Pietermaritzburg

The questionnaire was first tested in a pilot study among a small sample (n=15) of Psychology Honours students. Their feedback was valuable in that they indicated ambiguous questions and problematic areas demanding attention and revision.

⁸ Matric is equivalent to Grade 12

3.1.2 Statistical procedures

3.1.2.1 Chi-square

The X^2 goodness-of-fit test is a nonparametric test, which means, from a practical standpoint, that it is less restrictive than a parametric test. The X^2 test of homogeneity of proportions and the closely allied X^2 test of independence are extensions of the X^2 goodness-of-fit test. Although nonparametric tests, they all have assumptions that must be met.

To be generalisable to the population, the sample must be randomly selected. More importantly, the observations have to be independent, i.e., each observation must be generated by a different subject, and the observation of one subject has no effect on the observations of the other subjects. Lastly, the expected frequencies should not be very small. Assuming these criteria have been met, the X^2 goodness-of-fit test can provide useful information (Schweigert, 1994).

X^2 will be used in the Results section where it is appropriate, applicable and meets the assumptions outlined above. Where the assumption of independence is not met (i.e., in this case a subject is giving more than one observation), percentages will be used to display the results.

3.1.2.2 Factor analysis

Factor Analysis (FA) is a statistical technique applied to a single set of variables where the researcher is interested in discovering which variables in the set form coherent subsets that are relatively independent of each other (Tabachnick & Fidell, 1989). Sets of variables that are correlated with each other, but largely independent of other subsets of variables, are combined into factors. Hence, starting with a mass of variables which show correlations, it is possible to end up with a few factors or dimensions (Child, 1990). These factors are thought to reflect the underlying processes that have created the correlations among variables (Tabachnick & Fidell, 1989), and so are taken as descriptive of the group (Child, 1970).

In practice, most factor analysts seldom use a single criterion in determining how many factors to extract. By examining a number of different structures derived from several trial solutions, the analyst can compare and contrast to arrive at the best representation of the data. Selecting the number of factors is, therefore, interrelated with an assessment of structure, which is revealed in the interpretation phase. Thus, several factor solutions with differing numbers of factors are examined before the structure is well defined. Factor selection criteria may include: latent root criterion (or eigenvalues greater than 1), *a priori* criterion, percentage of variance criterion, and scree test criterion.

- The most common technique is the **latent root criterion**. It has been said to extract too many factors when more than 50 variables are involved.
- The ***a priori* criterion** is a simple yet reasonable criterion under certain circumstances. This approach is useful if the analyst is testing a theory or hypothesis about the number of factors to be extracted. It can also be justified in instances where the analyst is attempting to replicate another researcher's work and to extract the same number of factors that was previously found, as is the case in this study.
- The **percentage of variance criterion** is an approach in which the cumulative percentages of the variance extracted by successive factors are the criterion. The purpose is to ensure practical significance for the derived factors. In the social sciences it is not uncommon for the analyst to consider a solution that accounts for 60 percent of the total variance (and in some instances even less) as a satisfactory solution.
- The **scree test** is used to identify the optimum number of factors that can be extracted before the amount of unique variance begins to dominate the common variance structure. As a general rule, the scree test results in at least one and sometimes two or three more factors being considered significant than does the latent root criterion (Hair, Anderson, Tatham, & Black, 1984).

4. RESULTS

The purpose of this chapter is to present the results obtained from the investigation. Sample demographic features and academic features will be presented, followed by students' motivation for taking psychology as a subject, personality types, gender differences and, lastly, population group differences. The analyses were conducted in light of global and national trends. All results were obtained with the use of the Statistical Package for the Social Sciences (SPSS).

4.1 DEMOGRAPHIC FEATURES

4.1.1 Sample size

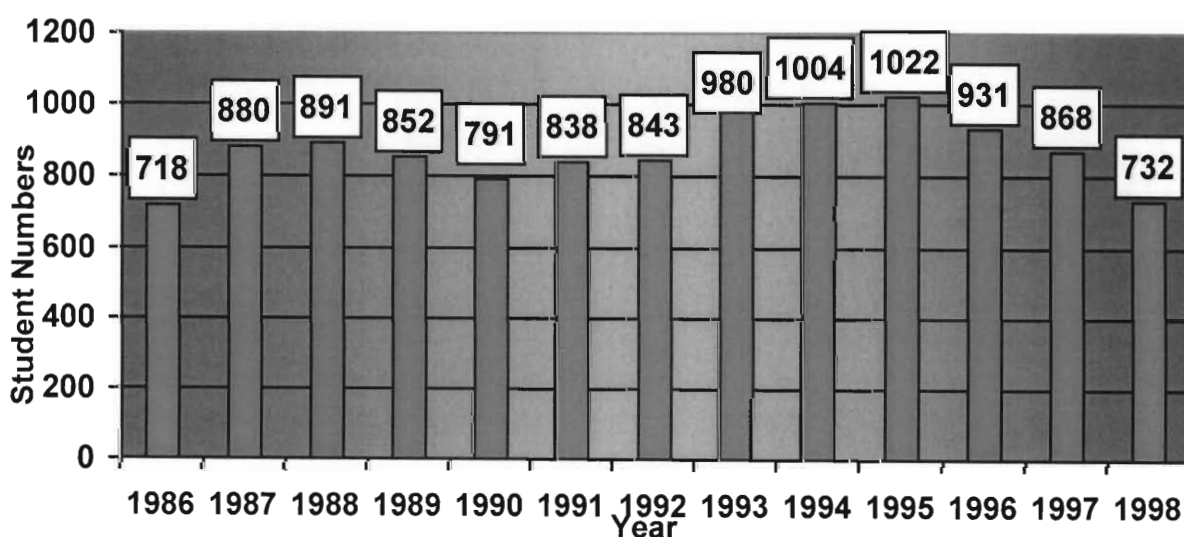
The survey yielded 508 usable undergraduate questionnaires, resulting in a 25% loss. Data was collected from 80% of Level 100, 73% of Level 200, and 67% of Level 300 students. Of the total 508 students 50% (n=254) were Level 100, 26% (n=134) were Level 200, and 24% (n=120) were Level 300. Although lost data increased significantly from 20% at Level 100 to 33% at Level 300, presumably due to a decrease in lecture attendance over the levels, the sample remains proportionately representative of the population [χ^2 (2, n=681) = 11.39, $p < .01$]. The sample characteristics are shown in Table 1.

Table 1: Population and sample size by level of study.⁹

LEVEL OF STUDY	POPULATION		SAMPLE		% POPULATION
	N	%	n	%	
100	317	47	254	50	80.13
200	184	27	134	26	72.83
300	180	26	120	24	66.67
TOTAL	681	100	508	100	74.60

When compared to the last thirteen years of enrolments in the Psychology Department, statistics show that a high of approximately 1000 students was reached in 1994 and 1995. History has seen changes in financial aid policy resulting in the ebb and flow of student numbers depicted in Figure 2 below. Following the first democratic elections in 1994, financial aid was easier to secure. A struggling economy and increasing pressure on academic institutions saw financial aid wane in recent years.

Figure 2: Student enrolment for the past 13 years in the School of Psychology.

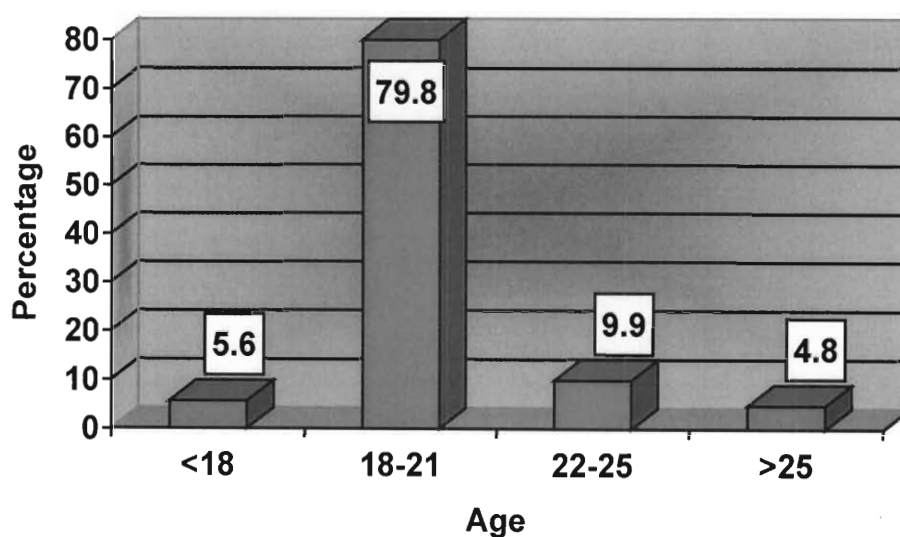


⁹ Statistics were obtained from the University of Natal, Pietermaritzburg Psychology Department and differ slightly from those used in Figure 2, Figure 4 and Table 3, which were obtained from Student Information Systems (Banner Office).

4.1.2 Age

Ages of students were between 15 and 62 years with a range of 47 years. The mean is 20.1 years with a median of 19. The majority (n=402, 79%) fall into the 18- to 21-year-old range, as shown in Figure 3.

Figure 3: Age distribution shown in percent (n=504).



4.1.3 Gender

Seventy three per cent of the total sample were female. Of Levels 100, 200, and 300, 67%, 78%, and 82% were female respectively [χ^2 (2, n=507) = 11.14, $p < .01$] (as shown in Table 2). Therefore, one can see that the percentage of females increases over the three levels. The ratio of male to female increased from 1:2 in Level 100 to 1:4.4 in Level 300.

Table 2: Gender of sample by level of study (n=507).

GENDER	TOTAL SAMPLE		LEVEL 100		LEVEL 200		LEVEL 300	
	n	%	n	%	n	%	n	%
Male	135	26.6	84	33.1	29	21.6	22	18.5
Female	372	73.4	170	66.9	105	78.4	97	81.5
TOTAL	507	100	254	100	134	100	119	100

Females have shown a progressive increase from 1986, with the number of female students peaking in 1994. Male numbers appear to be on the decline. Over the past thirteen years females have been the significant majority; 1988 saw the male: female gender ratio at its lowest, namely 38.6% male and 61.4% female with a ratio of 1:1.6. Ten years later the males dropped to 29.2%, the females increased to 70.8% and the ratio to 1:2.4 (see Figure 4 and Table 3).

Figure 4: Male and female student enrolment for the last 13 years in percentages.

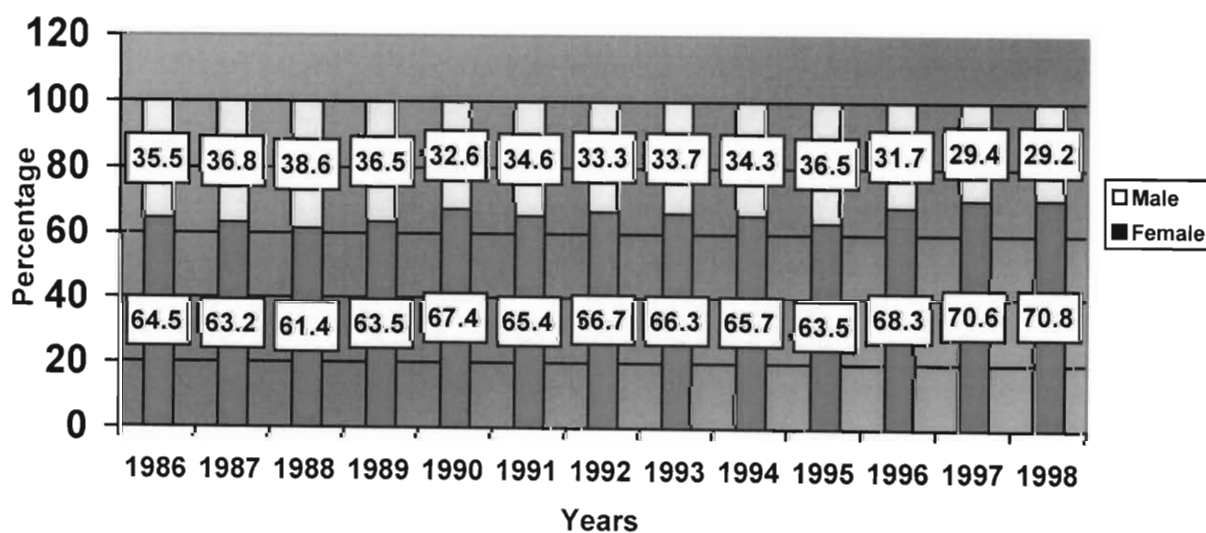


Table 3: Male to female ratios in Psychology over the last 13 years.

