A LONGITUDINAL STUDY OF THE OCCUPATIONAL ASPIRATIONS AND PERCEPTIONS OF FIFTEEN TO SIXTEEN YEAR-OLD SOUTH AFRICAN ADOLESCENTS

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Dedicated to my family for their love and continual support in helping me reach my occupational aspiration of becoming a psychologist.

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SUMMARY

While career development is viewed as a lifelong process, there are numerous limitations regarding existing career theories and research pertaining to the adolescent population. Further, insufficient longitudinal research represents one of the major obstacles for a more holistic understanding of career development across the lifespan. Thus, the present longitudinal project of which the current study forms a part was initiated to address the lack of research and theory concerning adolescent career development. The larger longitudinal project intended to make information available regarding the occupational aspirations and perceptions of a sample of South African children and adolescents, from early childhood into their adolescent years. The current study investigates the occupational aspiration development of 15 to 16 year old South African adolescents. It is argued that the South African knowledge base on career development behaviour still requires extensive development, especially with regards to adolescent career development. The current longitudinal study aimed to explore and describe possible developments and changes over a two year period in the interest typology, occupational status level and occupational gender stereotypes of the 43 adolescents. Additionally, the study aimed to explore and describe the adolescents’ reflections on their own occupational aspiration development. The findings of this study will provide necessary baseline information on the development of South African adolescents’ occupational aspirations and will offer valuable recommendations for the future development of adolescent career education programmes.

Adolescent and career development theories were used to provide a context for the current study. Semi-structured interviews and biographical questionnaires were utilized to record verbal data which was transposed into nominal data for analysis. Thus, the current study was quantitative in nature. The semi-structured interview comprised four general aspects that included: the adolescents’ occupational aspirations, the number of occupations
they knew about, how much they knew about the expressed occupations, and the extent to which they held gender stereotypes concerning fourteen different occupations. The data gained was coded according to Holland’s (1985) classification system of interest typologies. Also, the adolescents’ occupational aspirations were coded according to their status levels. The coded data was subsequently analysed using both descriptive statistics in the form of frequency counts and percentages as well as inferential statistics in the form of chi-square analysis. Content analysis was also conducted on the adolescents’ reflections on their own career development as a means to extract themes.

The results indicated that adolescence was an important phase of career development and the findings supported adolescent and career development theories. The results of the study also indicated that the majority of adolescents aspired to Investigative type occupations across both years of the study and most adolescents consistently aspired to high status occupations. In addition, adolescents do not appear to gender stereotype in terms of occupations. Lastly, it was found that most adolescents could reflect on their career development, predominantly attributing changes in their occupational aspirations to changes in their interests.

The present study has made available important information regarding the occupational aspiration development of a group of South African adolescents, which can be utilized in further research and as a foundation on which to develop career education programmes.

Key words: career development, gender stereotypes, occupational aspirations, occupational perceptions, adolescents, longitudinal
CHAPTER 1

Introduction

Gottfredson (2005) viewed occupational aspirations as the assimilation of an individual’s assessment of the compatibility and accessibility of an occupation, while Super (1990) defined occupational aspirations as an individual’s attempt to implement their self-concept. Rojewski (2007) described occupational aspirations as individuals’ desired occupational aims or objectives given optimal circumstances. Further, occupational aspirations are viewed as future occupational choices that incorporate information about individuals as well as opportunities that they are able to obtain (Rojewski, 2005). Occupational aspirations are most frequently made known by answers to simple questions such as “what would you like to do or become when you grow up?” The answers to these simple questions are believed to be often stable and accurate predictors of future occupational choice (Rojewski, 2007). Focussing on the process by which occupational aspiration development occurs is important when one considers that occupational satisfaction is one of the central aspects of an individual’s personal happiness (Sharf, 2006, 2010). Occupations provide individuals with a source of self-evaluation and a sense of identity, and essentially constitute a major part of individuals’ day-to-day lives (Bandura, Barbaranelli, Campara & Pastorelli, 2001). Zunker (2006) notes that occupational decisions impact on all aspects of an individual’s life and therefore calls attention to the importance of occupational intervention and counselling. Despite this, the literature emphasises the limited attention given to the process by which occupational aspiration development takes place.

Occupational aspiration development takes place across the lifespan and the literature on career development has acknowledged the importance of the adolescent career developmental process (Helwig, 2004, 2008; Skorikov & Patton, 2007; Wahl & Blackhurst, 2000). Despite this, there are numerous limitations regarding adolescent career development
theories and research (Skorikov & Patton, 2007), which have been emphasised for several decades. About a decade ago Mau and Bikos (2000) argued that there were various challenges regarding adolescent career development, some of which included the need for inclusive and consistent career theory and research. Years later Tien (2007) and Sharf (2010) report that many of these challenges remain unaddressed and thus our understanding of adolescent occupational aspiration development remains limited. Rojewski (2007) recommends that an understanding of how occupational aspirations develop will offer greatly needed insight into the process of career development. Rojewski has thus called for research which examines the different dimensions of adolescent occupational aspirations, while Schultheiss (2008) suggests that there needs to be a revision of career theory in order to provide a way forward.

Understanding the reasons and the means by which people make occupational decisions and assisting individuals in making these decisions has been the role of career counsellors for many decades (Spokane & Cruza-Guet, 2005). However, the task of assisting individuals in their career development has been limited by a lack of theoretical depth in terms of current adolescent occupational aspiration development. Although progress has been made, existing theory on adolescents’ career development has been based largely on middle-class suburban adolescents (Ali & Saunders, 2009). The development of occupational aspirations has been explained by several theories, two of the more renowned being Super’s (1990) life-span/life-space theory and Gottfredson’s (1981, 2005) theory of circumscription and compromise. Super (1957) viewed career development as taking place across the lifespan and both his stage model and self-concept theories addressed the adolescent years. Gottfredson (1981, 2005) also considered the adolescent process of occupational aspiration development in her four-stage model of circumscription by which adolescents eliminate less acceptable occupational aspirations over time based on perceived internal and external barriers. Due to
adolescent career development becoming more complex in the contemporary world (Mortimer & Zimmer-Gembeck, 2007), and with theory on adolescents’ occupational aspirations being relatively limited, Skorikov and Patton (2007) ask whether occupational aspiration development should be explored from the basis of existing theory or whether theory needs to be developed based on research findings. Schultheiss (2008) suggests that the development of new theory based on sound research findings would reinvigorate the study of career development. However, this may further fragment the already disparate research on career development as a whole (Watson & McMahon, 2008b).

An essential aspect of studying career development within the South African context is to examine international theory on career development with reference to this country’s unique context. Understanding the differences between the career development of South African adolescents and their international counterparts can have far reaching effect on the development of theories that are relevant to the South African context. Thus, the absence of context specific theory has meant that South African populations, such as adolescents, are often described and understood in terms of Western career theories (Stead & Watson, 1998, 2006).

Research on adolescent occupational aspiration development has been fragmented to date, with mixed results evident regarding various occupational aspiration issues (Skorikov, 2007). Nevertheless, research has demonstrated that occupational aspirations are generally stable from adolescence onwards. It has been found that occupational aspirations could be used to predict occupation-related decisions 8 to 12 months after they have been expressed (Gottfredson, 2002). Various variables such as psychological, social and environmental factors influence occupational aspiration development. More specifically, gender, race and socioeconomic status variables have received particular attention in terms of research (Rojewski, 2007). Rojewski’s review also stated that career researchers have reported mixed
findings regarding these variables. With regards to methodology, the literature has called for more longitudinal research in the field of career development and has criticised the dominance of cross-sectional research (Germeijs & Verschueren, 2007; Hartung, Porfeli & Vondracek, 2005; Schultheiss, 2008).

Within the South African context research on adolescents’ occupational aspiration development is limited (Hunter, 2009). There is a great need for South African research on adolescent career development and occupational aspirations to be applied to the improvement and development of career awareness programmes relevant to the South African context (Stead & Watson, 2006). It is expected that the present research study will provide findings which can assist in the improvement and development of these programmes. Similar to international trends, Hargreaves (2007) notes that South African research on career development has been largely cross-sectional in nature which, although beneficial, does not aid towards a more holistic understanding of the career development process. This highlights the great need for longitudinal research on career development in the South African context. Many national as well as international researchers have highlighted the value of adopting a longitudinal methodology in the study of career development (Betz, 2001; Crause, 2006; Rojewski, 2007; Savickas, 2002b; Skorikov, 2007; Tracey, 2001).

The present study uses a longitudinal methodological approach. This study forms part of a larger longitudinal project which was started due to the lack of research into the career development of South African children and adolescents. The larger project was developed with the aim of providing information on the career development of children and adolescents, with attention paid more specifically to the development of their occupational aspirations and perceptions. A national research study demonstrated that the occupational aspirations of adolescents appear unrealistic and not market orientated, which further emphasised the need for longitudinal research in the South African context (Watson, Foxcroft, Horn & Stead,
1997). It can thus be implied that South African adolescents may find it difficult to become established in a career that would be suited to their interests and abilities, as well as provide adequate financial remuneration.

It has been recommended that future research on adolescents’ occupational aspiration development should be linked to adolescent career education (Rojewski, 2007; Skorikov & Patton, 2007), especially school-based education programmes (McMahon, Carroll & Gillies, 2001; Stead, 1996). Thus a major motivation of the present study is to provide valid research that can facilitate the improvement and development of career education programmes. This motivation stems from previous studies in the current longitudinal study. Sharf (2006, 2010) proposes that career education programmes should equip adolescents in such a way that they are able to make suitable subject and career choices in high school and at a tertiary level. Research has also suggested that career education programmes should focus on occupational gender stereotyping and parental influences. Further, it is recommended that career education programmes address the establishment of learning environments that provide accurate occupational information (McMahon et al., 2001; McMahon, Gillies & Carroll, 2000; Wahl & Blackhurst, 2000).

The value of studying the career development of adolescents and the importance of career education programmes and career counselling for adolescents has also been emphasised by international studies (Sharf, 2006, 2010). Germeijs and Verschueren (2007) recommend that adolescent career counsellors should focus on both career and non-career variables such as career information, personality, emotional factors, and family relationships. Research findings further suggest that a lack of adequate career preparation in childhood and adolescence can ultimately lead to vocational problems in young adulthood. Also, the reciprocal relationship between adolescents’ academic achievement and career success is widely acknowledged in the career literature. Thus, it is recommended that career education
programmes and counselling be combined with educational interventions in order to produce a positive effect (Skorikov, 2007). Skorikov and Patton (2007) call for the development of innovative career education programmes aimed at early prevention through securing an opportunity for all adolescents to become successful in an adult work role. In addition, Skorikov (2007) suggests that the most important practical implication of research findings to date show that helping adolescents with finding a personally fulfilling career and making an early commitment to their choice can have significant positive effects on their well-being and facilitate their career development.

On a national level, there is still a significant lack of career education programmes in South African schools (Crause, 2006). Various factors should be considered when examining the relevance of career education programmes in South Africa. Firstly, the theoretical underpinnings of such programmes need to be explored (Hargreaves, 2007). Kirkpatrick and Mortimer (2002) explain that the variation in the structure of education and work in different countries influences career development. Thus, South Africa needs career development theories that are relevant to its economic, social and political environment. Secondly, South Africa’s current economic climate needs to be taken into consideration (Hargreaves, 2007). It is a well known statistic that the majority of South Africans are unemployed (Stats SA, 2008), which points to the significance of career education programmes in preparing children and adolescents for the competitive labour market in which employment is rare. Previous studies in the current longitudinal project have noted that the introduction of career programmes at an early age could be useful in creating a realistic understanding of South Africa’s labour market and employment trends. For example, Hunter (2009) suggested that the participants in her study who aspired to high status occupations would need to be informed regarding the potential barriers to as well as the realistic implications of such aspirations.
The need for research and interventions in the area of adolescent career development is further highlighted by the South African context with regard to career education. A curriculum referred to as Curriculum 21 has recently been introduced by the South African Department of Education. Several revisions have been made and continue to be made to this curriculum since its implementation. In particular, Curriculum 21 implemented a compulsory subject termed Life Orientation. This subject focuses on the education of life skills and includes career education programmes across all grades (Crause, 2006; Hargreaves, 2007; Hunter, 2009). Recent educational policy change has also included career education as an important field of learning which requires attention. Unfortunately, logistical problems have made the implementation of career education programmes difficult (Cox, 2004). Few career education programmes have been implemented at the primary school level and additionally they have been inadequately implemented in high schools (Swartz, 2000). Further, there is limited research on the career development of South African adolescents which calls into question the validity of existing career education programmes (Cox, 2004; Hargreaves, 2007; Hunter, 2009). This emphasises the need for South African longitudinal research on which career education programmes can be based. The present longitudinal study aims to provide information that is applicable to the South African context and, more specifically, relevant to the development of adolescent career education programmes.

The present study forms part of a larger longitudinal project and aims to provide baseline information on the career development of 15 to 16 year old South African adolescents, with specific reference to their occupational aspirations and perceptions. In particular, the present study aims to explore and describe the developments and changes that may occur over a two year period in terms of these adolescents’ occupational aspirations with regard to their interest typology, their occupational status level and occupational gender stereotyping. This study also aims to explore and describe adolescents’ reflections on their
own career development over time. It is hoped that the results of the present study will provide meaningful information that can support the development of career education programmes for South African adolescents.

The contents of this study are outlined in this concluding paragraph of this chapter. The present chapter introduces the present study and places the research within context. Also, an outline of the following chapters and their purposes are explained below. Chapter 2 examines adolescent and career developmental theories relevant to the present study. These theories provide a basis from which to examine the occupational aspirations and perceptions of the present study’s participants. Chapter 3 reviews the relevant international and national research with regard to adolescents’ career development. This provides a foundation from which to analyse and compare the findings of this study. Chapter 4 describes the research methodology utilised in the present study, including the research design, sampling technique, research measures, research procedure and data analysis used to conduct the research. Ethical issues relevant to the study are also considered. Chapter 5 presents the results of the study, explaining the possible changes over a two year period of occupational aspiration typology, status level and gender stereotyping. Lastly, Chapter 6 discusses the results with reference to adolescent and career development theory as well as international and national research. In addition, limitations and recommendations for future research are outlined. The following chapter focuses on the adolescent and career development theories applicable to the present study.
CHAPTER 2

Theory Review

The present study will contextualise the career development of adolescents within the broader framework of developmental psychology which studies human development over the entire life span (Meyer, 1998). Developmental psychology is defined as the systematic study of behavioural, cognitive, emotional and personality changes that occur during specific developmental stages (Bee & Boyd, 2002). Human development is seen as the core of developmental psychology which examines how people change and how they stay the same over the entire life span (Kail & Cavanaugh, 2000). These changes occur in the body as well as in behaviour as a result of both biological factors and experience (Craig & Baucman, 2002).

Career development is an aspect of human development and plays a pivotal role in the overall education of an individual (Bester, 2004). Career development is defined as the process of developing beliefs, values, skills, aptitudes, interests, personality characteristics and knowledge of the world of work (Zunker, 2006) over the entire lifespan (Watson & McMahon, 2007). According to Germeijs and Verschueren (2007), it is during adolescence that the first career-related decisions are made. This indicates the importance of the adolescent developmental stage within lifespan career development.