YEAR	MALE:FEMALE
1986	1:1.8
1987	1:1.7
1988	1:1.6
1989	1:1.7
1990	1:2.1
1991	1:1.9
1992	1:2.0
1993	1:2.0
1994	1:1.9
1995	1:1.7
1996	1:2.2
1997	1:2.4
1998	1:2.4

4.1.4 Marital status

The majority of the students are single (98%). The remaining 2% were composed of 8 married students, 3 divorcees, and 1 widow.

4.1.5 Population group¹⁰

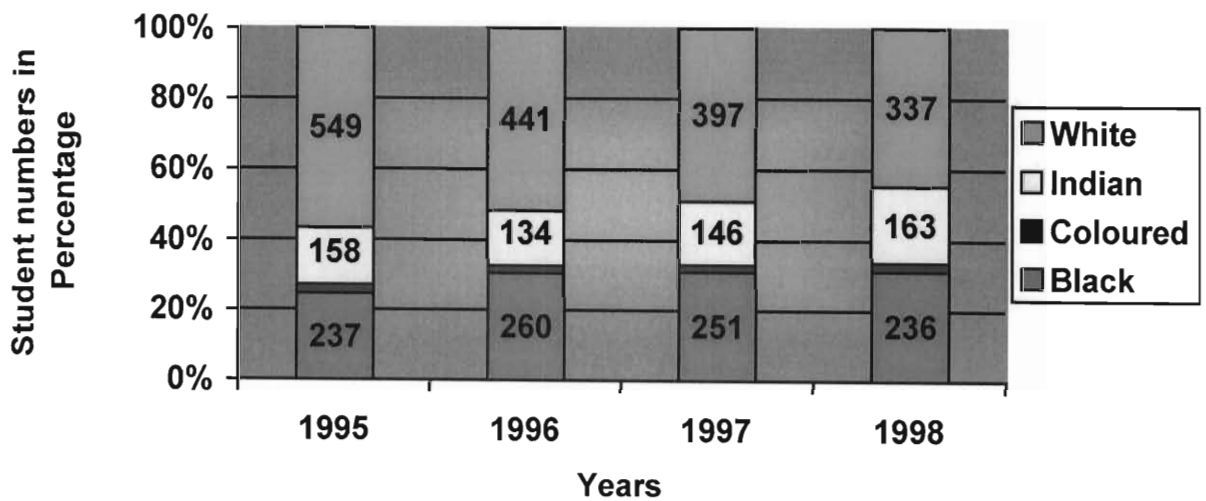
The undergraduate student sample was made up of 44% White students, 32% Black students, 20% Indian students, and 4% 'Other' (refer to Table 4 below). The years 1995 to 1998 saw a decrease in the percentage of White students, and an increase in Black students, and relatively little change to the Indian and Coloured population groups, as illustrated in Figure 5.

¹⁰ The terminology used under Apartheid to classify people by "population group" is used here because of its familiarity and ease of reference, and is not endorsed as commensurate with race or ethnicity.

Table 4: Sample size and percentages of the different population groups (n=504).

ETHNIC GROUP	n	%
Black	159	31.5
Indian	102	20.2
White	221	43.8
Other	22	4.4
TOTAL	504	100

Figure 5: Population group statistics for undergraduate psychology students from 1995–1998.



4.1.6 Home language

All 11 official South African languages are spoken in the undergraduate sample. Sixty five per cent of the students regard English as their first language, whereas 34% report it to be their second language. Of the latter, 21% speak Zulu as their first language, and the figure is 3% for South Sotho speakers as well as for Xhosa.

4.1.7 Nationality

South Africans make up 90% of the sample. Four per cent come from the Southern African Developing Economic Community (SADEC) and other African countries, while the remaining 6% are from further afield (e.g., Europe, America, etc)

4.1.8 Provincial representation

The University of Natal, Pietermaritzburg has students from all regional provinces in South Africa. The large majority (81%) are from KwaZulu/Natal, followed by Gauteng (8%) and Mpumalanga (3%).

4.2 ACADEMIC FEATURES

4.2.1 Type of high school

Seventy six per cent of the sample attended a government high school, compared with 21% who went to private schools. The remaining 3% did not answer this question, an omission which may be due to the complicated and possibly confusing categories used in South African educational terminology (e.g., Ex Model C schools – see Appendix 2). Seventy one percent of the students were in co-educational schooling systems while 29% attended a single sex school.

4.2.2 Matriculation

Matriculation averages were omitted by 9% of the students. Of the remaining students 30% received an A/B aggregate (70-100%), 49% obtained a C/D (50-69%), and 8% an E/F (30-49%). Four per cent of the sample had foreign qualifications (e.g., A-levels).

Students with E/F category results were an older group (a mean age 23 compared to the overall 20 years), were predominantly Zulu speaking, and were registered at all undergraduate levels (i.e., 46% in Level 100, 28% in Level 200, and 26% in Level 300). In all likelihood these students were admitted through alternative admission procedures. For example, the Regional Access Programme (RAP), and the Science Foundation Programme (SFP) offer alternative access routes to study at tertiary level (University Prospectus, 1999).

Table 5 shows the number and percentage of students, in descending order, taking various subjects for matriculation; the first four subjects (i.e., English, Afrikaans, Biology, and Mathematics) being the core subjects taken by the students. Nearly a quarter (23.8%) of currently registered Psychology students did not take or did not pass Mathematics at a Matric level.

Table 5: Frequency and percentages of matriculation subjects in the sample.

SUBJECT	n	%	SUBJECT	n	%
English	490	96.5	Computers	30	5.9
Afrikaans	431	84.8	French	27	5.3
Biology	407	80.1	Other	17	3.3
Mathematics	387	76.2	Agriculture	16	3.1
Science	213	41.9	Xhosa	13	2.6
Geography	198	39.0	Technical Drawing	12	2.4
History	170	33.5	Typing	10	2.0
Accounts	128	25.2	Art	7	1.4
Zulu	108	21.3	North Sotho	7	1.4
Home Economics	52	10.2	Advanced Mathematics	6	1.2
Business Economics	49	9.6	South Sotho	6	1.2
Speech and Drama	47	9.3	German	5	1.0
Biblical Studies	33	6.5	Music	4	0.8
Economics	31	6.1	Metal Work	2	0.4

4.2.3 Current degree registration

The most common degrees taken are a Bachelor of Social Science (BSocSc 41%) and a Bachelor of Arts (BA 39%), followed by a Bachelor of Science (BSc 15%) and a Bachelor of Commerce (BCom 5%), seen in Table 6 [$\chi^2(4, n=493) = 351.74, p < .001$]. Degrees were then grouped based on equivalency of faculty admission requirements. For example, a BA and BSocSc require 30 points, whereas a BCom, BSc and a BScAgric need 32 points. The latter group also requires mathematics, and sometimes science or biology. For ease of reference the two groups will be referred to as ‘Arts’

and 'Science'. The Arts had an overwhelming majority of 78% with Science picking up the remaining 20%, as shown in Table 7 [$\chi^2 (1, n=493) = 324.02, p<.001$].

Table 6: Enrolment figures and percentages for the various degrees (n=493).

DEGREE	n	%
BA	191	38.7
BAgric	1	0.2
BComm	26	5.3
BSc	73	14.8
BSocSc	202	41

Table 7: Enrolment figures for the collapsed degree categories (n=493).

DEGREE	n	%
Arts	393	79.7
Science	100	20.3
TOTAL	493	100

The percentage of students taking an Arts degree increases from 72% in Level 100 to 83% in Level 300, while Science degrees decrease from 26% in Level 100 to 14% in Level 300, with a low of 13% in Level 200 [$\chi^2 (2, n=493) = 11.77, p<.01$] (see Table 8). This suggests that Arts students are majoring in Psychology, while Science students are taking Psychology as a filler or elective subject.

Table 8: Collapsed degree categories across the three levels (n=508).

DEGREE	LEVEL 100		LEVEL 200		LEVEL 300		TOTAL	
	n	%	n	%	n	%	n	%
Arts	184	72.4	109	81.3	100	83.3	393	77.4
Science	66	26	17	12.7	17	14.2	100	19.7
Other	4	1.6	8	6	3	2.5	15	2.9
TOTAL	254	100	134	100	120	100	508	100

4.2.4 Majors

Because students approach psychology from different degree pathways (as seen in 4.2.3 above), the range of majors taken is diverse. Students may choose to take Psychology as an elective (requiring a minimum of one year of study) or as a major (requiring a minimum of three years of study). The most common majors of this student sample are Psychology (80%), Sociology (21%), Legal Studies (19%), English (13%), and Economics (8%). A wide range (n=53) of other subjects make up the remaining joint major. Table 9 below lists the university majors taken by Psychology students in descending order.

Table 9: University majors taken by Psychology students.

SUBJECT	n	%	SUBJECT	n	%
Psychology	408	80.31	Zoology	9	1.77
Sociology	105	20.67	Fine Arts	8	1.57
Legal Studies	95	18.70	Chemistry	8	1.57
English	66	12.99	Religious Studies	5	0.98
Economics	39	7.68	Mathematics	5	0.98
Geography	29	5.71	French	5	0.98
Marketing and Advertising	20	3.94	Physics	5	0.98
Genetics	17	3.35	Accounting	4	0.79
Community Resource Management	17	3.35	Business Administration	3	0.59
Computer Science	15	2.95	German	3	0.59
Human Resource Management	14	2.76	Human Geography	3	0.59
Biochemistry	14	2.76	Statistics	2	0.39
Business Information Systems	13	2.56	Auditing	2	0.39
Philosophy	13	2.56	Nutrition	2	0.39
Management	13	2.56	Practical Theology	2	0.39
Political Science	12	2.36	Biblical Studies	2	0.39
History	11	2.17	Classical Civilisation	1	0.20
Zulu	11	2.17	Biometry	1	0.20
Applied Language Studies	11	2.17	Economic History	1	0.20
Microbiology	10	1.97	Hydrology	1	0.20
Drama	10	1.97	Applied Chemistry	1	0.20

4.2.5 Postgraduate studies in psychology

Of the student sample, 58% would like to read for a postgraduate degree in psychology, 3% are still undecided, and 35% do not intend to pursue postgraduate studies. Forty five per cent of the sample would like to complete their postgraduate studies at the University of Natal, Pietermaritzburg (UNP) Psychology Department, whereas 10% would prefer to do so elsewhere. Reasons for supporting UNP is the belief that the staff and training have a good reputation (14%), and because it is convenient (13%) and familiar (10%). Those choosing another institution did so because certain courses are not offered by the UNP department (e.g., Industrial Psychology), they want a 'change of scenery', or are wary of the strict selection criteria and the difficulty in being accepted into a postgraduate psychology course.

4.2.6 Reaction to potential obstacles in studying psychology

Valuable information to have is the fact that 41% (n=207) of the sample would have gone to another university if they were unable to take undergraduate psychology at the University of Natal, Pietermaritzburg (UNP). Another 41% would have chosen another elective, and 8% would have changed their degree registration. There was a significant difference between women's main reactions, which would be to change universities (45%), and men's preferred reaction was to take another elective (55%) [χ^2 (2, n=507) = 3.91, $p < .05$].