For the purposes of this study adolescent development will be conceptualised within the cognitive theory of Jean Piaget (1971, 1977) and the psychosocial theory of Erik Erikson (1963, 1993). In addition, Donald Super’s (1957, 1990; Super, Savickas, & Super, 1996) life-span, life-space theory and Linda Gottfredson’s (1981, 2002, 2005) theory of circumscription and compromise will be used as these theories provide boundaries within which one can understand and hypothesize about the career behaviour and career choice of adolescents (Watson & Stead, 2006a).
Adolescent Development Theory

Human development is generally seen as individualised and continuous (Meyer, 1998). Nevertheless, it is divided into developmental stages for the purposes of understanding and theorising (Meyer, 1998). Descriptions of these stages vary in the literature but generally include: prenatal development and childbirth (conception to birth); infancy and toddlerhood (birth to three years); early childhood (three to six years); middle childhood (six to 11 years); and adolescence (11 to 21 years) (Craig & Baucum, 2002; Papalia, Olds & Feldman, 2006).

The career development literature indicates a somewhat different age range. For example, Hartung et al. (2005) define childhood as falling between the ages of three to 14 years, whilst Tracey (2001) defines individuals that fall under the age of 14 years as children. Fiebig (2003) described girls ranging in age from 11 to 14 years as adolescents. Raffaele Mendez and Crawford (2002) operationalise early adolescence as individuals who fall between the ages of 11 to 14 years. Clearly, an age boundary is difficult to determine as an overlap exists between the constructs of childhood and adolescence in the career literature. Despite the ambiguous nature of these constructs, the individuals in this study fall between the ages of fifteen to sixteen years and can be regarded, thus, as adolescents as indicated in both the developmental and the career literature.

According to Sadock and Sadock (2007), adolescence is a period of maturation between childhood and adulthood which is primarily characterised by physiological changes. Rapid growth in height and weight, changes in body size and form, and the attainment of sexual maturity typify the biological changes that indicate the end of childhood for the adolescent (Papalia & Olds, 1992). Social and emotional changes also occur during adolescence (Papalia & Olds, 1992). Adolescents need to overcome the challenge of gaining autonomy from their parents and developing their own identities (Craig & Baucum, 2002). This involves balancing the desire to try out many possible selves and the need to select a real self (Kail &
Cavanaugh, 2000). Enhanced cognitive abilities such as awareness, imagination, judgement and insight are the result of increased hypothetical reasoning and the use of metacognition (Craig & Baucum, 2002). The above mentioned psychosocial and cognitive changes warrant further investigation as it is well known that the first concrete career-related decisions are made during this developmental stage (Germeijjs & Verschueren, 2007).

A theory of development is likened to a lens through which individuals and their growth are viewed (Thomas, 2005). Hence, a single developmental theory may only explain limited aspects of adolescent development (Muir & Slater, 2003). For this reason, two complementary development theories, namely Piaget’s (1952) cognitive-development theory and Erikson’s (1963, 1993) psychosocial theory will be utilised in order to conceptualise this study within the broader framework of adolescent development. Piaget approaches adolescent development from a cognitive perspective, while Erikson focuses on the psychosocial development of adolescents.

Jean Piaget

The cognitive-developmental theory of Jean Piaget (1952) concerns the qualitative changes that occur in the mental development of individuals from birth to adulthood. Emphasis is placed on the manner in which reasoning, thinking and problem-solving develop (Craig & Baucum, 2002). Factors that influence changes in thinking include biological maturation, activity, social experiences and equilibration (Maree, 2004). In order for individuals to adapt to the outside world there is an ongoing organisation and reorganisation of experiences and information (Donald, Lazarus & Lolwana, 2002). Thus, the mind does not merely respond to stimuli and consequences but rather changes and adapts to the external world (Craig & Baucum, 2002). Individuals are seen as actively involved in a constant process of development (Flavell, 1963). The cognitive-development theory explains
development in an ordered sequence of qualitatively separate stages that increase in difficulty over time (Thomas, 2005). These stages are described below.

**Piaget’s developmental stages**

Cognitive development is separated into four stages and progression through the stages takes place in a fixed sequence. Piaget explicitly stated that individuals pass through stages at different rates. His primary concern was, nonetheless, to explain the universal aspects of cognitive development rather than individual differences. The process of thinking at each progressive stage is qualitatively different from the previous stage as each stage reflects an increasingly complex way of thinking. Also, the activities of the earlier stages become incorporated into the subsequent new stage (Cockcroft, 2002). Piaget called these stages the sensorimotor stage (birth to two years), the pre-operational stage (two to seven years), the concrete operational stage (seven to 11 years), and the formal operational stage (12 years to adulthood) (Meyer & van Ede, 1998). For the purposes of this study, the formal operational stage is significant.

Cognitive development moves from the most basic reflexive actions such as sucking and grasping to activities such as abstract thinking which is achieved during the formal operational stage (Cockcroft, 2002). Pre-school children begin to use symbols, such as language, as a means of expression and by the time children start formal school they are able to perform reversible mental actions and to make logical inferences on a concrete level (Maree, 2004).

The formal operational stage is the most sophisticated stage of cognitive development (Craig & Baucum, 2002). Unlike the former concrete operational stage where younger children are at ease with concrete, empirical facts, adolescents have the capacity to think abstractly about potentialities and to compare reality with things that may or may not be (Maree, 2004). Improved abstract thinking and the use of metacognitive skills (i.e., the ability
to think about one’s own mental processes) characterises cognitive progression at this stage (Cockcroft, 2002). Individuals have the ability to develop, test and appraise hypotheses (Lee & Freire, 2003) which involves the ability to manipulate known facts and events contrary to the fact (Cockcroft, 2002). Adolescents are able to engage in future planning and are able to integrate knowledge from the past and present (Craig & Baucum, 2002) as thinking becomes more systematic (Cockcroft, 2002).

Formal operational thought is characterised by hypothetico-deductive reasoning (Bee & Boyd, 2002). This kind of reasoning is referred to as a second-order process which involves thinking about one’s own thoughts, searching for connections between relationships, and vacillating between reality and possibility (Papalia et al., 2006). The three primary characteristics of hypothetico-deductive reasoning are: (1) the ability to combine all variables and come to a solution regarding a problem; (2) the ability to think about the effect one variable may have on another; and (3) the ability to combine and separate variables in a logical manner (Piaget, 1952).

Piaget proposed, along with other developmental psychologists, that not all people are capable of formal operations, such that this stage could possibly be considered an extension of concrete operations (Cockcroft, 2002). Additionally, it seems possible that once formal operational thinking has been attained, individuals may not maintain this thinking consistently, for example, when faced with unfamiliar problems in unfamiliar situations (Cockcroft, 2002). A post-formal operations stage has also been proposed in which thinking is much richer and more intricate than is suggested by the abstract manipulations of formal operations (Labouvie-Vief, 1985). In addition to understanding the cognitive development of the adolescent, further insight into adolescent development can be gained by exploring Erikson’s theory of psychosocial development.
**Erik Erikson**

Erik Erikson (1963, 1993) takes an epigenetic approach to studying human development which, in essence, means everything that grows has a predetermined schedule (Hook, 2002). Erikson proposes that each part of a developing individual will have a special time of dominance (Hook, 2002). Erikson suggests eight stages of psychosocial development (Craig & Baucum, 2002) and each stage consists of a distinctive developmental task (or crisis) which confronts the individual and should be resolved in that specific stage (Santrock, 2006). Erikson proposed that personality develops as a result of the way in which each conflict is resolved (Hook, 2002). The more successfully an individual resolves the crises, the healthier development will be (Santrock, 2006). It is the acquisition of identity, described as the basic sense of who one is in terms of self-concept and self-image, which is the optimal goal of psychosocial development (Sigelman & Rider, 2003).

**Erikson’s psychosocial stages**

For Erikson, growth takes place in a systematic and consecutive manner from one developmental stage to the next, until each part of the individual has developed (Maree, 2004). It is believed that developmental crises arise from the interaction between genetic development and social influences (Meyer & Viljoen, 2003). Furthermore, although conflicts are specific to particular stages they can resurface throughout an individual’s life span (Maree, 2004). The result of this maturational timetable is an extensive and integrative set of life skills and abilities that function together within the autonomous individual (Hook, 2002).

The eight psychosocial stages proposed by Erikson are: trust versus mistrust (birth to one year); autonomy versus shame and doubt (one to three years); initiative versus guilt (three to six years); industry versus inferiority (six to 12 years); identity versus role confusion (12 to 18 years or older); intimacy versus isolation (18 or older to 40 years); generativity
versus stagnation (40 to 65 years); and integrity versus despair (65 years and older) (Hook, 2002). Applicable to this study is the fifth stage of identity versus role confusion.

During infancy, mothers create a sense of trust in their children through sensitive care of the baby’s needs (Meyer & Viljoen, 2003). With a basic sense of trust in themselves and the world, infants start to realise they can determine their own behaviour, and this ability is the basis of growing a sense of autonomy (Erikson, 1963, 1980). Having gained a basic sense of autonomy children begin to act on their own initiative due to an enhanced ability to move and make noises (Meyer & Viljoen, 2003). Subsequently, children begin to learn a number of skills and abilities as they start attending school, defined as industriousness. These stages prepare the individual to move into adolescence or, as termed by Erikson, the stage of identity versus role confusion.

The physical changes of puberty, the beginning of sexual maturity and the social expectations that adolescents have to make a career choice, all compel the adolescent to re-examine earlier assurances (Meyer & Viljoen, 2003). Erikson calls congruence between the adolescent’s self-image and the role expectations of society the search for identity (Meyer & Viljoen, 2003). The concept of identity indicates a sense of being at one with oneself as an individual grows and develops, as well as an affinity between the individual and his or her social roles and communities (Erikson, 1963). It is important for individuals in this stage to sort out and integrate roles such as friend, older sibling and athlete into a single, consistent identity (Craig & Baucum, 2002). This integration allows for a basic similarity of attitudes and values, which is often a difficult task (Hook, 2002). A key challenge is in the way that previously learned abilities (learned in the industry versus inferiority stage) may be cultivated within the occupational prototypes of the day (Erikson, 1963). Erikson has stated that at this stage adolescents need to ask themselves “how can my previously acquired roles and skills fit into the career world and my projected future?” (Erikson, 1963, p. 261). Mastery of this stage
equips the adolescent to enter the adult world, while failure to master this stage results in role confusion (Hook, 2002). Erikson argues that the inability to accomplish social and occupational identity will cause the adolescent confusion regarding his or her pending role as an adult (Craig & Baucum, 2002).

**Summary**

Piaget’s and Erikson’s developmental theories take differing theoretical perspectives regarding adolescent development. Piaget views development from a cognitive perspective whilst Erikson takes a social perspective. It is during Piaget’s formal operational stage that individuals develop the ability to think abstractly. On the other hand, during Erikon’s identity versus role confusion stage adolescents establish an identity. Adolescents have the ability to think abstractly, apply logic, engage in problem solving skills as well as think hypothetically, all of which contribute to the adolescent’s quest to establish an identity within their social realm. The ability to think maturely provides a necessary platform for adolescents to select career paths which conform to their self-esteem and societal boundaries, thereby contributing to the career development of adolescents.

Piaget and Erikson provide a broad developmental foundation on which to build a theoretical understanding of the participants in this study. Nonetheless, it is necessary to note that these theorists do not provide a specific explanation of adolescent career development. Having considered the nature and succession of the cognitive and psychosocial development relevant to the adolescents in this study, the focus on human development is now narrowed specifically to that of career development as it pertains to adolescents.

**Career Development Theory**

Zunker (2006) describes career development as the process whereby an individual develops beliefs, values, skills, aptitudes, interests, personality characteristics and knowledge of the world of work. Career development concerns the growing and changing ways in which
an individual addresses career issues over the entire life span (Sharf, 2006, 2010). Career theories offer structure within which an understanding and conceptualisation of career choice and behaviour can occur (Watson & Stead, 2006a). Additionally, such theory allows for the prediction of both career behaviour and the factors that might impact on future career choice (Watson & Stead, 2006a). Factors such as individual ability, personality, education, socioeconomic and ethnic background, advice given by significant others, life experiences, and societal values are all known to affect career choice (Papalia et al., 2006).

Adolescence is most commonly the developmental phase in which an educational commitment to career choice is made such that many career development theorists have focussed their attention on this life stage (Sharf, 2006, 2010). Adolescents typically have two important decisions to make regarding their future careers. They have to make decisions about their subject choices in secondary education and about their future studies in higher education (Germeijjs & Verschueren, 2007). Further, career commitment is strengthened during adolescence (Holland, 1985). The increased ability to think abstractly also facilitates adolescents’ career planning and they can more accurately picture themselves working in occupations than they could a few years earlier (Sharf, 2010). Due to the significant influence the above mentioned aspects have on future career success, career interventions are commonly implemented during this developmental period. However, it is important to note that specialised career programmes are urged to begin earlier in school and continue throughout the high school period (Rojewski, 2007).

The development, expression, and achievement of educational and occupational aspirations and perceptions have been described by a number of theories, two of the most important being Super’s (1994; Super et al., 1996) life-span, life-space theory and Gottfredson’s (1981, 2002, 2005) theory of circumscription, compromise and self-creation. These two theories will be utilised in the present study in order to provide a clearer
understanding of adolescent career development. Super’s (1994; Super et al., 1996) life-span, life-space theory provides a basis within which the career development of 15 and 16 year old adolescents can be conceptualised. Gottfredson’s (1981, 2002) theory of circumscription, compromise and self-creation illustrates how occupational aspirations develop over time, which is the focus of the present study. Grounding the present research within an understanding of these two career development theories is critical for the aims of the study to be reached.

Before describing these two theories, there is a need to clarify some of the terminology used, specifically the use of the terms ‘career’ and ‘occupation’ since the literature often uses these words interchangeably. The term ‘career’ will be utilised to refer to a variety of developmental tasks and roles that broadly encompass the career path towards adulthood. The term ‘occupation’ will be utilised to indicate the names of specific job titles or to describe aspirations towards such jobs.

**Donald Super**

Super (1990) defines a career as the series of foremost positions occupied by individuals throughout their pre-occupational, occupational and post-occupational life. Inherent in the above definition is the premise that career development unfolds across the life span from birth to death (Schultheiss, 2008) which is “Super’s single most important idea” (Super et al., 1996, p. 122). Super, like Piaget and Erikson, suggests a stage model of development. However, unlike these theorists the focus is on career development (Patton & McMahon, 2006). Super’s developmental view of this process thus reflects general human development principles (Watson & Stead, 2006b). Career development for Super is the ongoing process of improving the compatibility or fit between the self and environmental factors (Langley, 1999, Sharf, 2010). Super (1990) believes that until individuals know who
they are, they won’t know what they can become. From this dictum it is clear that self
knowledge or, as otherwise stated, the self-concept is a central aspect in Super’s theory.

**Life-span, life-space theory**

The self-concept is a central aspect in Super’s theory, which he defines as the
culmination of an interaction between individuals and their environments (Reardon, Lenz,
Sampson & Peterson, 2000). Occupational aspirations are in part determined by an
individual’s self-concept, which means that individuals will endeavour to apply their self-
concept through the occupation aspired to (Super, 1990).

Super’s theory is constructed on 14 propositions which have, over the years, undergone
several revisions (Watson & Stead, 2006b). Three propositions centre on the way in which an
individual’s different abilities, values and personalities match the abilities and personality
types required for different careers (Super et al., 1996). The other propositions focus on the
self-concept which is characterised by an individual’s interests and abilities (Reardon et al.,
2000). Super believes that the vocational self-concept is continuously changing due to its
interaction with the environment but that it stabilises over the life span (Savickas, 2002a).
Additionally, Super defines what he terms career maturity as a state of readiness to be
reached in terms of self-concept development so that successful educational and career
choices can be made, particularly in adolescence (Watson & Stead, 2006b). Finally, several
propositions centre on life and work satisfaction and the factors that aid this satisfaction
(Super et al., 1996).