4.3 MOTIVATION FOR TAKING PSYCHOLOGY AS A SUBJECT.

4.3.1 Information sources

The following results, as shown in Table 10, were reported in response to the question “Where did you first hear about Psychology as a university subject?” Students first hear about psychology from a variety of sources. The predominant source is through personal contact with family and friends (84%), within the school setting (77%), and through the university (44%). The media plays a substantial role in providing information through television (57%), magazines (48%), newspapers (43%) and books (37%)¹¹.

Table 10: Frequency and percentages for information sources about psychology.

INFORMATION SOURCE	n	%
Family/ friends (e.g., students, parents, etc)	429	84.4
School (e.g., teachers, counsellors, etc)	393	77.4
Television	290	57.1
Magazines	242	47.6
University (e.g., OC, SCC, open days, etc)	221	43.5
Newspapers	216	42.5
Books	188	37.0
University prospectus/ pamphlets	52	10.2
Radio	26	5.1
Social groups (e.g., church, societies, etc)	16	3.1
Other academic institutions/ courses	14	2.8
Computers (e.g., the Internet)	11	2.2

¹¹ As previously stipulated, where the assumption of independence is not met, χ^2 may not be used (see Statistical procedures 3.1.2.1).

4.3.2 Previous experience or contact with a psychologist

Table 11 shows that a portion of students (44%) have had no previous experience with a registered psychologist. Of the 53% having had some contact with a psychologist, 25% had received career guidance, 10% have seen a psychologist for therapy of one sort or another, 7% know psychologists socially, and 10% have had more than one type of contact. Three percent made no comment [$\chi^2 (1, n=491) = 4.12, p<.05$].

Table 11: Previous experience with a psychologist (n=508).

DEGREE OF CONTACT	n	%
No contact	223	43.9
Some contact	268	52.8
No answer	17	3.3

4.3.3 Why choose to study psychology as a subject?

Two questions investigating this issue were asked. The first used a qualitative format, i.e., “In your own words why did you choose to study psychology as a subject?” This was followed by a closed question, namely: “How would you classify your reasons in the categories below?” – a number of options were then provided, ranging from ‘For a career’ to ‘Easy Option’ (refer to Appendix 1). Interestingly these two questions produced slightly different results.

Qualitative results (refer to Table 12 below) showed that the most common reason for choosing to take psychology as a subject is for intrinsic interest (83%). This is followed by career-related reasons (56%), course-related reasons (13%) and only 1% for tangible rewards. Quantitative results (refer to Table 13 below), on the other hand,

showed that choosing to study psychology for career-related reasons (59%) was the most common option, followed closely by intrinsic interest or curiosity (58%).

Table 12: Qualitative reasons for studying psychology as a subject (n=508).

REASON	n	%
Intrinsic interest	419	83
Career-related	285	56
Course-related	66	13
Tangible rewards	6	1

Table 13: Quantitative reasons for studying psychology as a subject (n=508).

REASON	n	%
For a career	301	59
Curiosity/ interest	294	58
Asset to other courses	93	18
Filler/ elective	27	5
Easy option	13	3

4.3.4 Perceived benefits of studying psychology

Students perceived the main benefit of studying psychology to be to increase their personal knowledge and/or understanding (82%). Other benefits are: to help others (69%), for personal growth and development (67%), to facilitate social change (44%), and tangible rewards (32%), as shown in Table 14.

Table 14: Perceived benefits of studying psychology.

PERCEIVED BENEFIT	n	%
To increase knowledge &/ understanding	417	82.1
To help others	348	68.5
For personal growth & development	341	67.1
To facilitate social change	221	43.5
Tangible rewards	162	31.9
Social awareness	3	0.6

4.3.5 Career choices

Forty three per cent of the sample want to pursue a career in the psychological field; nine per cent are unsure (refer to Table 15). The remaining students provided an extensive and diverse range of alternate career options, which were categorised into different fields (see Appendix 2). The following career categories proved most popular after psychology: law (8%), education (8%), biological or medical (7%), and community development (6%).

Table 15: Areas of students' current career choices (n=448).

CAREER	n	%
Psychology	217	42.7
Unsure	45	8.9
Other	43	8.5
Law	41	8.1
Education	40	7.9
Biological and/or medical	33	6.5
Community development	29	5.7

Among the students indicating psychology as a career choice, 47% did not specify what type of application interested them; 17% are set on Clinical Psychology, 16% on Industrial Psychology, 5% Child Psychology and 4% Counselling Psychology. The remaining 12% are allocated to Educational, Research, Neuropsychology, Sports, Criminal/ Forensic, and Organisational Psychology as seen in Table 16.

Table 16: Student interest within the psychological field (n=217).

CAREER	n	%TOTAL	% OF PSYCHOLOGY SAMPLE
Psychologist	102	20.1	47.0
Educational	5	1.0	2.3
Industrial	34	6.7	15.7
Counselling	9	1.8	4.1
Clinical	36	7.1	16.6
Research	3	0.6	1.4
Neuropsychology	5	1.0	2.3
Sport	4	0.8	1.8
Child	10	2.0	4.6
Criminal/ Forensic	6	1.2	2.8
Organisational	3	0.6	1.4

4.3.6 Gender stereotypes of psychologists

In an effort to investigate students' perceptions of possible gender stereotypes about the psychological profession, the following question was asked: "Do you see being a psychologist as a 'female job' or a 'male job'?" Results indicate that a psychologist's gender is thought by the majority of students (72%) to be irrelevant. Twenty eight per cent of the students are aware that stereotypes surround the profession. Some (12%) agree that gender provides diversity and variety, whereas 7% support the predominance of women and believe women to be better suited for the profession than males. The female psychologist is described as being more understanding, comforting, emotionally sensitive, compassionate, gentle and perceptive.

4.4 PERSONALITY TYPES

4.4.1 A comparison of the South African sample with an American sample

Form S of the NEO-FFI is a 60-item version of the NEO PI-R (Form S) that provides a brief, comprehensive measure of the five domains of personality (Costa & McCrae, 1992). It consists of five 12-item scales that measure each domain, namely: Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C). Information about specific facets within each domain is not provided, and the shortened scales are somewhat less reliable and valid than the full NEO PI-R domain scales. As is true in most cases where abbreviated scales are formed, some precision is traded for speed and convenience. Howard and Howard (1998) have also shown the NEO-FFI to be reliable and valid (in Costa & McCrae, 1992).

Reliability refers to the consistency or stability of the results produced by a measuring instrument. Internal-consistency reliability is the degree of relatedness of the individual items of a particular instrument. Instead of splitting or repeating items, only a single test administration is required to provide a unique estimate of reliability for the given test administration. The most popular of these reliability estimates is Cronbach's alpha coefficient. The higher the value of the alpha coefficient, the higher the reliability of the measuring instrument(s) (Cronbach, 1970). As can be seen in Table 17, all the NEO-FFI SA sample values are very similar to the USA sample. The only exception may have been the Agreeableness scale which was then examined more closely.

The communalities of each item of the inventory were inspected. There were some questionnaire items that were noticeably lower than the majority. For example, question 19 (“I would rather cooperate with others than compete with them”), and question 44 (“I’m hard-headed and tough-minded in my attitudes”), which are keyed in opposite directions as a control for acquiescent responding, are both poorer measures on the Agreeableness scale – this may indicate why its reliability score is lower than the other scales.

Table 17: South African student sample as compared to the American sample on the NEO-FFI.

VARIABLES	THE SOUTH AFRICAN STUDENT SAMPLE	THE NEO-FFI AMERICAN “EMPLOYMENT” SAMPLE (COSTA, MCCRAE & DYE, 1991 IN COSTA & MCCRAE, 1992)¹²
Sample size	508	1539
Gender composition	27% Male; 73% Female	“men and women”
Racial composition	32% Black; 20 Indian; 44% White; 4% Other	21% Black; 69% White; 10% Other
Age	Range = 15-62 Mean = 20 years 79% in the 18-21 year old range	“several hundred in their twenties”
Sample	Undergraduate Psychology students	“employed by a large national organisation”
Education	University undergraduates	“virtually all subjects were high school graduates, a much smaller proportion had advanced degrees”
Neuroticism (N)	.8241	.86
Extraversion (E)	.7264	.77
Openness (O)	.7410	.73
Agreeableness (A)	.5939	.68
Conscientiousness (C)	.8419	.81

¹² All information on the sample used for standardization was gleaned from the manual.

This South African student sample was then compared to that of American NEO-FFI scores on a college sample and an adult sample (Costa & McCrae, 1992). Results show insignificant discrepancy between the South African sample and the American college sample. Although still insignificant, they do appear to have higher levels of Neuroticism (N) and Extraversion (E), equal levels of Openness (O), and lower levels of Agreeableness (A) and Conscientiousness (C) than the American adult sample (see Figure 6 and Table 18). Although fairly large standard deviations appear to be common, there are noticeably larger deviations in the South African sample. This may be indicative of the diversity within the South African population.

Figure 6: Comparison of mean South African and American NEO-FFI scores.

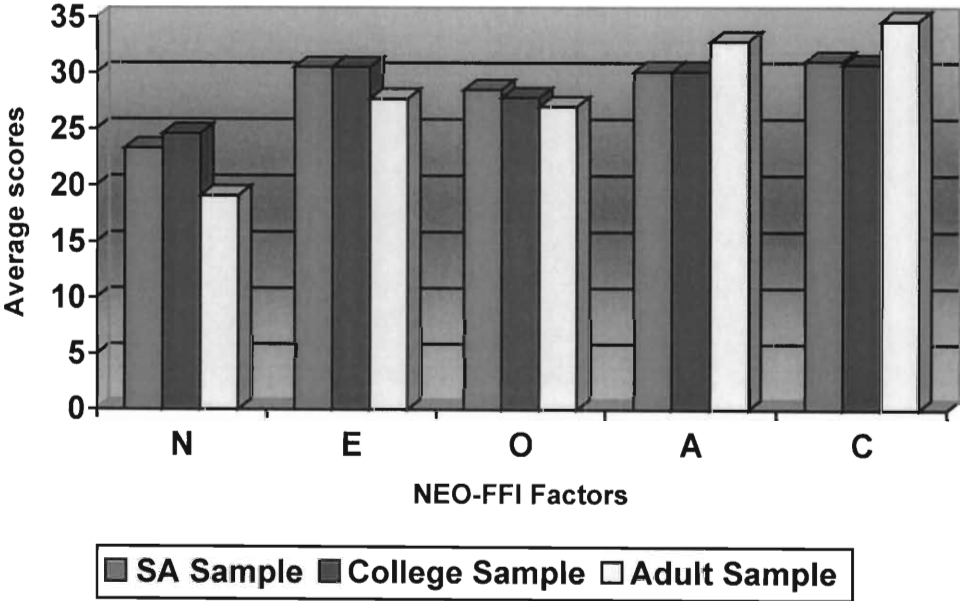


Table 18: A comparison of mean NEO-FFI scores and standard deviations of the three sample groups.