Super’s life-span, life-space theory has been represented as a Life Career Rainbow
(Super 1984; Super, et al., 1996), as is shown below.
This graphic representation illustrates two central dimensions: a life stage developmental progression that is age related and six internal arcs that signify possible life roles (Watson & Stead, 2006b). Super et al. (1996) state that people live in the junction between these two dimensions.

**Stages of career development**

Super (1994) proposes career development as a lifelong process that extends across the entire life span progressing through five chronological career development stages. Each stage is characterised by a variety of vocational tasks and behaviours that an individual is expected to accomplish (Langley, 1999). These stages include: growth or the childhood stage (birth to
approximately 14 years), exploration or the adolescent stage (14 to approximately 25 years),
establishment or the young adult stage (25 to approximately 45 years), maintenance or the
mid-adult stage (45 to approximately 65 years) and disengagement or the stage of old age (65
years to death). The participants in this study fall into Super’s exploration stage.

Super’s first stage of career development is termed the growth stage. The
developmental tasks individuals should accomplish during this phase include being future
orientated, having personal control over one’s life, possessing motivation to achieve in
school and work and, lastly, displaying competent work attitudes and habits. Individuals then
move into the exploration stage which will be discussed in detail further on. The third life
stage, termed establishment, begins at 25 years of age and involves stabilising, consolidating
and advancing in the career position that the individual has chosen. This brings the individual
to the maintenance stage at 45 years of age. At this stage it is likely that the individual is
engaging in career tasks that Super describes as holding on, keeping up and innovating. The
final stage, from 65 years onwards, is termed disengagement where the individual ultimately
is planning for retirement. (Watson & Stead, 2006b)

The exploration stage occurs between the ages of four and 25 years. The major
developmental tasks facing the adolescent in this stage are to crystallise occupational
preferences, specify an occupation and finally to implement a career choice (Watson &
Stead, 2006b). Super (1980) proposed the concept of identity as a prominent influence on an
adolescent’s career choice, such that crystallisation requires adolescents to explore broadly in
order to develop initial ideas about where they fit into society (Savickas, 2002a). This
exploration is said to develop an individual’s sense of self which includes discovering
attitudes, beliefs and competencies needed to crystallise an occupational self-concept
(Savickas, 2002a). Adolescents use their developing self-concept as an initial resource about
careers (Kail & Cavanaugh, 2000). To reach crystallisation, adolescents need to fit
themselves into society in a way that unifies their inner and outer worlds (Savickas, 2002a). The search for an occupational self-concept can be enhanced by educational and leisure experiences, psychometric testing, as well as through training and job seeking (Osipow & Fitzgerald, 1996). It is suggested that as self-clarity is increased, so is the adolescent’s clarity about the world (Savickas, 2002a).

Individuals subsequently engage in the second developmental task of the career exploration stage where they need to specify an occupational choice. Specification requires that adolescents sift through initial preferences in preparation for declaring an occupational choice. At this stage, role playing becomes more purposive and reality testing becomes more systematic than during crystallisation. The consequence of this fine-tuned exploration results in career specification and commitment (Savickas, 2002a).

The final task of this stage has been termed ‘school-to-work transition’ by Blustein, Juntunen and Worthington (2000) as it involves actions that move the adolescent to increasingly more suitable and congruent occupational positions (Super, Kowalski & Gotkin, 1967). This period usually requires the adolescent to try on the specified occupation for fit and then to move to other positions so as to zero in on a suitable occupation (Savickas, 2002a). The individual moves on to the maintenance stage when advancing in new career directions is no longer the goal (Savickas, 2002a).

**Career construction theory**

Super’s theory of career development has been updated by Mark Savickas’s (2005) career construction theory. The focus of career construction theory is on individuals reflecting on their career behaviour both objectively (i.e., actual events) and subjectively (i.e., the meaning of such events) (Watson & Stead, 2006b). Savickas (2005) believes that careers are constructed within a social context and that career development can be viewed in terms of an individual’s continuous social adaptation to changing circumstances. By introducing the
concept of life themes, Savickas has reinforced Super’s concept that individuals implement their self-concepts in making occupational choices (Savickas, 2005). Super’s 14 propositions have been reformulated by Savickas who added an additional two propositions which signify the importance of both the construct of career adaptability and the ongoing nature of career construction (Watson & Stead, 2006b). Savickas replaces the term career maturity with the term career adaptability which highlights his belief that “careers do not unfold; they are constructed” (Savickas, 2002a, p. 154). Savickas (2002b, 2005) refines some of the developmental tasks proposed by Super. According to Savickas (2002a, 2005), the main goal of career construction is to have the self-concept validated by the occupational role chosen.

**Evaluation of Super’s theory**

Although Super (1990) indicated the role of cultural and contextual factors in the process of career development, there are several aspects of Super’s theory that do not account for cultural variables such as career maturity (Fouad & Arbona, 1994). With regards to Super’s theory, Langley (1999) emphasised the need to consider socioeconomic, socio-political and familial factors which are important influences in the South African context. Also, there is a lack of international research validating certain aspects of Super’s theory, particularly with regards to his propositions and the self-concept (Watson & Stead, 2006b).

It is accepted that these criticisms are largely outweighed by positive evaluations of Super’s theory (Watson & Stead, 2006b). Super’s theory is seen as having great possibility for practice and research because of its well-ordered and systematic formulation of career development (Osipow & Fitzgerald, 1996) and it is supported by five decades of research (Swanson & Fouad, 1999). It is further suggested that researchers “follow his lead in thinking about ways to adapt the knowledge base to changing realities” (Blustein, 1997, p. 260). Super’s theory is recognised as providing an all-inclusive description of career development and its usefulness as well as versatility is evident in its reconstruction as career construction.
theory. Further, Super’s theory allows for a broad platform on which to base an understanding of adolescent career development.

Linda Gottfredson

Gottfredson’s (1981, 2002, 2005) theory of circumscription and compromise takes a sociological view of career development. It describes the cognitive decision-making process within the context of career development (Blanchard & Lichtenberg, 2003) and specifically explains how occupational aspirations develop (Watson & Stead, 2006a). Gottfredson (2005) views occupational aspirations as the outcome of an individual’s assessment of occupational compatibility and accessibility (Rojewski, 2007). Her theory integrates career-related constructs such as the self-concept, developmental stages, the matching of individuals to work settings, and the development of occupational aspirations (Watson & Stead, 2006a).

Like Super, Gottfredson believes that the self-concept is an important part of career development. However, Gottfredson believes that the self-concept is restricted by socially defined aspects of the self such as an individual’s gender, social class, race and intelligence (Gottfredson, 1981, 2002, 2005). In particular, Gottfredson emphasises gender and social class differences as significant factors in career development (Gottfredson, 2002). Thus, Gottfredson’s theory integrates psychological (e.g., the self-concept) and non-psychological (e.g., social class) factors to provide a more comprehensive explanation of the development of occupational aspirations (Gottfredson, 1981).

Development of the self-concept and cognitive states

Gottfredson proposes four stages which explain both self-concept and cognitive development (Watson & Stead, 2006a). These stages are seen as progressive in nature, in that as a new factor is introduced at each stage it must be incorporated into the development of the self-concept (Watson & Stead). This process of incorporation successively restricts or circumscribes an individual’s options with regards to acceptable work (Gottfredson, 1981).
The four stages additionally map the growth of cognitive development from concrete cognitions in childhood to the more complex, abstract cognitions of adolescence and adulthood (Watson & Stead). Gottfredson’s stages include: orientation to size and power (three to five years), orientation to sex roles (six to eight years), orientation to social valuation (nine to 13 years), and orientation to the internal unique self (14 years and above) (Gottfredson, 2002). Gottfredson’s fourth stage is of particular relevance to this study as it explains the cognitive development of adolescents.

Gottfredson’s initial stage of career development, termed orientation to size and power, describes the progression of occupational aspirations from fantasy-based to more realistically-based aspirations (Watson & Stead, 2006a). During the orientation to sex-roles stage, children from six years of age are believed to develop sex-role stereotypes that impact on their occupational aspirations. It is of note that sex-role stereotyping is proposed to take place only when gender identity is established, which does not occur before a child is five years of age. By nine years of age, during the orientation to social valuation stage, children have an increasing awareness of social and intellectual differences. It is believed that social background will correlate with the expressed occupational aspirations of an individual. Individuals then move into the fourth stage or, as otherwise termed, orientation to the internal unique self phase during adolescence.

While the first three stages are characterised by the exclusion of undesirable occupations, the fourth stage focuses on the choice of a preferred occupation out of the remaining alternatives (Swanson & Gore, 2000). Gottfredson (1981) coined the term cognitive map of occupations which generally refers to how adolescents’ view their world (Sharf, 2006). This term describes the process through which individuals differentiate occupations according to major criteria such as masculinity/femininity, occupational prestige level, and field of work (Sharf, 2010). For adolescents to develop a cognitive map of
occupations and ultimately incorporate it into the self (i.e., the self-concept), they must decide on which occupations are compatible with how they see themselves. According to Super (Super, Thomas & Lindeman, 1988), at the ages of 15 and 16 years some adolescents are able to take their goals and values into account when making a career decision (Sharf, 2010). Adolescents may not know how to weigh their interests, abilities, and values; however they have the necessary building blocks for making choices.

An additionally important term in this stage is social space (Gottfredson 1981). Social space reflects individuals’ perspectives of where they fit or would want to fit into society, with such appropriateness being defined in terms of gender, race, social position, and ability. Thus, an individual’s personal boundaries can be sketched on the map of suitable occupations. Gottfredson (1996, 2002, 2005) refers to the process in which adolescents restrict their social space as circumscription. Furthermore, these occupations must not only be compatible with how individuals see themselves, but they must also be accessible or attainable (Sharf, 2006, 2010). This process is known as compromise (Gottfredson, 1996, 2002, 2005). The following section further describes these two critical processes.

**Circumscription**

Circumscription is the process by which adolescents narrow their occupational alternatives (Sharf, 2010). Gottfredson (1981, 2002, 2005) refers to this narrowing as the zone of acceptable alternatives in which the individual’s self-concept and associated social space are outlined. As children and adolescents move through the age-related stages mentioned earlier, they remove unacceptable alternatives (Swanson & Gore, 2000). This is said to be an irreversible decision-making process (Swanson & Gore, 2000) and is aided by comparing one’s self-concept with images of potential occupations and, thus, ascertaining the degree of compatibility between the two (Gottfredson, 2002, 2005).
Gottfredson (2002) outlines five principles of circumscription. Firstly, as individuals grow up, they develop an enhanced ability to capture and organise complex and abstract information concerning the self and the world. Secondly, the self-concept and occupational aspirations develop parallel to one another and influence each other as a deeper understanding of both is developed. Thirdly, individuals begin to understand and integrate information about themselves and occupations in an overlapping manner. Fourthly, occupational options are progressively eliminated as the individual’s self-concept becomes more complex and defined. Finally, these processes that have been fundamental and gradual are unconscious.

The theory of circumscription proposes that gender will predict occupational selection by the age of six years and that social class and prestige will predict selection from the age of nine years onwards (Gottfredson, 1981, 2002; Sharf, 2006, 2010). Occupations perceived to be inappropriate to one’s gender are initially eliminated, after which occupations viewed as incompatible to the status and prestige of the individual are eliminated (Gottfredson, 1981). Occupations that are believed to be lower than the individual’s ability level are also eliminated (Gottfredson, 2002). Additionally, it is understood that high social class promotes occupations that are perceived as acceptable, whilst high intellectual ability promotes occupational aspirations by raising the bar to what is deemed possible. Similarly, low social status and lower intellectual ability will circumscribe (i.e., limit) acceptable occupational aspirations (Gottfredson, 2002, 2005).

**Compromise**

Whereas circumscription is the process by which individuals eliminate alternatives they judge unacceptable, compromise is the process by which individuals discard their most favoured alternatives (Gottfredson, 2002). This process, which is believed to eliminate negative options rather than promote the selection of positive ones, is influenced by the
external world (Watson & Stead, 2006a). Three central factors in the process of compromise are said to be gender, prestige, and interests (Swanson & Gore, 2000).

Gottfredson (1981, 1996) identifies four principles with regard to the process of compromise. Firstly, important features of the self-concept will be prioritised when compromising occupational aspirations. Individuals are likely to compromise their interests first, then prestige and lastly gender when making a career decision. Secondly, a selected occupation will be deemed satisfactory as it has been selected from a series of acceptable occupations. Gottfredson (2002) noted that “individuals settle for a good choice, and not the best possible choice” (p. 106). Hence, an occupational choice might not be the most favourable, but it will be considered a satisfactory one. Thirdly, if the occupational options are not acceptable, individuals will avoid committing to a career choice. Lastly, individuals are able to adjust to and accommodate the compromise they have made. Most accommodation is made with regard to the field of work chosen, less accommodation when it comes to prestige. There is most rigidity with regard to gender identity (Gothard, Mignot, Offer & Ruff, 2001; Gottfredson, 2002, 2005).

**Evaluation of Gottfredson’s theory**

Gottfredson’s theory has been said to have made a major contribution to the broader field of career development theory (Watson & Stead, 2006a). However, her theory has been criticised, with most criticism directed at the limited empirical support for her theory (Watson & Stead). Brown (1996) argues that the concepts of circumscription and compromise lack specificity and thus lend themselves to an inadequate description of the career choice process. Also, it has been said that Gottfredson excludes explanations of exceptions to the rule. For example, why is it that some individuals do not circumscribe nor compromise and are on the “flip side of her propositions” (Brown, 1996, p. 523)? Furthermore, Gottfredson’s theory has been criticised for focussing predominantly on children and adolescents, a criticism she has
responded to by arguing that it was intended as such (Watson & Stead, 2006a). Looking at
the support for Gottfredson’s theory, Watson and McMahon’s (2005) research review on
children’s career development cites several studies that have found support for critical
concepts characteristic of Gottfredson’s theory such as sex-typing, socialisation, and the
inverse relation of fantasy and realism. Gottfredson’s theory is the only career development
theory that provides such a specific and detailed description of how occupational aspirations
develop. Thus, Gottfredson’s theory meets the needs of the current study in that the
occupational aspirations of adolescents are a primary focus of this study. In addition,
Gottfredson’s theory has proved useful in South African career research, particularly in the
earlier phases of the present longitudinal research (Hargreaves, 2007; Hunter, 2009).

Summary

Current career development theories view career development as an ongoing, lifelong
process involving a number of career-related decisions rather than a once-off occupational
choice. Hence, the longitudinal nature of the broader research project of which this study is a
part. The adolescents in the present study fall within a developmental stage where the
culmination of previous career-related decisions is seen through the actual making of a career
choice. Super’s and Gottfredson’s career development theories are used to offer a sound
theoretical base for understanding this choice process. Super’s theory is used to explore the
career developmental tasks of adolescence, whereas Gottfredson’s theory provides for an
understanding of how occupational aspirations develop during this time.