NEO-FFI FACTORS	SA STUDENT SAMPLE	USA COLLEGE SAMPLE	USA ADULT SAMPLE
Neuroticism	23.3 (8.38)	24.6 (7.87)	19.1 (7.68)
Extraversion	30.5 (6.25)	30.5 (5.84)	27.7 (5.85)
Openness	28.5 (6.67)	27.8 (5.85)	27.0 (5.84)
Agreeableness	30.1 (5.51)	30.1 (5.40)	32.8 (4.97)
Conscientiousness	31.0 (7.60)	30.7 (6.79)	34.6 (5.88)

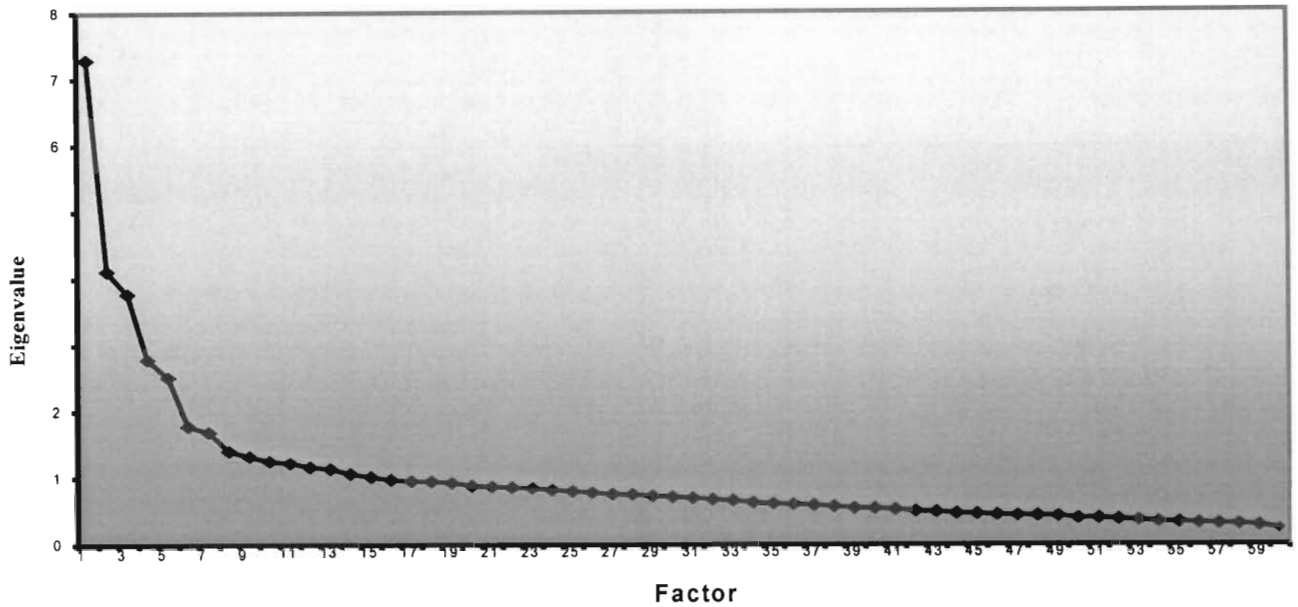
4.4.2. Factor analysis

A principal components analysis of the NEO-FFI results (n=503), followed by a varimax rotation was performed. Based predominantly on the *a priori* criterion, as well as on the scree plot (see Figure 7) and the percent of variance figures, it was decided to use a 5-factor solution. Note that the difference in percent of variance between factor 5 and 6 is 1,2%; whereas between factors 6, 7, and 8 are intervals of a mere 0.2%. The 34.1% of variance accounted for by the first 5 factors suggests that there remains a great deal of individual idiosyncratic variation (refer to Table 19).

Table 19: Principal components analysis.

Factor	Eigenvalue	Pct of Var	Cum Pct
1	7.28773	12.1	12.1
2	4.11770	6.9	19.0
3	3.77910	6.3	25.3
4	2.78484	4.6	29.9
5	2.51613	4.2	34.1
6	1.77844	3.0	37.1
7	1.69511	2.8	39.9

Figure 7: Scree plot of eigenvalues.



When extracting five factors the following factor structure, depicted in Table 20 below, was found. Numbers indicate the associated items on the NEO-FFI that loaded highly on a particular factor.

Table 20: Item numbers that loaded highly on the five extracted factors.

	FACTOR 1 (N)	FACTOR 2 (E)	FACTOR 3 (O)	FACTOR 4 (A)	FACTOR 5 (C)
ITEMS ON THE NEO-FFI	1, 6, 11, 16, 21, 26, 31, 36, 41, 46, 51, 56	2, 4, 7, 12, 17, 22, 27, 32, 34, 37, 42, 47, 49, 52, 57	3, 8, 13, 18, 23, 28, 33, 38, 43, 48, 53, 58	9, 14, 19, 24, 29, 39, 44, 54, 59	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60

Another more visual way of representing the results within the rotated factor matrix is to **boldtype** the items that Costa and McCrae allocated to each scale, and to underline all items that do not conform to these American factor components (refer to Table 21 below). From inspection it is clear that these results are, with only a few exceptions, the same items that the factor analysis loads highly and were used by Costa and McCrae to define each scale.

The most difficult item to explain is Item 49 (“I generally try to be thoughtful and considerate”). It appears with a larger loading on all four other scales than on the Agreeableness scale expected by Costa and McCrae. Other items worth comment are Item 34 (“Most people I know like me”) and Item 4 (“I try to be courteous to everyone I meet”), which both loaded higher on the Extraversion scale than on the expected Agreeableness scale. Item 12’s (“I don’t consider myself especially ‘light-hearted’”) main loading was on the Extraversion scale, and Item 45’s (“Sometimes I’m not as dependable or reliable as I should be”) main loading was on the Conscientiousness scale but the Agreeableness scale was almost as high on both occasions.

Overall the factor analysis of the NEO-FFI produced the same distinct factors as established by previous research. Further elaboration on its factor structure for the present study appears to be unnecessary. Hence, this factor analysis serves as support for the use of the NEO-FFI for the purposes of this study.

Table 21: Rotated factor matrix.

	Neuroticism	Extraversion	Openness	Agreeableness	Conscientiousness
F1	.40820	-.03914	.08695	.14720	.02941
F2	-.06870	.52357	-.13912	-.06533	-.02788
F3	.17980	-.01181	.34499	-.01359	-.38177
F4	.15562	.31417	.24044	.26193	.17348
F5	-.06511	-.09903	-.14461	.13660	.48930
F6	.57748	-.09915	-.02173	.04529	-.16218
F7	-.00989	.43693	.03099	.20297	-.08195
F8	-.11719	-.22240	.29594	-.06552	-.33457
F9	-.21808	-.01685	.04133	.46837	.12101
F10	-.25661	-.08078	-.03880	-.09520	.63585
F11	.59141	.03947	-.21935	.05000	.07907
F12	-.20110	.28085	.12826	.24660	-.11802
F13	.05536	.04862	.70086	.03563	.05003
F14	-.05330	.13135	-.06899	.59751	.04459
F15	.04638	-.04213	.07535	-.03191	.46055
F16	.54496	-.18755	.21017	-.03548	-.10219
F17	-.05222	.50235	-.05881	-.05572	.08829
F18	-.18971	.04016	.47252	.10717	-.12939
F19	.12000	-.03387	-.19620	.18138	.05794
F20	.00489	.02790	.10486	.10636	.64165
F21	.59733	-.04084	-.07755	-.23876	-.04234
F22	-.19616	.51591	.01487	-.18459	-.17224
F23	-.07419	-.00560	.61330	.06892	.03567
F24	-.25630	.20642	.01415	.45249	.02816
F25	-.18937	.10475	-.12860	-.05117	.69217
F26	.67491	-.12200	.02980	-.03491	-.09660
F27	-.13494	.28704	-.14264	.14716	-.20421
F28	-.02964	.18259	.41960	-.04834	-.08215
F29	-.20862	.02336	.17735	.19025	-.18041
F30	-.33948	-.17362	-.07344	.01492	.56344
F31	.51388	-.20125	.12759	.03182	-.04408
F32	-.14598	.50521	.21200	-.11910	.01246
F33	.10698	.08023	.55306	.17102	-.10346
F34	-.07177	.36889	.12547	.15699	.13612
F35	-.09712	.18358	.02443	-.01531	.68505
F36	.51678	-.03946	-.07155	-.24200	-.05401
F37	-.15146	.66187	.03082	.08305	.09235
F38	-.12330	-.19855	.21845	-.06905	-.23286
F39	-.09991	.31662	.16556	.45927	-.00512
F40	.07593	.12913	.25265	.19605	.47841
F41	.56515	-.05030	-.22085	-.04773	-.32209
F42	-.35000	.41158	.21657	.16035	.08492
F43	-.01787	-.03171	.62082	-.00413	.09549
F44	-.06857	-.10334	-.01636	.31472	-.05013
F45	-.12048	-.03687	.20842	.29029	.32509
F46	.59015	-.24847	.14712	-.03262	-.01264
F47	-.05487	.48346	.17710	-.16667	.01793
F48	.00895	-.05312	.65216	.04369	.08565
F49	.19092	.32520	.28098	.12294	.25437
F50	-.08176	.19273	.18648	.01548	.63323
F51	.50587	.00655	-.23436	-.13631	-.29867
F52	-.27285	.48900	-.01247	-.10803	.20944
F53	-.04575	.23111	.48166	-.24981	.22377
F54	.09380	-.05637	-.01163	.47215	-.02740
F55	-.27268	-.13795	.01701	.06991	.63467
F56	.50788	-.02739	-.09554	-.22625	-.07425
F57	-.33014	.20453	.04610	-.07482	.13596
F58	.01534	.06991	.49067	-.28254	.22210
F59	.08328	-.12296	-.02775	.63304	.11166
F60	-.02197	.16226	-.04018	-.12122	.69147

4.5 GENDER DIFFERENCES

A general theme of analysis was carried out on the data gathered – this being the presence or absence of gender differences. What follows is a synopsis of relevant and/or significant findings.

4.5.1 Degrees

When degree categories were collapsed, as seen in Table 22, into Arts (BSocSc and BA) and Science (BSc, BComm, and BAgric), it became evident that men are registered for significantly more science degrees than women [X^2 (1, n=492) = 16.16, $p < .001$].

Table 22: Enrolment figures and percentages in the various degrees (n=492).

DEGREE	MALE		FEMALE	
	n	%	n	%
Science	42	31.1	58	15.6
Arts	87	64.4	305	82.0

4.5.2 Information sources for psychology

Of the twelve sources listed in Table 23 below, men appeared to be slightly higher on media related categories (e.g., magazines, newspapers, university prospectus/pamphlets, radio, etc) as well as other academic institutions/ courses, and through computers. Women seem to have used more human interaction to obtain information

about psychology (e.g., family/ friends, school, social groups, universities, etc) as well as books and television.

Table 23: Frequency and percentages for information sources about psychology.

SOURCE	MALE (n=135)		FEMALE (n=372)	
	n	%	n	%
Family/ friends (e.g., students, parents, etc)	110	81.5	318	85.5
School (e.g., teachers, counsellors, etc)	96	71.1	296	79.6
Television	71	52.6	218	58.6
Magazines	65	48.1	176	47.3
University (e.g., OC, SCC, open days, etc)	54	40.0	166	44.6
Newspapers	59	43.7	156	41.9
Books	46	34.1	141	37.9
University prospectus/ pamphlets	18	13.3	34	9.1
Radio	8	5.9	18	4.8
Social groups (e.g., church, societies, etc)	1	0.7	15	4.0
Other academic institutions/ courses	4	3.0	10	2.7
Computers (e.g., the Internet)	5	3.7	5	1.3

4.5.3 Experience with a psychologist

From Table 24 one can deduce that female students have had insignificantly more contact with psychologists than male students [χ^2 (1, n=490) = 3.42, $p > .05$].

Table 24: Previous experience with a psychologist.

DEGREE OF CONTACT	MALE (n=135)		FEMALE (n=372)	
	n	%	n	%
No contact	66	48.9	156	41.9
Some contact	60	45.1	208	55.9
No answer	9	5.9	8	2.2
TOTAL	135	100	372	100

4.5.4 Psychology as a chosen subject of study

When referring to Table 25, one can see that more women (61%) are taking Psychology for career-related reasons (men=43%); whereas more men (15%) are taking Psychology for course-related reasons (women=12%). Women also seem to have a higher intrinsic interest in psychology (87%) than men do (70%). More women seemingly take Psychology for reasons of career and intrinsic interest; whereas more men take Psychology because they see it as an asset to other courses, use it as a filler or elective, or see it as an easy option (see Table 26).

Table 25: Qualitative reasons for studying psychology as a subject.

REASON	MALE (n=135)		FEMALE (n=372)	
	n	%	n	%
Intrinsic interest	95	70	324	87
Career-related	58	43	227	61
Course-related	20	15	46	12
Tangible rewards	0	0	6	2

Table 26: Quantitative reasons for studying psychology.

REASON	MALE (n=135)		FEMALE (n=372)	
	n	%	n	%
For a career	62	46	239	64
Curiosity/ interest	74	55	220	59
Asset to other courses	27	20	66	18
Filler/ elective	9	7	18	5
Easy option	9	7	4	1

4.5.5 Perceived benefits of studying psychology

In general women see significantly more benefits to the study of psychology than men do. There is consensus, however, that the primary benefit to studying Psychology is the assumption that it will increase ones' knowledge and understanding. Females follow this with a perceived altruistic benefit of helping others, whereas men stress helping others as a second to personal growth and development (refer to Table 27).

Table 27: Perceived benefits of studying psychology.

PERCEIVED BENEFIT	MALE		FEMALE	
	n	%	n	%
To help others	77	57.0	270	72.6
To increase knowledge &/ understanding	103	76.3	313	84.1
For personal growth & development	83	61.5	257	69.1
To facilitate social change	56	41.5	164	44.1
Tangible rewards	34	25.2	127	34.1
Social awareness	1	0.7	2	0.5

4.5.6 Career choices and gender

Theory indicates that men lean towards the sciences, are less technophobic and more mathematically minded. Women are said to gravitate towards caring, nurturing, humanitarian occupations. Interestingly the only career choices listed in Table 28 below that are more popular for men than women are: biological/ medical, finance, and computers. Women favour psychology, education and community development. Only 22% of the men plan to pursue a career in the field of psychology, whereas by comparison the figure for females is 50%.

Among the male students indicating psychology as a career choice, seventy per cent did not specify a particular area of interest; 44% of the females failed to specify. This may suggest that women are more aware of the available options or that men are still unsure of their area of specialty. The women appeared to prefer clinical, industrial, child, counselling, criminal/ forensic, sport and organisational fields, whereas the men emphasised educational, neuropsychological and research fields (refer to Table 29).

Table 28: Areas of men and women's current career choices.

CAREER	MALE (n=135)		FEMALE (n=372)	
	n	%	n	%
Psychology	30	22.2	186	50.0
Unsure	11	8.1	34	9.1
Other	16	11.9	27	7.3
Law	11	8.1	30	8.1
Communication	1	0.7	6	1.6
Finance	9	6.7	9	2.4
HRM	5	3.7	13	3.5
Marketing &/ Advertising	2	1.5	10	2.7
Computers	8	5.9	4	1.1
PRO	0	0	3	0.8
Politics	1	0.7	3	0.8
Education	7	5.2	33	8.9
Biological and/or medical	16	11.9	17	4.6
Community Development	7	5.2	22	5.9

Table 29: Male and female student interest within the psychological field.

CAREER	MALE (n=30)		FEMALE (n=186)	
	n	%	n	%
Psychologist	21	70.0	81	43.5
Clinical	2	6.6	34	18.3
Industrial	4	13.3	29	15.6
Child	0	0	10	5.4
Counselling	0	0	9	4.8
Criminal/ Forensic	0	0	6	3.2
Educational	1	3.3	4	2.2
Neuropsychology	1	3.3	4	2.2
Sport	0	0	4	2.2
Organisational	0	0	3	1.6
Research	1	3.3	2	1.1

4.5.7 Gender and personality

From the results tabulated below (refer to Table 30), females score significantly higher than males on the Neuroticism ($p=.038$), Extraversion ($p=.049$), Agreeableness ($p=.001$) and Conscientiousness ($p=.001$) scales, the greatest significance being found in the latter two scales.

Table 30: t-tests for independent samples of gender.

NEO-FFI SCALE	MEAN MALE (135)	MEAN FEMALE (372)	P (2-TAIL SIGN)
Neuroticism	22.0370	23.7742	* .038
Extraversion	29.5556	30.7903	* .049
Openness	28.2963	28.5215	.737
Agreeableness	28.7481	30.5511	* .001
Conscientiousness	29.0889	31.6210	* .001

4.6 POPULATION GROUP DIFFERENCES

A general theme of analysis was carried out on the data gathered – this being the presence or absence of differences between population groups. The sample was originally divided into four ethnic groups. The ‘Coloured’ and ‘Other’ group were collapsed due to their small sample size and are not, therefore, included in the interpretation of the results. There appears to be a continuum of population group with Black people on one end, White people on the other, and Indian people in between – perhaps a legacy of the apartheid era. In order to simplify the findings only the “Black” and “White” population groups will be presented. What follows is a synopsis of relevant and/ or significant findings.

4.6.1 Degrees

When degree categories were collapsed, as seen in Table 31, into Arts (BSocSc and BA), Science (BSc, BComm, and BAgri), and other, it became evident that White students are registered for significantly more science degrees than Black students [χ^2 (1, n=368) = 4.78, p<.05].

Table 31: Enrolment figures and percentages in the various degrees (n=380).

DEGREE	BLACK		WHITE	
	n	%	n	%
Science	17	10.7	43	19.5
Arts	134	84.3	174	78.7
Other	8	5.0	4	1.8
TOTAL	159	100	221	100

4.6.2 Information sources for psychology

Of the twelve sources listed in Table 32 below, White students appeared to be slightly higher on media related categories (e.g., magazines, newspapers, university prospectus/ pamphlets, television) as well as through computers. More White students seemed to get information from family, friends and social groups, whereas Black students used school, books, the radio and other academic institutions as a source of information. In general White students can be said to have greater access to information about psychology.

Table 32: Frequency and percentages for information sources about psychology.

INFORMATION SOURCE	BLACK (n=159)		WHITE (n=221)	
	n	%	n	%
Family/ friends (e.g., students, parents, etc)	124	78.0	196	88.7
School (e.g., teachers, counsellors, etc)	124	78.0	166	75.1
Television	85	53.5	120	54.3
Magazines	63	39.6	104	47.1
University (e.g., OC, SCC, open days, etc)	69	43.4	96	43.4
Newspapers	59	37.1	93	42.1
Books	60	37.7	76	34.4
University prospectus/ pamphlets	12	7.5	17	7.7
Radio	11	6.9	11	5.0
Social groups (e.g., church, societies, etc)	4	2.5	7	3.2
Other academic institutions/ courses	8	5.0	5	2.3
Computers (e.g., the Internet)	2	1.3	4	1.8

4.6.3 Experience with a psychologist

From Table 33 one can deduce that White students have had more contact with psychologists than Black students [$\chi^2 (1, n=367) = 13.45, p < .001$].

Table 33: Previous experience with a psychologist.

DEGREE OF CONTACT	BLACK (n=159)		WHITE (n=221)	
	n	%	n	%
No contact	80	50.3	73	33.0
Some contact	71	44.7	143	64.7
No answer	8	5.0	5	2.3

4.6.4 Psychology as a chosen subject of study

When referring to Table 34, one can see that more Black students (60%, 15%) are taking Psychology for career-related and course-related reasons respectively (Whites=54%, 11%); whereas more White students (87%) are taking Psychology due to intrinsic interest (Black=77%). Interestingly, from Table 35 one can deduce that career interest is more even than it was initially thought to be, that White students are more curious about psychology, and that they see psychology as being an asset to their other courses or a 'filler/elective'. On the other hand slightly more Black students see psychology as an easy option.

Table 34: Qualitative reasons for studying psychology as a subject.

REASON	BLACK (n=159)		WHITE (n=221)	
	n	%	n	%
Intrinsic interest	122	76.7	193	87.3
Career-related	95	59.7	120	54.3
Course-related	24	15.1	24	10.9
Tangible rewards	2	1.3	3	1.4

Table 35: Quantitative reasons for studying psychology.

REASON	BLACK (n=159)		WHITE (n=221)	
	n	%	n	%
For a career	97	61.0	132	59.7
Curiosity/ interest	74	46.5	148	67.0
Asset to other courses	14	8.8	51	23.1
Filler/ elective	5	3.1	12	5.4
Easy option	5	3.1	3	1.4

4.6.5 Perceived benefits of studying psychology

White students seem to see significantly more benefits to the study of psychology than Black students do. There is consensus, however, that the primary benefit to studying psychology is the autocentric assumption that it will increase ones' knowledge and understanding. Black students follow this with an allocentric, collectivistic benefit of helping others, whereas White students stress helping others as second to individualistic personal growth and development. Due to South Africa's sociopolitical legacy one is not surprised to find that Black students, more so than White students, see psychology as a medium to facilitate social change (refer to Table 36).

Table 36: Perceived benefits of studying psychology.

PERCEIVED BENEFIT	BLACK (n=159)		WHITE (n=221)	
	n	%	n	%
To increase knowledge &/ understanding	119	74.8	195	88.2
To help others	99	62.3	151	68.3
For personal growth & development	86	54.1	168	76.0
To facilitate social change	78	49.1	78	35.3
Tangible rewards	48	30.2	73	33.0
Social awareness	1	0.6	2	0.9

4.6.6 Career choices and population group

Career choices listed in Table 37 below indicate that more Black students are considering a career in psychology. The fields of community development and law are relatively popular areas for Black people as well. White people, in comparison, are drawn to careers in education and appear to be more unsure of their current career choice.

Among the Black students indicating psychology as a career choice, thirty-five per cent did not specify a particular area of interest; 50% of the White students failed to specify. This may suggest that Black people are more aware of the available options or that White people are still unsure of their area of specialty. Black individuals appeared to prefer industrial and clinical work; similarly White individuals emphasised clinical, industrial and child psychology. The data may imply that White students are aware of a greater range of options within the field of psychology (refer to Table 38).

Table 37: Areas of White and Black students' current career choices.

CAREER	BLACK (n=159)		WHITE (n=221)	
	n	%	n	%
Psychology	78	49.1	81	36.7
Community Development	17	10.7	10	4.5
Other	13	8.2	23	10.4
Law	10	6.3	13	5.9
Biological and/or medical	9	5.7	11	5.0
Unsure	8	5.0	30	13.6
Finance	8	5.0	7	3.2
HRM	6	3.8	5	2.3
Education	6	3.8	31	14.0
Computers	2	1.3	5	2.3
Communication	1	0.6	6	2.7
Politics	1	0.6	3	1.4
Marketing &/ Advertising	0	0	10	4.5
PRO	0	0	2	0.9

Table 38: Population group interest within the psychological field (n=159).

CAREER	BLACK (n=78)		WHITE (n=81)	
	n	%	n	%
Psychologist	27	34.6	40	49.4
Industrial	23	29.5	7	8.6
Clinical	17	21.8	12	14.8
Counselling	3	3.8	2	2.5
Criminal/ Forensic	2	2.6	4	4.9
Educational	2	2.6	2	2.5
Research	2	2.6	1	1.2
Child	1	1.3	7	8.6
Organisational	1	1.3	1	1.2
Neuropsychology	0	0	1	1.2
Sport	0	0	4	4.9

4.6.7 Population group and personality

White students score significantly higher on the Extraversion ($p=.000$), Openness ($p=.00$) and Agreeableness ($p=.016$) scales, whereas Black students appear to be higher on the Conscientiousness scale ($p=.002$) (refer to Table 39).

Table 39: Analysis of variance of NEO-FFI scales by population group.

NEO-FFI SCALES	BLACK (n=159)	WHITE (n=221)	P OF F
Neuroticism	22.16	24.23	.069
Extraversion	28.53	31.71	* .000
Openness	25.36	31.19	* .000
Agreeableness	29.13	30.74	* .016
Conscientiousness	32.25	29.70	* .002

5. DISCUSSION

Results of this study provided support for the emergence of two main trends within the student sample: those interested in a career in psychology, and those who see psychology as an adjunct to their other major studies. The essential aim of the present study was to discover the entry motives of undergraduate psychology students, by getting an understanding of their demographics and personal characteristics, with particular emphasis on personality, gender and population group differences. In addition, the impact of global and national trends was considered within a broader context.