Super’s life-span, life-space theory views career development as the ongoing process of
improving the compatibility between the self-concept and environmental factors, culminating
in career maturity so that successful educational and career choices can be made, particularly
in adolescence. Super conceptualised career development in five stages that occur across the
lifespan. The adolescents in this study fall into Super’s exploration stage, in which the
primary development task is to crystallise, then specify and finally implement a career choice. Savickas has updated Super’s theory and labelled it as career construction theory. Savickas emphasises the importance that Super places on the self-concept and further explains that adolescents construct careers within a social context.

Gottfredson’s theory of circumscription and compromise explains the cognitive career decision-making process of adolescents within a developmental context and focuses specifically on how occupational aspirations develop. Her theory proposes that not only must occupations be compatible with how individuals see themselves but they should also be accessible or attainable. Two processes are important here, namely circumscription and compromise. Circumscription, as explained by four progressive stages, is the process by which individuals eliminate alternative occupations they judge unacceptable, and compromise is the process by which individuals discard their most favoured alternative occupations. Gottfredson’s theory also emphasises the self concept as an important construct in career development. Her fourth stage of cognitive development is of particular relevance to this study. During this fourth stage (14 years and older), which is known as orientation to the internal unique self, individuals become more introspective, developing greater awareness and perceptiveness towards others. Super’s lifespan, life-space theory and Gottfredson’s theory of circumscription and compromise provide a sound theoretical framework within which a clearer understanding of the career development of the adolescents in this study can be achieved.
Conclusion

The aim of this chapter has been to contextualise the present study within the domain of adolescent development and more specifically within the domain of adolescent career development. The development theories of Piaget and Erikson and the career development theories of Super and Gottfredson have been described in order to provide a theoretical base from which the occupational aspirations and perceptions of South African adolescents can be explored. It is important that this study be rooted in extant theories that pertain to adolescent career development given the critical importance of this developmental stage with regards to concrete career choice. In order to place the present study in an empirical research context the existing research in the field of career psychology as it pertains to this study is reviewed in the next chapter.
CHAPTER 3

Research Review

This research review contextualises the present study within the existing body of research on the career development of adolescents. The chapter provides an overview of international and national research on the career development of adolescents. An attempt is made to limit the age range of the research reviewed so as to increase the review’s applicability to the participants in the present study who are between the ages of 15 and 16 years. Thus, where possible, the lower age boundary of the research reviewed is 14 years. This is in keeping with career development literature where 14 years of age is defined as the upper age boundary of childhood (Hartung et al., 2005; Schultheiss, 2008; Tracey, 2001). In addition, 18 years of age is commonly defined as the upper age boundary of adolescence (Papalia et al., 2006). Where possible, an attempt has been made to highlight research pertaining specifically to 15 and 16 year old adolescents; however, not all research reviewed has specified the age cohort of the adolescents sampled.

The research review formats adopted by previous researchers (cf. Hargreaves, 2007; Hunter, 2009) involved in this longitudinal study have been considered as a guide for the present review in integrating and reporting on what Vondracek (2001) describes as research data that appears to be disorganised, inconsistent and lacking cohesion. This review aims specifically to examine research that is relevant to the present study. Thus, the review will be themed according to the specific aims of the present study. The chapter will move from a broad overview of career development research to a more specific review of research on the career development of adolescents. Particular attention will be given to research on adolescents’ occupational aspirations and perceptions in terms of interests, occupational gender stereotypes and occupational status level. Additional factors that have been shown to
influence the occupational aspiration development of adolescents will then be reviewed using a Systems Theory approach (Patton & McMahon, 1999, 2006) as a structural framework.

According to Lerner, Theokas and Jelicic (2005), there is value in embedding the study of adolescent career development within developmental systems theories. The Systems Theory approach is deemed appropriate as it allows for a specific research focus on factors that impact on adolescents’ occupational aspiration development. This systemic framework considers factors that may influence career development on various levels. These levels are depicted as increasing concentric circles. The inner circle represents the individual system which is made up of factors such as aptitude, age, gender, race, beliefs, personality, self-concept, interests and world-of-work information. The contextual system surrounds the individual system and incorporates factors in the social system and the environmental-societal system. The social system consists of influences such as family, peers, media, schools, the work place and community groups, while the environmental-societal system includes influences such as socioeconomic status, politics, employment trends, geographical location and globalisation.

Overview of Adolescent Career Development Research

This section of the chapter focuses more broadly on adolescent career development research. Systemic factors that have been found to influence the career development of adolescents are briefly reviewed, after which the focus of the review is further narrowed to a discussion of career development research pertaining specifically to South African adolescents.

Career development theory has had a relatively short existence, advancing over the years from the original trait-factor theories towards a more developmental point of view (Patton & McMahon, 2006). Despite this shift in theory, Vondracek (2001) argues that career
psychology has yet to reach its potential as a developmental science. Although numerous researchers have concluded that career choice is an outcome of a lifelong process that starts at an early age (McMahon & Watson, 2008), Patton and McMahon (2006) argue that a holistic, systematic approach to career development constructs and processes is still largely absent. Skorikov and Patton (2007) point, in particular, to the numerous limitations regarding existing career theories and research pertaining to the adolescent population. With the exception of Gottfredson’s theory of circumscription and compromise (Gottfredson, 2005), there has been minimal effort in furthering existing theoretical models of adolescent career development or developing new ones (Skorikov & Patton, 2007). Furthermore, adolescent career development is becoming more complex in the contemporary world (Mortimer & Zimmer-Gembeck, 2007). Current adolescent career development is said to extend normative education and the overall transition to adulthood well into the mid-twenties along with an increasing ambiguity in the societal expectations of the young.

There have been calls for adolescent career development research to examine issues of diversity in terms of social class and race (Betz, 2001). The majority of adolescent career development research has focussed on participants from the United States, while neglecting other population groups (Whiston & Brecheisen, 2002). Less attention has been given to minority groups (Wadsworth, Milsom & Cocco, 2004) and thus the application of career theories to minority populations has been viewed as questionable (Russell, 2001). For example, there is extensive research that examines the career development of adolescents living in urban areas as compared to research examining the career development of adolescents living in rural areas (Ali & Saunders, 2009). Ultimately, there has been a lack of focus on contextual and cultural variables in the study of adolescent career development. Further research on the potential reciprocal relationship between career development and education during adolescence is also urgently needed (Skorikov & Patton, 2007). In a review
of career research, Tien (2007) indicated that most research pertaining to career interventions was outcome-orientated rather than process-orientated. Research has placed more focus on career behaviours and has failed to focus on the influences and processes that predict these behaviours. As a result, there is a need for substantial further research in order to progress the understanding of the process of career development in adolescence and its outcomes (Skorikov & Patton, 2007).

With regards to research design, it is commonly accepted that insufficient longitudinal research represents one of the major obstacles for furthering an understanding of career development across the lifespan (Germeijs & Verschueren, 2007; Hartung et al., 2005; Rojewski, 2007; Schultheiss, 2008; Skorikov, 2007). Bryant, Zvonkovic and Reynolds (2006) state that “longitudinal studies are urgently needed that begin in childhood, continue in adolescence, and proceed to adulthood” (p. 171). The understanding of how early stages of career development are linked to adolescent and adult career choices remains considerably limited (Patton & Skorikov, 2007). Therefore, the linking of career development stages so as to gain a more holistic understanding of how antecedents and dimensions in one career development period may impact on other lifespan development periods has been advocated (Hartung et al., 2005). Research that embeds adolescent career development within the fabric of a lifespan developmental framework could move this disjointed field toward an integrated lifespan conceptualisation.

Adolescent career development is generally understood to be a complex interaction of several variables which include personal characteristics, behaviours and environments (Gysbers, 1996). Much of the research to date has indicated mixed results with regards to the various factors that influence adolescent career development. Nonetheless, higher socioeconomic status and parental influences have been found to correlate positively with career development maturational levels (Helwig, 2008). Gender has also been shown to
influence adolescents’ career development, with the more limited career choices of females providing cause for concern (Francis, 2002). Additional confirmation of career development theory can be found in research findings which demonstrate that adolescents tend to focus more on interests, aptitudes, and abilities when describing occupations (Borgen & Young, 1982).

Several authors have pointed out that career psychology in South Africa is still in its formative stages and thus the South African knowledge base on career development behaviour still requires extensive development (Hargreaves, 2007). This is particularly the case when one considers children and adolescents. MacLeod (2004) noted that only 14.8% of articles in the South African Journal of Psychology between 1999 and 2003 have focussed on children or adolescents as participants. In addition, De Bruin and Nel (1996) state that a large amount of career research has been concentrated on white high school students, in spite of the multicultural context of South Africa being considered an important factor in understanding career development (Stead & Watson, 1998, 2006a). This highlights the importance of increasing South African research on career development across the lifespan. Where possible, these studies should be longitudinal in nature since researchers such as Savickas (2002b) have suggested that increased longitudinal research will reinvigorate the study of careers. South African career research has focussed predominantly on diagnostic aspects of career counselling, with less emphasis placed on personality, career maturity, as well as socioeconomic and cultural factors (Stead, 1996). The current longitudinal study has indicated that adolescents’ knowledge of occupations is relatively comprehensive and detailed. This supports the notion proposed by career development theory that individuals become more realistic in their occupational choices as they mature in age (Cox, 2004; Crause, 2006; Hargreaves, 2007; Hunter, 2009).


**Summary**

Despite evidence suggesting that career development is a lifespan process, there remain numerous limitations regarding existing career theories and research pertaining to adolescence. Career development research within South Africa is still in its formative stages and there is a need for career development research across the lifespan. Furthermore, adolescent career development theory and research needs to consider the complexities that face adolescents in the contemporary work world in order to be considered valid. In South Africa adolescent career research is limited due to the elevation of certain issues and populations above others. Additionally, there have been calls for increased research into diversity and context specific variables that may influence adolescent career development. As a means to reinvigorate the study of adolescent career development, there have also been calls for more research which is longitudinal in nature. While research findings to date are fragmented, nevertheless adolescent career development is generally understood to be a complex interaction of personal, behavioural and environmental variables. The research review focus is now narrowed on adolescent career development and, in particular, the development of occupational aspirations, which is the focus of the present research.

**Overview of Adolescent Occupational Aspiration Research**

The present study aims to expand the longitudinal research conducted by Cox (2004), Crause (2006), Dean (2001), Hargreaves (2007), Hunter (2009) and Olivier (2004). In light of the call for more longitudinal research in the field of career psychology, Dean (1998) explored the occupational aspirations and perceptions of pre-school children. These findings have been presented both nationally and internationally (Watson, Foxcroft & Dean, 1999) and have stimulated ongoing research. Dean (2001) examined the current sample at the ages of five to eight years, Cox (2004) from ages six to nine years, Olivier (2004) from ages eight
to 10 years, Crause (2006) from ages nine to 12 years, Hargreaves (2007) from ages nine to 13 years and Hunter (2009) from ages 12 to 14 years.

Occupational aspirations play a crucial role in the career development of adolescents. This can be seen in both the integral position occupational aspirations have in most career theories and in the extensive body of research conducted on occupational aspirations over the past fifty years (Rojewski, 2005). Several researchers agree that adolescents’ occupational aspirations are among the most significant predictors of eventual occupational attainment. Occupational aspirations have been shown as equal to or better than interest inventories in determining eventual occupational membership (Schoon & Parsons, 2002). It has been found that the more consistent and coherent occupational aspirations are over time, the better their predictive power (Rojewski, 2007). Occupational aspirations have also been established as providing for an accurate reflection of an adolescent’s future career self-concept as well as social mobility (Rojewski, 1995). Occupational aspirations have further been considered as important career motivational variables which are predictive of future career success levels (Chung, Loeb & Gonzoland, 1996). Due to the significant amount of research already supporting the correlation between adolescents’ occupational aspirations and future career attainment, recent research has turned toward determining the relative value and importance of the various factors theorised to influence those specific occupational aspirations (Mau & Bikos, 2000).

Career researchers have focussed on a variety of influences on adolescents’ occupational aspirations such as: socioeconomic status (Helwig, 2008; Marjoribanks, 2002); gender differences (Ji, Lapan & Tate, 2004; Rojewski, 2007; Rojewski & Yang, 1997); occupational preferences (Gottfredson, 1996, 2002); family background and parental influences (Flouri & Hawkes, 2008; Glasgow, Dornbusch, Troyer, Steinberg & Ritter, 1997; Ozdemir & Hacifazlioglu, 2008; Rashmi, Kauppi, Lewko & Urajnik, 2002); race and
ethnicity influences (Hellenga, Amber & Rhodes, 2002; Okubo, Yeh, Lin & Fujita, 2007; Wilson & Wilson, 1992); personal and psychological influences (Ali & Saunders, 2009); occupational gender role stereotypes (Davey & Stoppard, 1993; Patton & Creed, 2007); and occupational expectations (Constantine, Kindaichi & Miville, 2007).

Although the research on adolescents’ occupational aspirations has been extensive, most studies have drawbacks which mirror some of the criticisms mentioned earlier in this chapter regarding adolescent career development as a whole. Even though significant progress has been made in examining the variables that impact on adolescent occupational aspirations, Wahl and Blackhurst (2000) conclude that there is a need for future research relating to the development of occupational aspirations. This highlights the increased need for longitudinally based research on adolescent occupational aspirations (Rojewski, 2007).

Occupational aspirations have been conceptualised within career development theories as a significant career developmental task for adolescents in seeking occupations compatible with their self-concepts. Therefore, as adolescents develop they should consider their interests, abilities, and values in forming their occupational aspirations (Super, 1990; Super et al., 1996). Super (1990) further contended that adolescents adjust their occupational aspirations from fantasy-based aspirations to more realistic expectations as they become increasingly aware of personal and contextual barriers that restrict the attainment of their initial occupational aspirations. Gottfredson (2002) proposed a similar process occurring in the final developmental stage of orientation to the internal unique self (age 14 onwards). She described two important processes regarding the development of occupational aspirations, namely, circumscription and compromise. During the process of circumscription, adolescents limit their occupational aspirations to a range of acceptable alternatives, and it is within this range that adolescents will compromise their occupational aspirations, exchanging ideal for more realistic occupational aspirations.
The aim of several studies has been to confirm these lifespan career theories. However, mixed findings have resulted. The findings of Helwig (2004) as well as Wahl and Blackhurst (2000) on the whole provide support for Gottfredson’s (1981, 2002, 2005) theory of circumscription and compromise. In addition, research has supported Gottfredson’s notion of occupational sex typing (Tracey, 2001), the effect of social valuation on occupational aspirations (Helwig, 2001), and Gottfredson’s viewpoint that occupational aspirations usually become more realistic and less fantasy-based over time (Hartung et al., 2005; Helwig, 2001).

The propositions of Gottfredson’s (1981, 2002, 2005) fourth developmental stage of orientation to the internal unique self are also supported by research results. For instance, occupational aspirations seem to become progressively more consistent with values, interests and abilities and, as adolescents mature, they appear to become increasingly aware of environmental obstacles and the availability of opportunities in the pursuit of an occupation (Hartung et al., 2005).