These results, and their limitations, are discussed in more detail below. Reference is made to how these findings compare with other research conducted in Africa, particularly South Africa, and abroad. The implications of the present findings for the psychological profession, with special emphasis on South African academic institutions, as well as suggestions for future research, are discussed.

5.1 SUMMARY OF RESULTS

5.1.1 Demographic and academic features

A sample size of 508 undergraduate psychology students illustrates a significant decline from previous years in the number of students choosing to study psychology. It is also notable that over 70% of the sample were women. Statistics show a Male: Female ratio increase from 1:1.6 in 1988 to 1:2.4 in 1998. The only shifts in population group enrolment have been a slight increase in Black students accompanied by a corresponding slight decrease in White students.

The majority of the student sample attended government high schools, and were schooled in the following core subjects: English, Afrikaans, Biology and Mathematics. Almost 25% of the sample did not take or pass Mathematics at a Matric level. Approximately half the sample matriculated with a C/D average, although alternative access programmes are available for those not obtaining a university exemption.

Eighty percent of the sample are registered in the Human Sciences¹³ (i.e., BSocSc and BA), whereas the remaining 20% are comprised of Science, Commerce and Agriculture degree registered students. Enrolment figures across the undergraduate years suggest that science students take Psychology as an adjunct or elective course, whereas Arts students intend to major in the subject; the most popular co-majors being Sociology, Legal Studies, English and Economics.

¹³ To reflect the changes underfoot at the University of Natal, Pietermaritzburg, the terminology "Human Sciences" is used interchangeably with the aforementioned collapsed "Arts" category.

Approximately two thirds of the sample hope to pursue a postgraduate degree in psychology, with most wanting to do so at the University of Natal, Pietermaritzburg. There is, however, an awareness of the strict selection criteria and the limited places available for postgraduate study. Importantly for the university to note, 41% (n=208) of the sample would have attended another university had they not been able to take psychology as a subject.

5.1.2 Motivation for choosing psychology

Students seemingly learn about the existence of psychology primarily through personal contact with family and friends, within the school setting, through the university, and the media. At least half of the sample has had some contact with a psychologist. This contact was predominantly for career guidance.

The two main reasons for choosing to study psychology are (a) for career-related purposes, and (b) for intrinsic interest or curiosity in this field. Students do not appear to choose to study psychology for primarily altruistic or allocentric reasons. Perceived benefits to this line of study are firstly, to increase knowledge and understanding, secondly, to help others, and thirdly, for personal growth and development. Many students (43%) hope to enter the psychological profession, but are as yet still unsure of specific applications. Clinical and Industrial Psychology are singled out more than other areas.

Although a third of the sample realize that gender stereotypes of a Psychologist do exist, the majority believe one's gender to be irrelevant to a career as a psychologist;

some assert that gender differences bring diversity and variety to the study and practice of psychology, others believe that women are better suited to the profession.

5.1.3 Personality

The NEO-FFI was used to assess personality domains of the student sample. A factor analysis supported the reliability of the instrument. Although somewhat less reliable than the original NEO PI-R scales, this precision was traded for speed and convenience.

When comparing this sample to mean American adult and student domain scores there is generally little discrepancy. The South African student sample is not surprisingly more similar to the American student sample, as compared to the American adult sample. The younger samples tend to score higher on the Neuroticism, Extraversion, and Openness factors, but lower on the Agreeableness and Conscientiousness domains. Of note are the large range of standard deviations present in all three groups (i.e., 4.97 – 8.38).

Although the South African and American college samples appear homogenous, when one investigates the variables of gender and population group some significant within group differences are apparent. The NEO-FFI results indicate that South African women scored significantly higher than men on the Neuroticism, Extroversion, Agreeableness and Conscientiousness scales. White students scored significantly higher than Black students on the Extraversion, Openness and Agreeableness scales, but Black people were significantly more Conscientious.

5.1.4 Gender

Men tend to be exposed to psychology more through the media, academic institutions and computers, whereas women are more exposed through personal contact. At least half of the sample has had some contact with a psychologist; females more so than males.

Women predominantly take Psychology for career- and interest-related reasons, but men seem to see Psychology more as an asset to other courses, use it as a filler/elective, or see it as an easy option. Women see significantly more benefits to the study of psychology than men do. Interestingly women differ from men by placing the altruistic benefit of helping others above that of more autocentric personal growth and development.

Women are registered for significantly more Arts degrees than men, with men enrolled in approximately twice the percentage of women for Science degrees. Many more women plan to enter the profession than men. Of the men pursuing psychology, the majorities are undecided as to the area of specialisation. Women appear to have higher levels of decisiveness.

5.1.5 Population group

White students are exposed to psychology through the media and computers, as well as family, and appear to have greater access to information about psychology. Black students acquire information from school, academic institutions, and books. At least half of the sample has had some contact with a psychologist; White individuals more so than Black individuals.

White people emphasise the interest-, whereas Black people emphasise the career- and course-related reasons for choosing to study psychology. White students see significantly more benefits to the study of psychology than Black students do. In the same way as women differ from men, Black people differ from White people by placing the altruistic benefit of helping others above that of more autocentric personal growth and development.

Black students are registered for significantly more Arts degrees than White students, with White students enrolled in approximately twice the percentage of Black students for Science degrees. Interestingly, although White students appear to see greater benefits to the study of psychology, many more Black individuals plan to enter the profession than White individuals. Of the White students pursuing psychology, the majorities are undecided as to the area of specialisation. Black students appear to be more decided.

5.2 INTERPRETATION OF RESULTS

5.2.1 Demographic and academic features

The number of currently registered students contradicts the global trend, documented in the past decade, of psychology students growing in numbers (Raubenheimer, 1981; Richter et al., 1998). One might question whether this influx was present in all institutions regardless of population group orientation. For example, what was the movement within Psychology departments of historically Black universities?

Although many institutions have been faced with the challenge of accommodating this influx (Shepperd, 1993; Holdstock & Radford, 1998; McDonald, 1997), the University of Natal, Pietermaritzburg is experiencing a decline in student numbers – the effects of various socio-economic stressors, as well as policy changes in tertiary education. For example, there has been an increase in the number of tertiary institutions competing for the academic market (i.e., technikons, colleges, and business schools), changes in university financial aid policy, and increased economic pressures for parents and students. The situation has not improved for academic staff either, as there has been a decision to freeze posts and there is always pressure to improve departmental cost efficiency.

The sample is, however, representative of the well-documented trend coined the ‘feminization’ of psychology; approximately 70% of undergraduate psychology students, as well as people entering the profession, are female (Ostertag & McNamara, 1991; Richter & Griesel, 1999). Given the pervasive gender bias in the occupational

sphere, many observers share Rosenzweig's concern for the possibility of 'professional devaluation' and its effect on psychology and psychologists.

Although it is clear that the 'feminization' of psychology is a definite trend, one would need to add credibility to the data by presenting enrolments of female students in other disciplines or schools. The data may show a definite trend towards 'feminization' in most if not all fields, although possibly not to such a dramatic extent as in the field of psychology. Further research is warranted.

What is apparent from the results is the commitment that a significant percentage of the students show towards a career in psychology. This interest to pursue psychology for career-related reasons lends support to the concept of 'early specialization' or a dedicated B Psych degree. In so doing the proposed changes to the professional practice framework of psychology would support the proposed multiple entry and exit structure. This would make a career in psychology more accessible to students who, at present, are aware of the strict selection criteria and the difficulty in being accepted into postgraduate psychology courses.

This approach would decrease the amount of human potential that is currently being neglected/ wasted through third year psychology graduates who exit the system with no vocational or professional skills. This system would increase career options within the psychological field, and this is likely to lead to increased registration by students to study psychology.

5.2.2 Motivation for choosing psychology

After considering the plethora of career theories that have added to the wealth of information in this area, one is inclined to see the merits of Vondracek et al's (1983) model as the most appropriate in a context as multi-cultural and diverse as South Africa. Awareness of the many internal and external influences needs to be borne in mind when embarking on the dynamic and continuous process of career development. This process is seldom the hypothesized free choice described in many of the career choice theories, but rather the result of decisions that are constrained by a myriad of psychological, sociological, economic, cultural and/or political forces.

In agreement with Behr (1987), the results support the hypothesis that students choose psychology for reasons of intrinsic interest, personal development and satisfaction above altruistic motives of wanting to help others. Solas (1996) described students as self- rather than other-orientated.

5.2.3 Personality

Many of the trait-factor theories are predicated on the notion that patterns of personality-related variables differentiate people in one occupational group from another (Tokar et al., 1998). A complex challenge arises when a discipline, like psychology, is so very diverse. This is illustrated in the number of different degree pathways available to psychology students, as well as the diversity that the discipline offers with fields ranging from industrial psychology to neuropsychology. There can be no one 'psychology' profile.

Having accepted this diversity, it comes as little surprise that this South African sample of psychology students hardly differ from a general sample of American college students. An area of further research may be to use a postgraduate psychology sample as opposed to the undergraduate sample, and define personality types within the various current psychological registrations (e.g., Clinical, Counselling, Educational, Industrial and Research Psychology) as well as subgroups within these categories (e.g., Neuropsychology, Child Psychology, etc).

Some may have argued that the use of a westernized theory and test, such as the Five Factor model and NEO-FFI, was not culture-free or even culture fair. The results, however, support the cross-cultural replicability of the theory as expressed in the test factor, an area that has been the focus of recent research (McCrae & Costa, 1997; McCrae et al, 1998).

Significant differences do exist, however, between males and females, and between White and Black students. In support of recent research, the most significant domains of femininity are higher levels of Agreeableness and Conscientiousness (Reichel & Muchinsky, 1995 in Tokar et al, 1998). The significantly higher degrees of Extraversion and Openness in White students may be a reflection of the ease with which they fit into a westernised university setting. By the same token, Black students may be more Conscientious as they have a wider gap to bridge in terms of cultural and academic challenges.

5.2.4 Gender

Women seem to be drawn to psychology as a career option, more so than men, for a number of reasons. For example, research has shown that women prefer to be in a situation where they can accommodate family commitments (Hackett, 1997). Perhaps psychology is seen as a profession that allows a certain degree of flexibility, if one is self-employed, thus meeting this need.

Interestingly, women, as opposed to men, have relatively stronger altruistic motives for choosing to study psychology. Women's assigned role as the 'nurturers and social harmonizers' may account for this finding (Nelson-Jones, 1991). Whether due to the gender bias in schools, or genuine differences in aptitude, women continue to enter the less technical, less mathematical and less scientific fields. Results have shown that even within the psychological discipline men engage in fields like neuropsychology and research more often than women do.

Although there is an awareness of 'psychological androgyny' as reflected in students' responses to the notion of gender stereotypes, there still exists a pervasive notion that psychology is associated with Adler and Smith's 'Sympathy' state, which in turn is linked to femininity and feminine characteristics (Apter et al., 1985). Gender continues to permeate so many facets of life, e.g., school subject choice, social roles, career choice, and sex stereotyping of science and technology. We seemingly continue to view everything, with varying degrees of subtlety, through Bern's (1993) 'lenses of gender' (in Fitzgerald & Rounds, 1994).

Researchers should continue to question the perception that psychology is a more 'female' career just because it involves caring, nurturing and affirming activities, and whether men in psychology are perceived as having significantly more of these characteristics than a randomly selected male control group.

5.2.5 Population group

Black students, as opposed to White students, have relatively stronger altruistic motives for entering the discipline of psychology. This response may be explained by their documented emphasis on social service within a collectivist culture (Matsebatlela, 1986) as compared to a more individualistic western White culture.

The effects of the imbalance in career counselling and education between population groups is evident. Due to Apartheid, Blacks have lacked exposure to information and opportunities. This has led to a lack of occupational knowledge that may account for the limited number of endorsed specialisations in psychology. This is accompanied by a high level of decisiveness, and may also be a factor of parents' being a poor source of occupational knowledge (Matsebatlela, 1986).

In a country where the relevance of psychology is currently being questioned (PsySSA, 1998), the increase of Black students is rather surprising but nonetheless most welcome. It may be interesting to track how Black people's experience or perception of psychology has changed over the years, and how this may have impacted on student enrolment numbers. Perhaps the discipline is being supported as it is acknowledged to be a professional and social endeavour which is more person- rather than thing-oriented

(Cloete, 1981). Or perhaps, as documented, Black students see psychology as an ‘easy option’ as it holds no mathematical prerequisites.

If the psychological discipline aims to meet the needs of the students, profession and society, then more psychologists who can meet the language and cultural requirements are needed. The multiple entry and exit system will mean that more people at lower levels may be credentialed to practice even though under circumscribed conditions. In reality it may be that Level 2 Psychological Counsellors and Level 3 Helpers will be more accessible to lower socio-economic rural communities.

5.3 IMPLICATIONS, APPLICATIONS AND FUTURE RESEARCH

Motives for entry into the study of psychology were enlightening, although there seems to be an aspect of psychodynamic motives that as yet have not been tapped. The methodology in this study did not lend itself to self-disclosure of a personal nature, and so future research may consider the challenge of accessing this type of information. In addition, a comparison of contact time with psychologists between this sample and a randomly selected control group may yield interesting information. One might hypothesize that previous contact with a psychologist would increase the probability of a student taking psychology as a subject at university.

The rationale behind using the Five-Factor Model and the NEO-FFI has been detailed above. An interesting variation may have been the addition of Holland's RAISEC model and its correlation with the Social domain as it relates to psychology, or other reputable personality inventories (e.g., the 16PF and MBTI).

Institutions are encouraged to investigate a prediction model that is tailored to individual departmental needs, which includes an affirmative action plan where necessary that is there to serve the best interests of the students. Pressures to increase selection criteria to reduce failure rates, such as having a mathematical prerequisite, may cause females and disadvantaged students to involuntarily select out of psychology. A mathematical or statistical requirement may make psychology less accessible to many previously disadvantaged students, and it may be argued that such a policy would be inequitable. Conversely, a prerequisite may assist students in assessing whether they are well suited to the course of study. A thorough review of educational institutions and their best practice should be considered a necessity.

Research is also needed to assess course structure and content, and whether the expectations of the students are being met. It appears that offering additional courses (such as industrial psychology and social work) would encourage students to remain within the department. Results also show that structuring course content to include personal application of theory and acquisition of knowledge would meet student expectations.

Extended study must consider a broader spectrum of variables effecting career choice. Gender, personality and population group are only three of a myriad of influencing variables. For example, one could investigate self-concept, maturity, etc. In addition further research is needed in the area of constrained career decision-making. For example, most career theories include the assumption that adequate occupational knowledge is a prerequisite for sound career decision making.

Such theories describe the career counselling process as involving a sequence of exploration, decision making and reality testing. In each of these steps knowledge about occupations is essential. Thus career counsellors believe that for effective career decisions to take place, information that is both accurate and sufficient is needed (Watson & Stead, 1993). Watson and Stead also contend that Black pupils in South Africa, due to the inadequate educational system, lack occupational knowledge. The disparity between theory and practice is too large to be bridged, and should be addressed as a matter of urgency.

Although emphasis has been placed on the myriad of internal and external forces acting on and within an individual during career decision-making, the complexity of these forces working in conjunction should not be overlooked. Periodically throughout the data Black students and females shared very similar statistics. This may be explained by the communitarian nature of psychology – women being stereotyped as nurturers and the Black culture as collectivist in nature. The inferred parallel between Individualism/Collectivism and Autocentricism/Allocentricism holds promise for future research. One might also infer that Black students and females have similar aspects as a result of the historical disadvantages they have shared.

Albeit beyond the scope of this study, one can speculate whether a gender and population group continuum exists. For example, would one expect it to run: White males, Black males, White females, Black females; or perhaps White males, White females, Black males, Black females?

In conclusion, there is a need to maintain a continuous monitoring of the psychological profession, including undergraduate student enrolment, through awareness of local, national and global trends. Statistics mapping trends, for example, in the ‘professional devaluation’ predicted by Rosenzweig (1994), will be invaluable to policy makers and will transform psychology into a reflexive discipline. This awareness will allow training institutions to be proactive rather than reactive in planning and strategizing to meet the challenges of the new millennium.

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7. APPENDICES

7.1 Appendix 1: Questionnaire – Department of Psychology Undergraduate Survey

7.2 Appendix 2: Coding scheme for the aforementioned Undergraduate Survey.

**7.1 APPENDIX 1: QUESTIONNAIRE – DEPARTMENT OF PSYCHOLOGY
UNDERGRADUATE SURVEY¹⁴**

¹⁴ This document has been reduced in size to allow for the requirements of binding.

Department of Psychology Undergraduate Survey

The Department has an on-going commitment to curriculum development and to making Psychology as relevant as possible to student needs and employment opportunities, whilst reflecting the present status of the discipline internationally. In order to assist us in achieving this objective, it would be appreciated if you took the time to seriously think through and complete this questionnaire. The information gained will assist us in achieving our overall objective of making this a student-centered and dynamic department. Please tick over the appropriate text.

I. Student profile

1. What is your present year of registration in this department?

1 st year (i.e. Psychology 1) ₁	2 nd year (i.e. Psychology 2) ₂	3 rd year (i.e. Psychology 3) ₃
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2. What is your age? _____ years

3. What is your gender? Male₁ Female₂

4. What is your marital status?

Single ₁	Married ₂	Separated ₃	Divorced ₄	Widowed ₅	Other (Please specify)
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5. What is your ethnic membership/ population group? *(For demographic use only)*

African ₁	Coloured ₂	Indian ₃	White ₄	Other (Please specify)
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6. What is your nationality? _____

7. If you are South African, what is your home/ 'non-term' province?

Eastern Cape ₁	Free State ₂	Gauteng ₃	KwaZulu/Natal ₄	Mpumalanga ₅
Northern Cape ₆	Northern ₇	North West ₈	Western Cape ₉	

8. What is your home language?

Afrikaans ₁	English ₂	Xhosa ₃	Zulu ₄	Other (Please specify)
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9. At what school did you matriculate?

Private ₁	Ex Model C ₂	Ex Model D ₃	DET ₄	Indian ₅
Other (Please specify)				

10. Was your schooling...

Co-ed (i.e. boys and girls) ₁	Single Sex (i.e. boys or girls only) ₂
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11. List your matric subjects, the result you obtained for each of these subjects and whether you passed on the higher or standard grade. (Please make use of the following guidelines: **A**=+80; **B**=70-79; **C**=60-69; **D**=50-59; **E**=40-49; **F**=30-39).

Matric Subject	Result	Higher or Standard Grade

12. What was your matric final average? A₁ B₂ C₃ D₄ E₅ F₆

II. Psychology

1. In your own words, where did you first hear or learn about psychology as a university subject?

How would you classify this source in the categories given below: (Tick as many as are applicable)

(a) Media:

Books ₁	Magazines ₂	Newspapers ₃	Television ₄	Other (Please specify)
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(b) Personal Contact:

School ₁	Family ₂	Friends ₃	Other (Please specify)
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(c) Guidance

School counsellor ₁	Teacher ₂	University ₃	Open days ₄	Other (Please specify)
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2. Have you had previous experience with a registered psychologist?

No none ₁	Yes – for career guidance ₂	Yes – for professional consultation ₃	Yes – socially ₄
Other (Please specify)			

3. In your own words why did you choose psychology as a subject?

How would you classify your reasons in the categories given below?

For a career ₁	Asset to other courses ₂	Curiosity/ Interest ₃	Filler/ Elective ₄	Easy Option ₅
Other (Please specify)				

4. How do you think the study of psychology will benefit you? Will it enable you

* To help others.....	1
* To increase knowledge and/or understanding (e.g. to know about individual and social behaviour).	2
* For personal growth and development (e.g. intellectual stimulation, greater self-awareness).....	3
* To facilitate social change (e.g. through community organisation and activities).....	4
* For tangible rewards (e.g. income/ salary, career, status, satisfaction).....	5
* Other (Please specify).....	

5. What are your majors? (Please specify Psychology if applicable)

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6. What is your current degree registration?

BA ₁	BAgric ₂	BCom ₃	BSc ₄	BSocSc ₅	Other (Please specify)
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7. At this stage of your studies what is your chosen career? _____

8. Do you think psychology is (a) essential

1
2
3

 or (b) advantageous

2
3

 or (c) irrelevant

3

 to your current career choice and why?

9. What would you have done if you were unable to take psychology as a subject at this university?

Gone to another university ₁	Changed degrees ₂	Taken another elective ₃
Other (Please specify)		

10. Do you see being a Psychologist as a 'female job' or a 'male job'? Female₁ Male₂ Either₃

Why?

11. Do you intend registering for postgraduate studies in psychology? YES₁ NO₂

12. If YES, do you hope to do so at this University? YES₁ NO₂ Why?

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE.

**7.2 APPENDIX 2: CODING SCHEME FOR THE DEPARTMENT OF
PSYCHOLOGY UNDERGRADUATE QUESTIONNAIRE.**

STUDENT PROFILE

1. Case number

First digit refers to student's present level of registration

1001-1269 = Level 100 questionnaires

2351-2494 = Level 200 questionnaires

3526-3675 = Level 300 questionnaires

2. Present level of registration

1 = Level 100 (1st year)

2 = Level 200 (2nd year)

3 = Level 300 (3rd year)

3. Age

“#”

4. Gender

1 = Male

2 = Female

5. Marital status

1 = Single

2 = Married

3 = Separated

4 = Divorced

5 = Widowed

6 = Other (polygamy, common law marriage)

6. Ethnic membership / population group

1 = African

2 = Coloured

3 = Indian

4 = White

5 = Other (Asian, Portuguese, Jewish)

7. Nationality

1 = South African (including dual citizenship)

2 = SADEC/ Southern Africa (Botswana, Lesotho, Swaziland, Zimbabwean, Malawi)

3 = European community (British, Polish, Scottish, Dutch, French, German)

4 = Other (Mauritian, American, Israeli)

8. Home province (if South African)

1 = Eastern Cape

2 = Free State

3 = Gauteng

4 = KwaZulu/ Natal

5 = Mpumalanga

- 6 = Northern Cape
- 7 = Northern
- 8 = North West
- 9 = Western Cape
- 10 = not South African
- 11 = other (SADEC)

9. Home language

- 1 = Afrikaans
- 2 = English
- 3 = Xhosa
- 4 = Zulu
- 5 = North Sotho/ Pedi
- 6 = South Sotho/ Tswana/ Sesotho
- 8 = Shona
- 9 = European (French, German, Dutch)
- 10 = Other (Russian, Creole, Chinese, Hebrew)
- 13 = Swazi/ Swati/ Siswati
- 14 = Ndebele
- 15 = Tsonga/ Xitsonga
- 16 = Venda
- 17 = English + European language
- 18 = English + African language
- 19 = English + Other language

10. Type of high school

(a) Original categories

- 1 = Private
- 2 = Ex Model C
- 3 = Ex Model D
- 4 = DET
- 5 = Indian
- 6 = Other

(b) Simplified categories

- 1 = private
- 2 = government
- 3 = unsure

11. Boys or girls at high school

- 1 = co-ed (boys and girls)
- 2 = single sex (boys or girls)
- 3 = both options indicated (changed schools)

12. Matric subjects, results and grade

In the database every subject had a column. Each subject taken by a student was coded first for their result, and secondly for their grade. These two codes were separated by a period. For example: 2.1 = B on higher grade; 4.2 = D on standard grade.