As a consequence of validation studies by Taylor and Pryor in the 1980s and others, such as Holt (1989) and Leung (1993), Gottfredson (1996) modified her first principle of the theory of compromise. This now states that the relative importance of sex-type, prestige, and interests depends on the degree of compromise with which an individual is faced (Blanchard & Litchenberg, 2003). If the degree of compromise is low then interests will be most protected, followed by prestige, and then sex-type (Gottfredson, 1996). If there is a moderate level of compromise, prestige becomes least flexible, followed by interests then sex-type. Lastly, if the individual is faced with major compromise, then sex-type will be the most important aspect to preserve, followed by prestige and then interests. Nevertheless, sex-type, prestige and interest are important variables to consider in the development of the occupational aspirations of adolescents.
A considerable amount of research has focussed on Holland’s (1985) RIASEC (i.e., Realistic, Investigative, Artistic, Social, Enterprising and Conventional) occupational interest typology, with findings suggesting that occupational interests change over time (Hartung et al., 2005), but more often than not become increasingly stable from adolescence onwards (Rojewski, 2007). Research indicates that adolescents generally aspire to a small range of RIASEC occupational categories (Patton & Creed, 2007). Female adolescents have been found to aspire to high and low occupational status levels, whereas male adolescents have generally been found to aspire to moderate-status occupations (Rojewski, 2007; Rojewski & Yang, 1997). Furthermore, it seems adolescents who are confident in their academic ability express higher status occupational aspirations as compared to those who are not (Furlong & Biggart, 1999).

Some researchers have argued that occupational aspirations should be seen as distinct from occupational expectations, as occupational expectations are viewed as more realistic than occupational aspirations. In other words, it is argued that occupational expectations take potential barriers (e.g., socio-economic status) into consideration, whereas occupational aspirations refer to adolescents’ occupational dreams (Diemer & Hsieh, 2008). Research taking this perspective has found that female adolescents have less gender-traditional occupational aspirations as compared to their actual expectations (Davey & Stoppard, 1993). This discrepancy is also evident in the status level of occupations aspired to. It should be noted here that the current study does not make a distinction between occupational aspirations and expectations. As mentioned previously, research has shown that adolescents become increasingly aware of personal and contextual barriers that restrict the attainment of their initial occupational aspirations.

On a national research level longitudinal research regarding occupational aspiration development has been non-existent. The current longitudinal project is the first of its kind to
explore South African children’s and adolescent’s occupational aspiration development. Current findings indicate that South African children may aspire to an occupation based on the popularity or prestige associated with it, with more popular occupations showing greater stability across age groups (Cox, 2004; Crause, 2006; Dean, 2001; Hargreaves, 2007; Hunter, 2009; Olivier, 2004). Also, this longitudinal study suggests that as children and adolescents become older they circumscribe their occupational aspirations, using gender role and social valuation as a means of limiting their aspirations. The present study expands on this longitudinal research by exploring the stability and variability of the occupational aspirations and perceptions of a sample of South African adolescents over a period of two years. Where relevant, more specific findings of the present longitudinal project will be reported in the systemic review that follows.

**Systemic Review of Adolescent Occupational Aspiration Research**

Career development is seen as a process of dynamic interaction between individuals and their environments (Skorikov & Patton, 2007). Adolescents’ career related attitudes and behaviour go through various changes as a result of the environmental unfolding of capabilities and learning through self-chosen and socially allocated occupational and other activities. Factors influencing adolescent occupational aspirations include psychological factors and sociological or environmental influences (Rojewski, 2007). The Systems Theory Framework of career development (Patton & McMahon, 1999, 2006) is argued to serve as a useful means of integrating and structuring research conducted on the development of adolescent occupational aspirations as it takes the dynamic interaction between individuals and their environments into account. The following subsection will review research on three interrelated systems of influence, namely the individual system, social system, and environmental-societal system.
Individual factors

The Systems Theory Framework of career development identifies the individual system as being comprised of a variety of intrapersonal influences which includes age, gender, health, self-concept, beliefs, personality, values, abilities, skills and race (Patton & McMahon, 1999, 2006). Reviewing research on interpersonal influences is relevant as the career literature has progressively focused on individuals as being central to their career development process and as being personal agents in their career-related choices. Research has repeatedly demonstrated that certain individual characteristics influence the development of occupational aspirations. These include individual preferences, aptitudes, values, self-concept and feelings of competence (Super et al., 1996). This subsection of the chapter explores research on individual factors that have been shown to influence the occupational aspiration development of adolescents. Only variables relevant to the individual system of the Systems Theory Framework are described in this section in keeping with the aims of the present study. Thus, there is a particular focus on self-concept, self-efficacy, age, gender, race, and culture.

Self-concept and self-efficacy

The self-concept refers to an adolescent’s sense of self (Craig & Baucman, 2002). It is an awareness of the need to make a career decision that focuses the adolescent on self-definition (Papalia et al., 2006), such that the identity construct plays an integral role in adolescent career development. According to Super (1990), the self-concept plays an important role in determining both occupational aspirations and eventual career attainment, in that occupational aspirations and career choice are a direct result of successive approximations at implementing one’s self-concept (Rojewski, 2007). As adolescents develop in terms of their career maturity they start to consider their interests, abilities and values in forming their occupational aspirations (Super, 1990). A research study of particular
relevance, in this regard, which was conducted by Francis (2002) on 14 to 16 year old female adolescents indicated that the occupational aspirations of these adolescents did indeed reflect their identities. Academic self-concept has been shown, in particular, to significantly relate to adolescents’ occupational aspirations (Watson, Quatman & Edler, 2002). Generally, a higher academic self-concept indicates higher occupational aspirations in terms of occupational status and vise versa. In a particularly significant longitudinal study conducted by Rojewski and Yang (1997), adolescents with higher status occupational aspirations, compared to adolescents with lower status occupational aspirations, were found more likely to have an internal rather than an external locus of control.

Self-efficacy refers to the belief adolescents have that they are able to perform successfully at a task specific level or more generally across different situations (Yeo & Neal, 2006). Self-efficacy is seen as an essential component in career decision-making as it facilitates adolescents’ motivation to initiate specific behaviours, their persistence in the face of obstacles or barriers, and their level of competence in executing behaviours (Arbona, 2000). Studies have indicated that both male and female adolescents express greater self-efficacy for occupations that employ more persons of their own gender (Ji et al., 2004). Furthermore, research has demonstrated that investigative self-efficacy (i.e., an individual’s self-confidence in their ability to achieve in occupations that fall within Holland’s Investigative category) is predictive of adolescents aspiring to occupations in the environmental sciences (Quimby, Wolfson & Seyala, 2007).

Helwig (2001) found that beginning in the 10th grade and increasing in the 12th, less adolescents named their occupational aspiration from occupations in the professional, technical and managerial category (i.e., occupations with higher status). More students chose occupational aspirations in sales, service, processing and other lines of work (i.e., occupations with lower status). Helwig explains that with increasing developmental maturity
comes an increased self-awareness and knowledge of academic and occupational strengths and weaknesses. This then influences self-efficacy and the confidence for particular academic and occupational possibilities. In other words, adolescents choose occupations they feel confident and competent about.

Schoon (2001) conducted a follow up study which examined adolescent occupational aspirations and occupational attainment in adulthood. Schoon stated that belief in own scientific ability at 16 years of age is a significant predictor for occupational attainment in the health professions, engineering and medical sciences. This finding indicates, according to Schoon, the vital role that self-knowledge plays in occupational development as already suggested by earlier career theorists and researchers (Gottfredson, 2005; Super, Starishevsky, Matlin & Jordaan, 1963).

Some research, although limited, has indicated that high self-efficacy can be a negative factor regarding the achievement of occupational aspirations. Vancouver and Kendall (2006) found that adolescents with high self-efficacy tend to allocate fewer resources than is required to the task, as they inaccurately perceive the gap between their own performance and desired performance to be less than it actually is. This decreases eventual occupational aspiration attainment.

It seems an adolescent’s environment and living standards are related to identity formation and career development as the environment provides support that is necessary to promote the career and self-exploration of the adolescent which is, in turn, crucial to the process of identity formation (Chiang & Yang, 2008). Environment and living standards can be viewed as social and environmental factors according to the Systems Theory Framework and will, for this reason, be discussed in greater detail in the corresponding subsections of this chapter. It should be noted here that the Systems Theory Framework allows for
recursiveness in that there can be a cyclical inter-influence between systems (Patton & McMahon, 1999, 2006).

Nationally research regarding the influence of the self-concept and self-efficacy on adolescent occupational aspiration development has been minimal. Eaton, Watson, Foxcroft and Patton (2004) studied the career decision-making self-efficacy of white South African adolescent boys and girls in Grades 9 to 11. Eaton et al. (2004) found that career decision-making self-efficacy is not influenced by gender and suggested that career interventions for learners need not be separate for each gender, to save time and money. The impact of the self-concept as a variable on occupational aspirations and perceptions has been researched throughout the current longitudinal study. The children (12 to 14 years old) in Hunter’s (2009) study most commonly identified personal interests as the reason for aspiring to the occupations that they had over the past ten years. This seems to be a confirmation of Super’s (1996) propositions that adolescents in the Exploration stage begin to rely on their self-knowledge when making career decisions.

The research reviewed in this subsection illustrates the role of the self-concept in the shaping of adolescents’ occupational aspirations. The subsection that follows explores additional intrapersonal factors that influence adolescents’ occupational aspirations and perceptions, those of age, gender and sex-role stereotypes. Research findings have suggested that these factors impact on adolescent career development, in general, and their occupation aspiration development, in particular (Gottfredson, 2002, 2005; Helwig, 2001).

**Age**

Adolescence is recognised as an important time during which occupational aspirations become increasingly compromised, a fact that has critical implications for career education programmes (Gottfredson, 1981, 2002, 2005). It is generally recognised that as individuals grow older and enter adolescence, occupational aspirations tend to become more realistic
(Furlong & Biggart, 1999), particularly among males (Helwig, 2004). A substantial body of research provides increasing evidence that occupational aspirations and career choice begin to crystallise well before adolescence (Hartung et al., 2005; Rowjeski, 1999; Wahl & Blackhurst, 2000). It stands to reason that the occupational aspirations of adolescents are among the most useful predictors of eventual career choices made in adulthood (Mau & Bikos, 2000). It has been found by several researchers that prestige levels (i.e., the vertical dimension) of occupational aspirations are relatively stable by early adolescence. These researchers further contend that should changes in occupational aspirations occur, they will most likely be related to occupational field (i.e., the horizontal dimension) (Rowjeski & Kim, 2003). Furlong and Biggart (1999) found that continuity rather than change best described the pattern of occupational aspirations of male and female adolescents between the ages of 13 to 16 years, indicating the stability of occupational aspirations in this age range. Interestingly, by the time the adolescents in Furlong and Biggarts’ study were 16 years old, lower status occupations had replaced only a minimal amount of the higher status professions.

Some researchers have contended that the occupational aspirations expressed by adolescents are unstable and change considerably before adulthood (Super, 1980; Trice, Hughes, Odom, Woods & McClellen, 1995). Irrespective of race and gender, Mau and Bikos (2000) found that between the 10th and 12th grade adolescents make increases, in terms of status, in their occupational aspirations. In keeping with the inconclusive trend regarding occupational aspiration research, Ali and Saunders (2009) argue that age is not a significant contributor to occupational aspirations.

The impact of age as a variable on occupational aspirations and perceptions has been researched throughout the current longitudinal study (Cox, 2004; Crause, 2006; Dean, 1998, 2001; Hargreaves, 2007; Hunter, 2009; Olivier, 2004). This individual variable has been a consistent focus of the present longitudinal project, with findings demonstrating that children
aspire to occupations from an early age (Cox, 2004; Crause, 2006; Dean, 2001; Hargreaves, 2007; Hunter, 2009; Olivier, 2004). In addition, Grobler (2000) emphasised the influence of cognitive development on the career development process in children, confirming the findings of international studies in finding career awareness to be present at a much earlier age than is proposed by career development theory. Dean (2001) noted that occupational aspirations and typologies appear to remain stable over time. Further, both Hargreaves (2007) and Hunter (2009) found that children’s descriptions of their occupational aspirations became more realistic over time. Crause (2006) highlighted the important correlation between childhood occupational aspirations and adult career choices. Based on this finding Hargreaves (2007) proposed that appropriate career education programmes can assist children in making informed and realistic career choices over time. The following subsection examines both gender and sex-role stereotypes as intrapersonal variables that influence adolescents’ occupational aspirations and perceptions.

**Gender and sex-role stereotypes**

Generally, researchers have found that male adolescents are more likely to aspire to moderate-prestige occupations, while female adolescents are more likely to aspire to either high- or low-prestige occupations (Rojewski, 1996, 2005, 2007; Rojewski & Yang, 1997). Various explanations have been provided to explain these differences, such as that: there is gender bias in the socio-economic index scales that are used to code occupations; there are discrepancies between occupational aspirations and expectations; that wages in low prestige occupations are rising; there are greater geographic restrictions on females; and there are increasing occupational opportunities for females in high prestige occupations (Rojewski, 2005, 2007). The career literature generally states that occupational gender stereotypes influence occupational aspirations (Furlong & Biggart, 1999). However, there is a difference of opinion as to whether occupational gender stereotypes decrease or remain stable over time.
It has been argued that female adolescents choose occupations that are perceived as more person-orientated, affectionate and compassionate, involving interaction with people, whereas male adolescents choose occupations that have an image of being forceful, analytic, ambitious, individualistic, and competitive, dealing with things rather than people (Evans & Diekmans, 2009). Scientific professions such as engineering and physics are by and large dominated by males, whereas women generally dominate softer disciplines, such as biology and medicine (Coder, Rosenbloom, Ash & Dupont, 2009; Schoon, 2001).

In terms of Hollands’ (1985) occupational typology, there is significant evidence that female adolescents aspire to social type occupations (Meinster & Rose, 2001) and that male adolescents aspire to realistic categories (Patton & Creed, 2007). Turner and Lapan (2005) used Holland’s (1985) occupational typology to study career development and occupational aspiration development in school-aged adolescents and found that certain occupational types were more strongly related with one gender than the other. More males were associated with Realistic, Investigative and Enterprising fields, while more females were associated with Social, Artistic and Conventional fields. Turner et al. (2008) conducted a study on adolescents in the eighth and ninth grade and found that male adolescents expressed more Realistic and Investigative occupational aspirations, whereas female adolescents expressed more Artistic occupational aspirations. Ji et al. (2004) researched both male and female eighth grade adolescents. These adolescents were found to have a greater interest in and higher self-efficacy for those occupations that they rated as employing more of their own gender.

Schoon (2001) indicated that more male than female 16-year old adolescents aspired to enter a career in the sciences. Of these adolescents, a career in engineering was found an unlikely option for females. Conversely, this gender bias was not apparent for entry into the natural sciences and health professions. Engineering, however, was the predominant choice
among male adolescents, followed by the natural sciences, and then by the medical sciences. Schoon (2001) concluded that the formulation of occupational aspirations at 16 years of age seems to be more sex-specific, as compared to adult occupational aspirations. It seems, as a result, that a major factor that influences the formulation of occupational aspirations and career development is gender. In this regard, Schoon called for effective career interventions which encourage adolescent females’ interests in a career in the sciences at this developmental stage.

Furlong and Biggart (1999) also found that males and females between the ages of 13 to 16 years are inclined to aspire to gender specific occupations. The male adolescents in their study tended to aspire to occupations with strong masculine stereotypes (i.e., the police and mechanics) and the females tended to aspire to occupations with strong feminine stereotypes (i.e., teaching, nursing and hairdressing). Interestingly, there was no evidence that gender distribution of occupational aspirations weakened as the participants matured. Although female occupational aspirations were consistently higher in their status levels than the male occupational aspirations, there was a decrease over time in the number of females aspiring to professional occupations. Nevertheless, male occupational aspiration status levels declined at a faster rate than did female occupational aspiration status levels. The decline in status of aspirations was relatively steady with regards to males; however, for females the greatest decline was seen at 15 and 16 years of age. Furlong and Biggart (1999) concluded that adolescents’ ideas about the suitability of occupations for a particular gender develop from a young age and change little over time.

Generally, female adolescents evidence less gender-traditional stereotyping in their occupational aspirations as compared to their occupational expectations. It was found that Canadian adolescent females aspired to high status occupations, although 40% lowered these aspirations when asked about their expectations (Wall, Covell & MacIntyre, 1999). Patton
and Creed (2007) conducted a study on Australian adolescents in grades eight through 12 and found that only one third of students reported occupational aspiration and expectation discrepancies. These differed across gender and across age for female adolescents but not for male adolescents. Some research points to a lack of gender differences regarding occupational aspirations and expectations (Armstrong & Crombie, 2000).

Findings such as these, along with evidence of eventual lower status occupational attainment for females, have led some researchers to conclude that the influence of sex-role stereotyping on the development and attainment of occupational aspirations is pervasive in society (Guindon & Richmond, 2005; Rojewski, 2005, 2007). Tatham (2008) explains that progress is being made in increasing the number of women in higher status occupations, but that full gender equality in terms of labour market access and conditions of employment has not yet been attained.

A number of studies demonstrate that adolescents hold less rigid gender occupational stereotypes compared to when they were younger (Watson & McMahon, 2005). Francis (2002) found that female adolescents between the ages of 14 to 16 years expressed higher occupational aspirations when compared to studies conducted twenty years previously and attributed this finding to economic and social changes in society. Mau and Bikos (2000) found that 16 year old adolescent females expressed significantly higher occupational aspirations than 16 year old adolescent males, which may reflect a greater awareness of high level professional career opportunities for women as a result of better communication and the observation of role models provided by female professionals in the twenty-first century. Helwig (2008) concluded that there has been a general decrease in occupational gender stereotyping over recent decades. Watson and McMahon (2005) attribute this decline in occupational gender stereotyping to changing social norms and the resultant socialisation of children, which should naturally influence occupational gender stereotypes held in
adolescence. These shifts may have changed the nature of occupational gender stereotypes, meaning that adolescents may now hold subtler occupational gender stereotypes.

The present longitudinal research project’s findings will now be described as they provide a retrospective view of the role that gender has played in the development of the current sample’s occupational aspirations (Cox, 2004; Crause, 2006; Dean, 2001; Hargreaves, 2007; Hunter, 2009; Olivier, 2004). Dean’s (2001) results demonstrated that boys aged five to eight years tended to be less occupationally gender stereotyped than girls and were more likely to select Realistic occupations as they became older, while girls preferred more Social occupations. International studies have yielded similar results (Hartung et al., 2005; Helwig, 1998; Watson & McMahon, 2005). Other research has demonstrated that from an early age, South African children are aware of occupational gender differences and their own gender identity (Cox, 2004; Dean, 2001; Olivier, 2004). Cox (2004) found that the children in her study (ages six to nine years) fit Gottfredson’s (2005) stage of orientation to gender roles. More female participants in this study aspired to occupations that were gender appropriate. Both Crause (2006) and Hargreaves (2007) noted a decrease in the gender stereotyping of occupations over time, with their participants moving out of Gottfredson’s (2005) stage of orientation to gender roles and into the social valuation stage. Overall gender stereotyping amongst children and adolescents in this longitudinal research project appears to decrease over time (Hunter, 2009), with boys appearing to be less occupationally gender stereotyped than girls (Cox, 2004; Dean, 2001; Olivier, 2004).

The subsection that follows considers the effect of race and culture on adolescent occupational aspirations.

Race and Culture

Race and culture are additional constructs that fit into the individual system of the Systems Theory Framework (Patton & McMahon, 1999, 2006). Before a review of the
research regarding race and culture can continue, it is essential to distinguish between the
constructs of race and culture. For the purpose of this review race is defined as a group of
people that are biologically and genetically similar, while culture is understood to imply
meanings, values and behaviours that are learned and passed down within a society or social
grouping (Sadock & Sadock, 2007). Generally, research regarding the influence of race on
adolescent occupational aspirations has revealed mixed results (Rojewski, 2007). Race tends
to interact with other influential factors (Mau & Bikos, 2000) and certain variables are said to
moderate race, such as education (Rojewski, 2005, 2007; Mau & Bikos, 2000) and socio-
economic status (Rojewski & Yang, 1997). For example, Hauser and Anderson (1991) found
no significant differences in the occupational aspirations of black and white adolescents.
Chang, Chen, Greenberger, Dooley and Heckhausen (2006) found that long-term
occupational aspirations were high across Caucasian, African, Mexican, Latino, Filipino, and
Asian American adolescents, whereas Wilson and Wilson (1992) found that black
adolescents had higher occupational aspirations than their white counterparts. Rojewski
(2007) indicated that African-American adolescents show a tendency to have lower
occupational aspirations than their Caucasian counterparts. Fouad and Byars-Winston (2005)
conducted a meta-analysis of 16 studies in order to clarify the mixed research findings
concerning the influence of race on career development. They found that race did not appear
to circumscribe the occupational aspirations that adolescents have. However, these authors
stated that racial minorities are nevertheless not proportionally represented across career
fields in the labour market. They attributed this to the differences among racial groups in their
perceptions of career opportunities and barriers.

Research recognises the role of racial and cultural stereotypes in limiting adolescents’
occupational aspirations (Wahl & Blackhurst, 2000). However, McMahon and Watson
(2007) argued that the Systems Theory Framework needs to be adopted in research so as to
embed data in the context and culture of the adolescent. Similarly, Young, Marshall and Valach (2007) argued that career theories needed to be more culturally sensitive and suggested that culture should be treated as more than a statistical or moderator variable. These authors further suggested that theorists and researchers should work with the unambiguous links between culture and career.

On a national level cultural issues also remain sidelined in the career literature (Stead & Watson, 2006). However, of the research conducted to date it would seem that culture and the context in which an individual grows up have been found to be of primary importance in the development of the self-concept and the career identity of adolescents (Watson, 1984; Watson et al., 1997). Stead (1996) indicated that culture may significantly influence career development within the South African context. He has argued that white adolescents generally follow a Westernised culture characterised by independence and individuality, whereas black adolescents tend to follow a culture characterised by cooperation and community. This cultural phenomenon may explain the interest many black adolescents have in Social type occupations. Black adolescents, both male and female, seem to aspire more to Social occupations and less to Scientific and Investigative occupations (Watson et al, 1997). Grobler (2000) hypothesised that this may be linked to the concept of ‘ubuntu’ or the humanness concept that is accentuated in black culture. Pohlman (2003) suggests that the occupational aspirations of black South African adolescents have been circumscribed by the social and historical inequalities that existed within the context that they were raised. Furthermore, black adolescents seem to experience their future career as being predetermined and involving limited opportunities. Research on other cultures within South Africa appears limited. The focus now shifts to the social system of the Systems Theory Framework. Social factors have been found to significantly influence the occupational aspiration development of adolescents.
**Social factors**

Patton and McMahon (1999, 2006) recognise family, peers, the media, community groups, the workplace, and educational institutions as social influences with which the adolescent interacts. The processes leading to career choice have been described in terms of individual differences, on the one hand, and social conditions, on the other (Schoon, 2001). This subsection examines the influences of social factors in relation to the aims of the present research. The social factors that will be discussed include family, media and school.

**Family**

Generally, family variables such as parents’ expectations, their education and their occupations have been found to correlate with adolescent occupational aspirations (Mau & Bikos, 2000; Rojewski, 2007; Turner & Lapan, 2005). Adolescents’ occupational aspirations have also been found to be positively correlated with the socio-economic status of the family (Marjoribanks, 2002). Adolescents with positive family relationships have been found to have stronger career self-efficacy beliefs (Nota, Ferrari, Solberg & Soresi, 2007). Additionally, parental involvement and support has been associated with higher adolescent occupational aspirations in general (Ali & Saunders, 2006; Diemer & Hsieh, 2008).

Constantine et al. (2007) found that familial variables, such as parental educational attainment, contributes to Black and Latino adolescents' perceptions of attainable careers. Gouvias and Vitsilakis-Soroniatis (2005) drew data from a larger cross-sectional study of the social and educational profile of students in primary and secondary education in Greece (ages seven to 18), in two phases (1995–96 and 2001–02). Their research indicated that parental occupation, despite its diminishing significance, still remained a factor influencing the formulation of adolescent occupational aspirations. Parental education, on the other hand, appeared to exert a significant effect on adolescent occupational aspirations. Gouvias and Vitsilakis-Soroniatis argued that educated parents can better help their children and
adolescents orient themselves towards high educational and professional objectives and guide them better, so that their occupational aspirations can eventually be realised.

Several studies have also pointed to the importance of adolescent females’ attachment to their mothers and the subsequent influence on their occupational aspirations (O’Brian, 1996; O’Brian, Friedman, Tipton & Lin, 2000). For example, O’Brien et al. found that attachment to their mothers during senior high school influenced the occupational aspirations of female adolescents five years later, but the effect was said to be mediated through career self-efficacy beliefs, which strongly influence occupational aspirations as indicated previously.

Alliman-Brissett, Turner and Skovholt (2004) found an association between parental support and African-American female adolescents’ sense of self-efficacy to strive for high status occupations. These female adolescents were found to be more responsive to their parents’ emotional support. Further, Alliman-Brissett et al. found that parental support increased African-American male adolescents’ self-efficacy in their competency skills and career development tasks. These male adolescents were found to be more responsive to their parents’ career-related modeling.

Research has additionally found that the influence of other significant people positively correlates with adolescent occupational aspirations. Kniveton (2004) conducted a study on adolescents aged between 14 to 18 years and found that the greatest influence on their occupational aspirations were their parents, followed by their teachers. In Helwig’s (2004) study, teachers were reported as having the greatest impact on adolescents’ occupational aspirations in the 12th grade, as compared to family members in the 10th grade.

Whiston and Keller (2004) reviewed the literature regarding the influence of family variables on adolescent occupational aspirations in order to gain further clarity. These authors found that family structure variables such as parents’ occupational field and educational level
influence adolescents' occupational aspirations. Also, family process variables such as support and mutual respect (or the lack thereof) were found to influence career-related factors both positively and negatively. The significant influence that both parents and teachers have on adolescents’ occupational aspirations was supported in this review. However, these authors concluded that accurately understanding family influences is difficult because of a lack of agreement on process terms and the uneven attention to the study of family patterns across the life span.

Nationally, research focussing on the influence of family factors on adolescent occupational aspirations is lacking. Watson and Stead (1993) found that guidance teachers and parents were considered by black South African adolescents as significantly more important sources for occupational information than teachers, relatives and peers. Dean (2001) and Olivier’s (2004) studies suggest that children between the ages of four and 10 years identify with key figures in their environment, which is a confirmation of Super’s (Super et al., 1996) proposition that children in the Growth stage obtain occupational information from key figures. Both Hargreaves (2007) and Hunter (2009) found that the present participants (at an earlier age) tended to identify family members and parents as being influential in their occupational aspirations. It is clear that family plays an important role in influencing the occupational aspiration development of adolescents. An additional social influence that will now be discussed is that of the media.

**Media**

Few studies have investigated the effects of the media on adolescent occupational aspiration development (Levine & Hoffner, 2006). Television and movies often depict people at work and research suggests that generally media depictions affect adolescents’ occupational aspirations (Hoffner et al., 2006). Van Den Bulck and Beullens (2007) found that among a sample of 369 adolescents in their last year of secondary education, regular
viewing of a “docu soap” about midwives, veterinarians or para-commandos was a significant predictor of more positive perceptions of those professions. Thus, the odds of becoming a student of a particular study programme that was recently featured in a docu soap increased by 15 percent after viewing. These authors emphasised the need for continued research in this area. Similarly, research suggests that adolescents who regularly viewed television held values about occupations that were like those portrayed on television (Signorielli, 1993).

However, Levine and Hoffner (2006) found that adolescents between the ages of 14 and 18 years learn relatively little about occupational requirements from the mass media. About one fifth of their sample spontaneously expressed skepticism regarding the accuracy of occupation-related information depicted in the media. Research conducted on the influence of the media on adolescent occupational aspirations seems to be limited as no international research beyond 2006 could be found.

To date there seems to be no national research regarding the influence of the media on adolescent occupational aspirations. The influence of the schooling context on adolescent occupational aspirations will now be examined.

**School**

School is in general recognised as an influence on the career development of adolescents as they spend a considerable amount of their time in school settings (McMahon et al., 2001). School is said to be an influence regardless of whether it provides career intervention (McMahon & Patton, 1997) and it is mentioned in several career theories including that of Super (1990; Super et al., 1996). In addition, the role of schools in career education has been debated for decades (Herr & Cramer, 1996; Hoyt & Wickwire, 2001).

Mau and Bikos (2000) found that academic record and school type (i.e., private school) were the two strongest predictors of adolescents’ occupational aspirations. Adolescents with
good grades and those in private schools generally aspired to higher status occupations. Ahmavaara and Houston (2007) conducted research on English adolescents in grades 7 and 10 from two selective and two non-selective secondary schools. Ahmavaara and Houston found that achievement aspiration strongly related to school type, with adolescents in selective schools having higher achievement aspiration. As mentioned previously, adolescents’ academic confidence strongly influences their occupational aspirations.

Schoon (2001) found the school environment to be influential in guiding adolescents into particular career directions. Females attending single-sex schools were more likely to aspire to a career as a scientist, and males in single-sex schools were less likely to consider a career in engineering than adolescents in co-educational schools. Hence, it would appear that single-sex schools encourage less sex-stereotyping than mixed schools with regard to occupational choice.

This latter finding confirmed earlier studies conducted by Stables (1990) and Lawrie and Brown (1992) indicating that girls in single-sex schools show a stronger interest in the natural sciences than their peers in co-educational schools. The explanation provided by the above mentioned study would be viewed as a socio-economic factor according to the Systems Theory Framework; nevertheless it will be discussed in this subsection for the sake of continuity. Schoon (2001) acknowledged that students in single-sex secondary schools tend to be of higher social class than those in co-educational schools and girls from privileged backgrounds are more likely to develop gender atypical occupational aspirations. The fact that boys in single-sex schools were less likely to aspire to a career in engineering could indicate a class bias against engineering. Students with aspirations to become engineers were more likely to come from less privileged families than those interested in a career in medicine or the natural sciences, and their mathematical test performance was of a lower level than their peers. Schoon (2001) found support for theories of social reproduction (Bourdieu, 1988)
which state that the school environment plays a mediating role through which social and economic inequalities are reproduced by means of the transmission of values, attitudes and habits.

Although adolescents’ responses were only moderately positive when asked if their school had been helpful and supportive in their search for a career direction and in their career preparation, individual teachers of advanced and specialised courses that adolescents had taken in the 11th and 12th grade were said to have had an impact (Helwig, 2004). Also, perceived teachers’ occupational aspirations for adolescents have been found to influence their occupational aspirations (Helwig, 2004; Kniveton, 2004; Wilson & Wilson, 1992). Previous researchers have also highlighted the strength between academic attainment and occupational aspirations (Jacobs, Karen & McClelland, 1991; Powers & Wojtkiewicz, 2004; Rojewski, 1999). For example, mathematical ability seems to be a major predictor of occupational attainment across the scientific professions (Schoon, 2001). It has been suggested that when career education is integrated into the school curriculum, adolescents are able to derive the greatest benefit from it and teachers are increasingly able to relate their classroom activities to the world of occupations (Kurr & Kurpius, 2004; Mei Wei & Newmeyer, 2008).