- 1 = English
- 2 = Afrikaans
- 3 = Zulu

4 = French
5 = Xhosa
6 = German
7 = Maths
8 = Admaths
9 = Science
10 = Geography
11 = Biology
12 = History
13 = Technical Drawing
14 = Home Economics
15 = Typing
16 = Business Economics
17 = Art
18 = Agriculture
19 = Accountancy/ Accounting
20 = Economics
21 = Biblical studies/ Religious Instruction
22 = Speech &/ drama
23 = Computers
24 = Metal work
25 = North Sotho
26 = Siswati
27 = Venda
28 = Physiology
29 = Music
30 = Islamic studies
31 = General paper
32 = Sesotho
33 = Psychology
35 = Electronics
36 = Tsonga
37 = Irish
38 = Needlework/ clothing
40 = Hebrew
41 = Spanish

1 = A (80-100%)
2 = B (70-79%)
3 = C (60-69%)
4 = D (50-59%)
5 = E (40-49%)
6 = F (30-39%)
7 = G (20-29%)
8 = H (10-19%)
9 = non equivalent grades (A-levels)

1 = higher grade
2 = standard grade

13. Matric final average

1 = A (80-100%)

- 2 = B (70-79%)
- 3 = C (60-69%)
- 4 = D (50-59%)
- 5 = E (40-49%)
- 6 = F (30-39%)
- 7 = foreign grading systems (A-levels, O-levels, GCSE)

PSYCHOLOGY

1. Psychology information sources

(a) Media

- 1 = books
- 2 = magazines
- 3 = newspapers
- 4 = television
- 5 = computers (the Internet)
- 6 = radio
- 7 = university prospectus or pamphlets
- 8 = other (correspondence)

(b) Personal contact

- 1 = family/ friends (psychology or university students, parents)
- 2 = social groups (church, clubs, societies, sports)
- 3 = school (counsellors, teacher, boarder mistresses/ masters)
- 4 = university (lecturers, Student Counselling Centre, Orientation Programme, open days)
- 5 = other tertiary academic institutions or courses (bridging courses, technikons, colleges, other universities)
- 6 = other (doctors, social workers, through work)

2. Previous experience with a registered psychologist

- 1 = no none
- 2 = career guidance
- 3 = professional consultation
- 4 = socially
- 5 = university lecturers
- 6 = more than one
- 7 = other (sports psychologist, psychiatrist, family member is a psychologist)

3. Why psychology was chosen as a university subject

(a) Qualitative answer

- 1 = Career-related
Quoted examples: "It allowed for many career opportunities, and I was advised to take it for my career choice" (3526). "I chose Psychology because my career aim is to become a psychologist" (3535).
- 2 = Course-related (new subject, for the credits, easy course, sounded interesting)

Quoted examples: “It was a break away from the dry boring science subjects and also helped with my other courses” (1004). “I felt that it would add credit to any other subject or other possible social science careers” (3535).

3 = Intrinsic interest (what makes people tick, always wanted to, stimulating content)

Quoted examples: “I am interested in the how and why of people – what makes them act as they do. Psychology fascinates me” (1009). “Rationales behind people’s actions have always interested me” (3534).

4 = Tangible rewards

Quoted examples: “To have a lot of money and status” (3577). “As a career I realize the need to make money thus I took Psychology” (3528).

5 = Other

Quoted examples: “I really want to know how to influence people” (2435). “I am just doing it because I have already chosen it” (3674). “I admire a Psychologist I know and want to be like her” (2437).

(b) Quantitative answer

1 = for a career

2 = asset to other courses

3 = curiosity/ interest

4 = filler/ elective (for the credits)

5 = easy option

6 = other (personal improvement, tangible rewards)

4. Benefits of studying psychology

1 = to help others

2 = to increase knowledge and/ or understanding (to know about individual and social behaviours)

3 = for personal growth and development (intellectual stimulation, greater self-awareness)

4 = to facilitate social change (through community organisation and activities)

5 = for tangible rewards (income, salary, career, status, satisfaction)

6 = to be more socially aware (to think critically and comprehend different aspects of life)

7 = other (course compatibility)

5. Majors

1 = Psychology

2 = Sociology

3 = Legal studies

4 = Political science/ politics

5 = Economics

6 = Marketing and advertising

7 = Human resource management

8 = Genetics

9 = Zoology

10 = Business information systems

11 = Classical civilization

13 = Philosophy

14 = History

15 = Computer science
16 = English
17 = Biometry
18 = Microbiology
19 = Biochemistry
20 = Fine arts
21 = Business administration
22 = Geography
23 = Zulu
24 = Community resource management
25 = Economic history
26 = Management
27 = Religious studies
28 = Maths
29 = Statistics
31 = German
32 = Hydrology
33 = Applied language studies
34 = Accounting
35 = Auditing
36 = Nutrition
37 = Chemistry
38 = Practical theology
39 = Drama
41 = French
42 = Physics
43 = Applied chemistry
44 = Management finance
47 = Biblical studies
48 = Afrikaans
52 = Geology
53 = Applied geology
54 = Human geography

6. Current degree registration

1 = BA
2 = BAgric
3 = BCom
4 = BSc
5 = BSocSc
6 = Other

7. Chosen career

1 = unsure
2 = psychologist
2.1 = educational psychologist
2.2 = industrial psychologist
2.3 = counselling psychologist
2.4 = clinical psychologist
2.5 = research psychologist
2.6 = neuropsychologist
2.7 = sport psychologist

- 2.8 = child psychologist
- 2.9 = criminal/ forensic psychologist
- 2.11 = organisational psychologist
- 3 = education
 - 3.1 = teacher
 - 3.2 = school/ guidance counsellor
 - 3.3 = remedial teacher
 - 3.4 = remedial art teacher
 - 3.5 = preschool teacher
 - 3.6 = dancing teacher (ballet)
 - 3.7 = special education
- 4 = law
 - 4.1 = mediation/ arbitration
 - 4.2 = lawyer
 - 4.3 = advocate
 - 4.4 = police officer
 - 4.5 = magistrate
 - 4.6 = commercial law
- 5 = communication
 - 5.1 = journalist
 - 5.2 = novelist
- 6 = finance
 - 6.1 = stockbroker
 - 6.2 = economist
 - 6.3 = business person
 - 6.4 = statistician
 - 6.5 = accountant/ CA
 - 6.6 = business management
 - 6.7 = business consultant
- 7 = biological/ medical
 - 7.1 = geneticist
 - 7.2 = microbiologist
 - 7.3 = genetic counselling
 - 7.4 = physiotherapy
 - 7.5 = chemistry
 - 7.6 = medicine
 - 7.7 = medical scientist
 - 7.8 = biochemistry
 - 7.9 = lab technician/ genetic engineer
 - 7.11 = pharmacy
- 8 = human resource management
 - 8.1 = personnel management/ manager
- 9 = marketing and/ or advertising
 - 9.1 = copywriter
 - 9.2 = buyer
- 10 = computers
 - 10.1 = computer analyst
 - 10.2 = systems analyst
 - 10.3 = computer programmer
- 11 = public relations officer
 - 11.1 = tourism
- 12 = community development

- 12.1 = social worker
- 12.2 = town and regional planner
- 12.3 = aid worker in SADEC
- 12.4 = health worker
- 12.5 = community worker
- 12.6 = counsellor
- 13 = other (nutritionist, researcher, librarian, interpreter, sports presenter)
- 14 = politics
 - 14.1 = political analyst
 - 14.2 = diplomatic relations

8. The outcome

(a) *Psychology is...(take highest i.e. 1>2>3)*

- 1 = essential
- 2 = advantageous
- 3 = irrelevant

(b) *Because...*

- 1 = People skills
Quoted examples: "Psychology will help me to interact with others" (1003).
"I will be working with young people as a teacher and would like to relate to them well" (3532).
- 2 = Insight into actions/ behaviours/ cognition
Quoted examples: "It is good to know why we do certain things" (1038).
"Better understanding of people and social settings" (3526).
- 3 = For career purposes in psychology
Quoted examples: "Can't be a Clinical Psychologist without psychology. It is a necessary stepping stone" (3529). "Cannot give sound advice without professional training" (3536).
- 4 = For career using psychology
Quoted examples: "Computer psychology, designing user friendly programmes for psychological testing" (1002). "It is essential to understand the mental state of clients in law and medicine" (2359).
- 5 = Broadens thinking/ paradigms
Quoted examples: "Interesting and useful for personal growth and development" (1063)
- 6 = Other
Quoted examples: "It exempts me from doing first two years at med. school" (1211).

9. If unable to take psychology at UNP

- 1 = gone to another university
- 2 = changed degrees
- 3 = taken another elective
- 4 = protested/ questioned
- 5 = gone to tech, practical skills
- 6 = other (more than one, changed careers)

9. Gender stereotypes

(a) *Psychology is for...*

- 1 = females
- 2 = males

- 3 = either
- 4 = either but preferably females
- 5 = either but preferably males

(b) Because...

- 1 = Intrinsic female qualities (more understanding, comforting, emotionally sensitive, compassionate, gentle, perceptive)
Quoted examples: "They are more understanding and empathetic to others' problems" (3532). "Women have the ability to understand various situations and their instinct" (1009).
- 2 = Intrinsic male qualities (more candid, frank, business orientated, objective, emotional detachment)
Quoted examples: "Guys understand certain aspects that girls find hard to even think about, and girls tend to get too emotionally involved" (1127).
- 3 = Depends on knowledge, proper training
Quoted examples: "As long as you have a decent qualification" (3673). "One needs to study and qualify" (3611).
- 4 = Sex is irrelevant (everyone has feelings, need to care, have insight, right personality, no stereotypes)
Quoted examples: "Never saw this as an issue" (3534). "The profession can be done just as effectively regardless of gender" (1001).
- 5 = Diversity and variety (gender is different, but both are essential, both have a valuable and necessary contribution to make, good in different situations)
Quoted examples: "Some people are more comfortable with a particular gender, therefore, both are necessary in the field" (3529). "Each sex will contribute to the discipline in their own way. Patients may have a preference. Equality is the way" (3536).
- 6 = Recognizes/ the awareness of stereotypes (through TV)
Quoted examples: "The world is getting to the stage where in almost any sphere prejudices are illegal, I see women now fulfilling their potential" (1041).
- 7 = Other
Quoted examples: "There are almost triple the number of females than males in our class. So many women are Psychologists that the income has gone down" (3549).

10. Intention to register for postgraduate studies in psychology

- 1 = yes
- 2 = no
- 3 = do not know, unsure, maybe

11. Where do you intend to register and why

(a) Do you hope to do so at this university?

- 1 = yes
- 2 = no
- 3 = not intending to do postgraduate in psychology

(b) Yes because...

- 1 = Good reputation (staff, training)

Quoted examples: "This university provides quality education" (2356).
"The staff as well as the Honours and Masters' programmes offered are excellent. I have heard that it is the best in Natal" (3581).

2 = Convenience (settled, proximity to campus or family)

Quoted examples: "It is near to my home and I am settled here" (1006).

3 = Familiarity (like campus life)

Quoted examples: "I know the department and how it works" (3536).

4 = Unsure

5 = Other

(c) No because...

1 = Bad reputation

2 = Inconvenience (too far from home)

Quoted examples: "I don't want to live in Pietermaritzburg much longer" (3534).

3 = Course not offered (industrial psychology, organisational psychology, pre-school teaching)

4 = Unsure

Quoted examples: "I am still thinking about trying a bigger university or perhaps taking a year off to travel" (3531).

5 = Changing universities

Quoted examples: "I have considered Cape Town as that is where I would like to settle" (3529).

6 = Other (harsh/ strict selection criteria, hard to get in)

Quoted examples: "There is little hope because they only chose about four people or less. So I might be in the unlucky club" (2354).