No national research appears to have been conducted regarding the influence of school factors on adolescent occupational aspiration development.

In addition to the abovementioned social factors, adolescents’ occupational aspirations are further influenced by environmental-societal factors according to the Systems Theory Framework. Environmental-societal factors are discussed in the next section.
Environmental-societal factors

Factors including geographical location, socio-economic status, historical trends, employment market, political decisions and globalisation, although at a more macro-systemic level, significantly influence adolescents’ occupational aspirations (Patton & McMahon, 1999, 2006; Stead & Watson, 2006). These factors seem to be more implied than they are researched, and this for the most part is the case with South African research (Hunter, 2009). Research has acknowledged socio-economic status, geographic location, and economic and political policies as essential variables influencing occupational aspirations and perceptions (Cox, 2004; Crause, 2006). In addition, Watson and McMahon (2005) emphasise environmental-societal influences such as the labour market, social policy and the role of technology. The subsection that follows focuses on research pertaining particularly to socio-economic status, since this societal factor indirectly relates to the aims of the present study in that the participants are drawn from a specific socio-economic status level.

Socioeconomic status

The influence of socioeconomic status on occupational aspiration development has received limited consideration in the career psychology literature (Rojewski, 2007). Despite this, it seems socioeconomic status has either a direct or indirect role to play in determining occupational aspirations (Diemer & Hsieh, 2008; Holms & Esses, 1988; Rojewski & Yang, 1997; Wahl & Blackhurst, 2000). For example, Marjoribanks (2002) argues that socioeconomic status and adolescents’ occupational aspirations are mediated, in part, by their individual characteristics and proximal learning settings. Generally, however, research indicates that adolescents from higher socioeconomic status backgrounds aspire to more prestigious occupations as compared to adolescents from lower socioeconomic status (Rojewski, 2007). Diemer and Hsieh (2008) found that sociopolitical development was associated with higher occupational expectations among adolescents of colour and lower
socioeconomic status. The authors argue that this may contribute to decreasing the occupational aspiration-expectation gap among lower socio-economic status adolescents of colour. Further, the authors conclude that it is important to realise that higher socioeconomic status brings more access to the resources needed to attain occupational aspirations, whereas lower socioeconomic status can result in bias and structural barriers that negatively affect occupational aspirations. Blustein, McWhirter and Perry (2005) recommend that career interventions with marginalised adolescents should foster their socio-political consciousness and motivation to produce social change.

Helwig (2008) reported that, starting from the senior high school level, adolescents shift away from high social value occupations to a more mixed set of occupations. Helwig suggested that this finding may be evidence of older adolescents choosing occupations that fit with their own personal characteristics and abilities, although this trend appeared at a somewhat later age than Gottfredson (2005) theorised. Khallad (2000) conducted a comparative study on Palestinian and American adolescents. In contrast to previous research, Khallad found that socioeconomic status was positively related to the level of adolescents’ educational aspirations but not to the level of their occupational aspirations. Generally, positive correlations between occupational aspirations and socioeconomic status were more evident for the female adolescents than for the male adolescents. However, Ali (2005) conducted a pilot study on ninth grade adolescents from lower socioeconomic status backgrounds and found that their occupational self-efficacy beliefs significantly predicted their occupational aspirations. Contextual supports and barriers were not found to significantly influence these adolescents’ occupational aspirations.

On a national level, current research on the influence of socioeconomic status on adolescent occupational aspirations has been relatively limited. However, some researchers argue that socioeconomic status significantly influences adolescents’ occupational aspiration
development (Stead, 1996; Stead & Watson, 2006; Watson et al., 1997). The present study does not examine socioeconomic status as it has been controlled for through making sure that the participants were drawn from a homogenous socioeconomic status group. As a consequence of this homogenous participant group, there have been restricted findings regarding the role of socio-economic status in the current longitudinal project.

Summary

While significant progress has been made in determining the nature and precursors of occupational aspirations, much remains unidentified. Individual factors including self-concept, self-efficacy, age, gender, race and culture have been identified as important influences on adolescents’ occupational aspiration development, as have social factors which include family, media and school. In addition, environmental-societal factors such as socioeconomic status have been found to play an important role in adolescents’ occupational aspiration development.

Research findings have demonstrated that adolescents’ self-concepts play an integral role in their career development and, more specifically, in their occupational aspiration development. It is clear that as individuals grow older and enter adolescence, occupational aspirations become more realistic. With regards to gender, male adolescents have been found to aspire more to moderate-prestige aspirations, while female adolescents have been found to aspire more to either high- or low-prestige occupations. Generally, the current career literature suggests that adolescents hold occupational gender stereotypes and that these stereotypes tend to follow traditional gender lines. Research regarding the influence of race on adolescent occupational aspirations has revealed mixed results, whereas culture seems to have a greater impact on South African adolescents’ occupational aspiration development.

Although research results are mixed, social factors such as family and parental modelling tend to influence the development of adolescents’ occupational aspirations. More
specifically, the current longitudinal study suggests that the influence of family and parental modelling decreases in importance over time. Generally, research shows that media and the school context influence adolescents’ occupational aspirations. Social influences extend to occupational gender stereotyping, prestige rankings and world of work knowledge.

Environmental-societal factors, in particular socioeconomic status, have been considered to have an important influence on adolescents’ occupational aspiration development. Adolescents’ occupational aspirations have been found to be strongly influenced by an occupation’s status as defined by the dominant culture. Furthermore, there is a strong correlation between socioeconomic status, occupational status level and adolescents’ occupational aspirations.

This research review has aimed to provide an overview of research that has focussed on the career development and occupational aspiration development of adolescents. The chapter that follows will describe the focus of the present research and the methodological considerations pertaining to the current longitudinal research. Thus, Chapter 4 will provide a comprehensive explanation of how this study was conducted.
CHAPTER 4

Research Methodology

It is essential to position the current study within the context of the larger ongoing longitudinal research project of which it forms a part. This longitudinal research aims to track the development of the occupational aspirations and perceptions of a sample of South African children and adolescents over a twelve year period, which spans from the commencement of their primary education to the completion of their secondary education. A number of studies have already been completed as part of this ongoing research project including: Cox (2004); Crause (2006); Dean (2001); Hargreaves (2007); Hunter (2009); and Olivier (2004). These studies have afforded significant insight into the development of the occupational aspirations in this group of South African children and adolescents, providing research in an area of career development that has not received sufficient attention to date (Watson & McMahon, 2008a).

The present study expands on and further explores the career development of adolescents by describing the occupational aspirations and occupational gender stereotypes of a sample of 15 to 16 year old South African adolescents over a period of two years. The research problem and the primary aims of the present study are explained in this research methodology chapter. Additionally, the research methodology employed in the study is described which includes a description of: the research method used; the sampling technique adopted; how participants were selected; the measures used for data collection; and the research procedure. Lastly, ethical issues are considered.

Problem Statement

During its relatively short history, career development theory has evolved from the earlier trait-factor theories of the twentieth century to a more developmental perspective (Patton & McMahon, 2006). Recent career development theories view career development as
a life-long process, with adolescent career development being influenced by personal and contextual factors that begin in childhood (Gottfredson, 2002, 2005; Sharf, 2006, 2010; Super, 1990). However, research on career development has failed to provide an understanding of how early stages of career development are linked to adolescent career choices (Patton & Skorikov, 2007). International research into adolescent career development has led to the development of career education programmes that have enhanced the career awareness of adolescents, thus highlighting the need for such research on a national level (Hargreaves, 2007; Olivier, 2004). Dean (2001) argues that research creates the possibility of evaluating and modifying career theory and career education programmes. Further, Hunter (2009) has argued that career education programmes in South Africa should aim to educate adolescents regarding the training and study requirements of different occupations in order to assist them in the implementation of a career choice.

The current longitudinal study aims to provide baseline information on the career development of South African adolescents in order to address this shortfall. Previous studies in this longitudinal research project have substantiated career development theories and have found childhood and adolescence to be significant stages of occupational aspiration development. Dean (2001) assessed the current sample when they were 4 to 8 years of age, Cox (2004) from the ages of 6 to 9 years, Olivier (2004) between the ages of 8 and 10 years, Crause (2006) from 9 to 12 years, and Hargreaves (2007) between the ages of 9 to 13 years. The latest study has been that of Hunter (2009) who assessed the adolescents from 12 to 14 years of age. The present study is the seventh study in the longitudinal project and assesses the stability and variability of the occupational aspirations and perceptions of a sample of 15 to 16 year old South African adolescents over a two year period in terms of the adolescents’ occupational interest typology, occupational status levels, occupational gender stereotypes and occupational gender traditionality. In addition to focussing on the quantitative results of
the longitudinal study, this study also included a qualitative perspective, previously introduced by Crause (2006), of the adolescents’ occupational aspirations.

**Primary aims of the research**

The primary aim of this study is to explore and describe the occupational aspirations and occupational perceptions of a group of 15 to 16 year old South African adolescents over a two year period. In particular, this study aims to:

1. Explore and describe how adolescents’ occupational aspirations and perceptions (in terms of Holland’s interest typology) may develop over a two year period for the sample as a whole, as well as for each gender group separately.
2. Explore and describe how adolescents’ occupational aspirations and perceptions (in terms of occupational status level) may develop over a two year period for the sample as a whole, as well as for each gender group separately.
3. Explore and describe how adolescents’ occupational perceptions (in terms of gender stereotypes and traditional gender roles) may develop over a two year period for the sample as a whole, as well as for each gender group separately.
4. Explore and describe how adolescents reflect on their occupational aspirations and development over the course of this longitudinal study (i.e., over the past 12 years).

**Research Methodology**

The purpose of the research method is to provide a framework for the answering of research questions and to control for error in variance (Neuman, 2006). The present study falls within the area of quantitative research. In quantitative research the data collection is structured in order to produce more conclusive research (Struwig & Stead, 2001) and the data collected is presented numerically (Goodwin, 2005). This was the case in the current study in which semi-structured interviews and biographical questionnaires were utilised to record verbal information and the resultant data was transposed into nominal data for analysis.
Reflection questions that formed part of the semi-structured interview were initially content analysed and then further analysed using frequency counts. An advantage of quantitative studies is that they allow for a high degree of control over the research situation (Whitley, 2002) and for the coherent and functional presentation of collected data (Struwig & Stead, 2001). Furthermore, topics that may otherwise be difficult to analyse can be investigated when abstract concepts are quantified. Additionally, statistical and numerical data can be precisely and accurately compared (Goodwin, 2005). On the other hand, a disadvantage of the quantitative method is that indepth insight and understanding into the research problem may be compromised (Neuman, 2006; Silverman, 2005). Also, it has been argued that a quantitative approach provides for a low degree of naturalism (Whitley, 2002). In the light of the present study’s sample size and the longitudinal nature of the research, the quantitative method was deemed as the best approach to the current study.

The present study was additionally non-experimental as it involved natural observation and the variables were not manipulated (Gravetter & Forzano, 2006). Within the framework of quantitative research this study also demonstrated an exploratory-descriptive approach. Exploratory-descriptive research is described as the observation and description by the researcher of what is observed (Babbie, 2005). The study thus attempted to gain knowledge and insight into a phenomenon, while describing its characteristics accurately (Neuman, 2006). It is argued that a comprehensive and precise depiction of the phenomenon under study can be gained by employing a descriptive research method (Struwig & Stead, 2001). Moreover, exploratory research seeks to extend and clarify ideas while developing further specific questions for future research (Gravetter & Forzano, 2006). In view of the fact that most career research fails to adequately consider and make linkages between childhood and adolescent dimensions of life-span career development (Germejs & Verschueren, 2007; Schultheiss, 2008; Vondracek, 2001), longitudinal research in the field of adolescent career
development remains a relatively unexplored domain. Conceptualized within this context the present study can be described as exploratory.

The present study examines features of the same individuals over various times as they grow older (Babbie, 2005). There is a lack of research on life-span career development and this type of research has been consistently called for (Savickas, 2002b; Silbereinsen, 2002) in order to expand the limited information available regarding the career development of adolescents (Skorikov & Patton, 2007). Longitudinal research observes features of the same participants at more than one point in time (Graziano & Raulin, 2000). Longitudinal research requires that information be collected during at least two time points over a span of at least one year (Babbie, 2005). The attrition rate should also be low enough to maintain the longitudinal quality of the study. Both these criteria were met in the present study. The same participants were evaluated on two occasions over a two-year period and the number of participants was large enough for statistical analysis and to maintain the integrity of the longitudinal study. Only those participants who were assessed in both years covered by the present study were reported on.

The current study also employed a qualitative method in that indepth semi-structured interviews were conducted and reflection questions were content analysed. Qualitative research is described as gaining non-numerical information such as the contents of participants’ responses to questions asked in semi-structured interviews (Whitley, 2002). Semi-structured interviews utilize structured as well as unstructured interviews (Struwig & Stead, 2001). Generally, they utilize guidelines that indicate the topics to be covered and may include specific questions, however there is no specified order in which the topics need to be covered (Whitley, 2002). This technique allows for multiple and detailed responses to questions and provides for a balance between rigidity and flexibility (Struwig & Stead, 2001; Whitley, 2002). It also promotes an environment in which the interviewee is likely to feel at
ease, which stimulates conversation (Gravetter & Forzano, 2006). It is argued, nevertheless, that the interviewees’ responses may however be influenced by predetermined questions (Struwig & Stead, 2001). Also, some topics may be left out and the employment of unstandardised questions decreases the comparability of responses (Whitley, 2002). In the light of the present study, the utilisation of the semi-structured interview was deemed as the best approach in gaining data from the adolescents.

**Participants and Sampling**

As previously mentioned, the aim of this study was to further ongoing longitudinal research aimed at exploring changes in the occupational aspirations and occupational perceptions of a group of South African children and adolescents over time. Sampling techniques are a way of selecting a small group of individuals from a population in such a manner that the researcher is able to draw conclusions about a phenomenon being investigated (Gravetter & Forzano, 2006; Graziano & Raulin, 2000; Neuman, 2006). The sample for the present study comprised previously selected participants from this longitudinal project. The target population for the initial study consisted of pre-primary school children in the Nelson Mandela Metropole. The initial sampling procedure involved a two stage process in which fee-paying schools were selected according to a simple random sampling procedure before the children were selected. This procedure ensured that all the pre-primary schools in the Nelson Mandela Metropole had an equal chance of being selected (Babbie, 2005; McBurney, 2001). A sample of 130 children was obtained during the first year of the study using convenience, non-probability sampling.

The use of a non-probability sampling procedure means that the probability of a constituent or unit being selected is unknown (Struwig & Stead, 2001). An advantage of this approach is its practicality and cost effectiveness (Cozby, 2004; Struwig & Stead, 2001). This sampling method is also convenient, practical and economically advantageous (Gravetter &
Forzano, 2006; Graziano & Raulin, 2000; Neuman, 2006). In the case of the larger longitudinal study, this approach was initially suitable because it was convenient to interview all children who were attending a particular pre-primary school at the same time. A disadvantage of this approach is that generalisation is difficult, if not impossible (Sheskin, 2000; Struwig & Stead, 2001). It should nevertheless be noted that generalisation of results will not be of central importance given that the approach of this study will be exploratory-descriptive. Purposive sampling is useful when the aim is to gain an in-depth understanding rather than to generalise findings to a larger population group (Neuman, 2006). Consequently, this method is suitable for use in an exploratory descriptive study as the primary aim is not to generalise findings.

A potential disadvantage of longitudinal research is the attrition rate of participants in later years of the study (Babbie, 2005). This proved to be true for the present study in which the initial sample size of 130 children (between 4 and 6 years of age) decreased in successive years of the study. The attrition rate can be mainly ascribed to the decision made in the third year of the study to continue assessing only the children who were 6 years of age in the initial assessment. Thus, the other age cohort which included children who were 4 and 5 years of age in the first year of study were no longer assessed. At the start of the study all participants were still attending pre-primary school which made it convenient in terms of available time and financial resources to conduct semi-structured interviews. In successive years, all the children and adolescents who were still available for the study were interviewed to ensure an adequate sample size (Cox, 2004).

The sample size impacts directly on the degree to which a researcher can place confidence in the data gained (Whitley, 2002). A larger sample provides statistics that are more representative of the population (Struwig & Stead 2001). The sample for the current study (N=43) is large enough to provide meaningful results. This sample consists of all
adolescents who were initially assessed at six years of age and were assessed during all subsequent years. It should be noted that 47 adolescents are currently being interviewed each year. However, some of these adolescents have not been available to be interviewed each and every year of the study, which also explains the decreased sample size in the present study, compared to the previous year’s sample size (N=44). As only the adolescents interviewed in both years under study were included in the current sample, the total number of participants in the present study was 43.

Of the 43 participants, 20 are males and 23 females. The participants turned 15 years of age in the first year of the present study and turned 16 years of age in the last year. At the start of the present study they were in Grade 9 and at the end of the two years they were in Grade 11. These participants were drawn from the initial study and were initially assessed at the age of 6 years. The participants attend 20 different schools, 5 of which lie outside the Nelson Mandela Metropole. To ensure a sufficient sample size, adolescents who lived outside the metropole and were willing to continue their participation were interviewed telephonically or via skype in successive years (Cox, 2004; Crause, 2006; Hunter, 2009). One of the participants attends a school which lies outside of South Africa. This participant only recently relocated overseas (i.e., in 2009), thus the decision to continue interviewing this participant was made. Over the two years of the present study six participants have been interviewed telephonically or via skype each year. It was considered essential to maintain contact with participants no longer living in the Nelson Mandela Metropole, as the size of a sample affects the confidence that can be placed in the statistical significance of the data analysed. The actual statistical values in the population are represented more accurately if a larger sample is used (Gravetter & Forzano, 2006). It should be noted however that this study does not propose to make generalisations about the population at large.
The sample could be viewed as fairly homogenous with regard to socio-economic status (Cox, 2004; Dean, 2001). This statement is based on the fact that the pre-primary and primary schools participating in this study were those where parents paid school fees. Added to this, these schools catered primarily for middle- to upper socio-economic status families (Dean, 2001). The high schools that are currently participating in this study are those where parents pay school fees. The sample consists of predominantly white, English-speaking adolescents. Although the sample is mostly white, other cultural groups were included in the original study (Dean, 2001). However, culture and home language have not been considered as variables in the original (Dean, 2001), subsequent (Cox, 2004, Crause, 2006, Hargreaves, 2007, Hunter, 2009, Olivier, 2004) or present study.

**Research Measures**

Data was collected for the current study through the use of a biographical questionnaire and the Career Awareness Questionnaire (CAQ). Both measures were administered by means of a semi-structured interview format. The measures were designed for use in this longitudinal study and can be found in Appendices A to G respectively.

**Biographical Questionnaire**

A biographical questionnaire was developed by previous researchers as a means of obtaining information on important variables, such as the age and gender of the participants, and whether children had indicated an occupational aspiration to their parents (Cox, 2004; Dean, 2001). The original questionnaire, which can be found in Appendix A, has been used throughout the longitudinal study. The questionnaire is combined with the consent form in which parents or guardians agree to their children participating in the study. Items were set out in such a way as to facilitate easy understanding by the parents or guardians as well as to simplify coding for statistical analysis. The biographical questionnaires were matched to the participants’ interview schedule in order to collate all the information needed for the data
capturing and for future use. Hunter (2009) made minor amendments to the biographical form. The categories of age and gender were omitted in the biographical questionnaires since this information was available to the researcher. An additional clause was added to gain consent for participants to be interviewed on video, and provision was made for the participants to consent along with their parents to their own participation. These amendments were maintained in the present study. Furthermore, the biographical questionnaire allows for the tracking of participants in successive years. The amended biographical questionnaire used in the present study can be found in Appendix B.

**Career Awareness Questionnaire (CAQ)**

The Career Awareness Questionnaire is a semi-structured interview schedule developed as a way of obtaining information from participants regarding their occupational aspirations, the number of occupations they know about, and their gender stereotypical perceptions of occupations. The CAQ has been the interview schedule used since the beginning of the longitudinal project. It has undergone minor modification over the past 11 years in order to accommodate the cognitive development of the participants. The initial CAQ schedule used can be found in Appendix D, whereas the CAQ used in subsequent studies is found in Appendix E. The version used by Crause (2006) and Hargreaves (2007) can be found in Appendix F and the revision by Hunter (2009), which was used in the present study, can be found in Appendix G.

Dean (2001) suggested that semi-structured interviews were the most suitable way for gathering data on occupational aspirations and perceptions as the target population for the initial study in this longitudinal research project was constituted of preschool children. The semi-structured interview is an adaptable method of collecting data and it can be used with all age groups (Babbie, 2005), including pre-school children who are not yet able to read (Huysamen, 1994).
The use of the semi-structured interview is advantageous for a variety of reasons. It makes provision for open and frank responses, assuming rapport has been established between the interviewer and interviewee. Also, the semi-structured interview is flexible and its structure can be adapted according to the requirements of the specific interview. Lastly, the interview allows for the collection of personal information, attitudes, perceptions and beliefs (Gravetter & Forzano, 2006; Struwig & Stead, 2001). A disadvantage of this data collection method is that the initial process of structuring the interview format may be time consuming (Crause, 2006). Furthermore, the interviewee’s responses may be forced, inhibited or influenced by predetermined questions (Struwig & Stead, 2001). However, a semi-structured interview is still considered the most appropriate method of data collection for this study as it allows for relatively quick and effective data collection, as well as enabling the researcher to make direct comparisons between the information provided by different participants (Whitley, 2002).

As this research forms part of a larger longitudinal project, the interview schedules used since the onset of the project form the foundation of the present study. Cox (2004) described how the questions in the initial semi-structured interview were modelled on research conducted by Nelson (1978). Nelson found that asking children open-ended questions assists in the development of occupational thinking and in the questioning of the child’s reasoning. The format of the initial semi-structured interview (Dean, 2001) has undergone minor alterations in successive studies. This has been done in consideration of the chronological development of the participants (Cox, 2004; Olivier, 2004). Crause (2006) added an additional question and two follow-up questions to the CAQ that required participants to reflect on their occupational aspirations and development in previous years (see Appendix F). These questions have been retained in subsequent years of the study to provide for further analysis of the participants’ career development. They provide important information for
future research, as well as an explanation of how participants have interpreted and experienced possible changes in their occupational aspirations and perceptions over a period of time. The present study has made minor revisions to some of the terminology used in the CAQ, replacing the words “boy” and “girl” with the words “man” and “woman” and the term “grown up” with “adult”.

The semi-structured interview consists of five main questions, with supplementary questions that follow on from these questions. The five main questions aid in the exploration of participants’ occupational aspirations, the number of occupations they know about, how much they know about the identified occupations, the extent to which they hold gender stereotypical perceptions about certain occupations, and reflections on their own career development. Given that the majority of the sample of adolescents for the present study are currently in Gottfredson’s fourth stage of occupational development (i.e., orientation to the internal unique self), their responses to question 1 (c) of the Career Awareness Questionnaire (CAQ) will be content analysed in terms of Gottfredson’s criteria for the social evaluation and internal unique self stages of career development. This question asks adolescents why they would like to pursue the occupation that they aspire to. The semi-structured interviews used in the initial study, as well as the revised version used in follow up studies and the present study, can be found in Appendices D, E, F and G respectively.

Interviews were conducted in either English or Afrikaans to ensure that participants’ answers would not be negatively affected by having to speak in their second language. This had been done in previous data collection in this longitudinal study (Cox, 2004; Dean, 2001). Typically most participants were interviewed in English with only a few of the participants each year being interviewed in Afrikaans.
Ethical Considerations

In the field of psychology, ethical guidelines for research are outlined in the psychology profession’s ethical code (Professional Board for Psychology, 2002). The importance of ethical practices when conducting research is highlighted by several researchers (Craig & Baucum, 2002; Graziano & Raulin, 2000; Oliver, 2003). Researchers are compelled to respect the rights and dignity of research participants and to ensure their safety. Thus, researchers should abide by certain ethical principles and codes of conduct. Ethical guidelines are in place to ensure that research is carried out in a morally acceptable way by researchers (Oliver, 2003; Struwig & Stead, 2001). The same ethical guidelines that were used by previous researchers in this longitudinal project were employed in the present study (Cox, 2004; Crause, 2006; Dean, 2001; Hargreaves, 2007; Hunter, 2009; Olivier, 2004). In addition, the process stipulated by the code of ethics for research of the Nelson Mandela Metropolitan University for seeking permission was followed. These procedures have previously been approved by the university’s Human Ethics Committee for this longitudinal research project.

Informed consent

The psychology profession’s ethical code places emphasis on the issue of informed consent. Informed consent necessitates that participants receive an accurate description and perception of the research process, possible risks of participation, and what the information gained will be used for (Professional Board for Psychology, 2002). A participant’s decision to participate in any research study needs to be informed and voluntary (Oliver, 2003; Professional Board for Psychology, 2002). All participants were adequately informed of the process of the study, what participation involved and what would happen to the information they provided. Also, participants were informed that participation was voluntary and that they could withdraw at any point in the study. Participants were further given a contact telephone...
number for the researcher should any queries or uncertainties have arisen. Permission for the longitudinal research study was obtained from the Nelson Mandela Metropolitan University, relevant education authorities, schools, parents and adolescents involved in the study and written consent was obtained from the parents of each adolescent and the adolescents themselves participating in the study prior to the interview. The consent form used in the present study can be found in Appendix B. The letter sent to the parents can be found in Appendix C.

**Coercion**

Coercion refers to forcing or pressurising a member of the population under study to take part in research (Corey, Corey & Callanan, 2003). This directly contradicts the individual’s right to voluntary participation and to withdrawal from the research study at any point (Struwig & Stead, 2001). Participation in the present study was voluntary and adolescents were not required to participate. All prospective participants were treated respectfully. Moreover, their interest and time was taken into consideration regardless of their decision to participate in the current study. Participants were not harmed during this study.

**Confidentiality**

A research study guarantees confidentiality when the researcher can identify a given individual’s responses but promises not to do so publicly (Babbie, 2005). Confidentiality refers to the safe keeping of data, where others are denied access to it, and that the data be used solely for the purposes of the study (APA, 2003; Oliver, 2003; Struwig & Stead, 2001). Confidentiality of information and participant details are of vital importance due to the type of information collected for psychological research. Anonymity could not be maintained in this study as the researcher required the names and contact addresses of all participants to keep track of them over time. Nevertheless, all written and computerised data was kept locked up or password protected in order to ensure confidentiality. Moreover, access to
participant information was only given to those individuals directly involved with the longitudinal research project. One of the objectives of this research is to follow the same adolescents longitudinally, implying that anonymity cannot be guaranteed for the participants. However, the results were only used for research purposes and confidentiality of all data has been maintained.

**Feedback**

Feedback is important as it helps to ensure that participants remain informed and willing to participate in longitudinal research (Hunter, 2009). Additionally, feedback helps to ensure that participants are treated with respect. Feedback was provided to the participants and their parents in the form of a general written report and group feedback was provided to the participating schools. Previous studies in this longitudinal research project have emphasised the value of such feedback.

**Research Procedure**

The present longitudinal study began in 1998. Various pre-primary schools in the Nelson Mandela Metropole were contacted both telephonically and in writing in order to determine their willingness to partake in the study (Cox, 2004; Dean, 2001). Feedback on the results was offered to the schools, parents and participants as an incentive to participate in the study. Letters of confirmation with dates and times, parental consent forms, as well as biographical questionnaires were subsequently sent to the participating schools. Parents were asked to complete both the consent form and the biographical questionnaire and requested to return these to the school before the scheduled interviews. The elicited information on participants’ age, gender, contact addresses and telephone numbers was necessary so that the participants could be contacted in succeeding years (Cox, 2004; Crause, 2006; Hargreaves, 2007; Hunter, 2009; Olivier, 2004). Further, parents were asked not to prepare their children in any way with regards to their career thoughts so as to maintain the validity of the results
(Cox, 2004). The format of the consent form can be found in Appendix A, while the original letter to the parents can be seen in Appendix C. The schools that originally agreed to participate were contacted in subsequent years to confirm their continued willingness to participate in the study (Cox, 2004, Crause, 2006, Hargreaves, 2007). Furthermore, this action was taken to establish which children were no longer attending these schools and where these children could be located.

Hunter (2009) followed this same procedure, but made two minor changes. Parental information letters and consent forms (Appendices B and C) were sent directly to parents to ensure a more efficient and higher return rate. Also, every parent or guardian of the participants was contacted telephonically to ensure their ongoing participation. Previous studies found that asking parents to return biographical forms to the schools often resulted in delays, with parents consenting but forgetting to send the biographical form to the school. It was therefore decided that parents could fax or post these forms directly to the researcher, which resulted in a higher rate of compliance. The same procedure was followed in the present study.

The fieldwork and data collection was conducted largely by postgraduate psychology students from the Nelson Mandela Metropolitan University. These students were rigorously trained in both the semi-structured interview procedure as well as in the capturing of data in order to ensure accuracy and consistency in data collection. The students recorded verbatim the participants’ responses in the space provided below each question (see Appendix G). As with previous years of this study, the postgraduate students were selected and evaluated by a team of researchers from the university. Each postgraduate student initially interviewed at least one adolescent under supervision. Once students were evaluated as being competent they were authorised to interview adolescents on their own.
An average of 10 to 15 minutes is needed to complete one CAQ interview. The interviews were conducted at a time prearranged by the participating schools. The interviews took place outside the classroom in a setting relatively free of distractions and disruptions. In addition, some adolescents were interviewed at their homes in cases where it was not possible to interview them at school. A time was arranged that was suitable to the parent or guardian for the adolescent to be interviewed at home. As mentioned beforehand, interviews were carried out telephonically in some instances in order to ensure a lower attrition rate in cases where participants were no longer residing in the Nelson Mandela Metropole.

In a certain section of the semi-structured interview (see Appendix G) adolescents are asked to reflect on their occupational aspirations throughout the course of this research. Where permission was given, this part of the interview was captured on video to provide a richer source of qualitative information regarding the adolescents’ experience of their own career development. The CAQ interview data was captured, scored and linked to the data from previous years. For the purpose of the present study only data pertaining to the 15 to 16 year old participants was coded and analysed. After the completion of this research study, group feedback in the form of a general report was sent to participating schools, parents and adolescents.

**Data Coding**

Data coding refers to the means by which raw data are transformed into a standardized form suitable for processing and analysis (Babbie, 2005). The information collected is categorised, assigned numerical values and grouped together in themes to make further analysis possible (Neuman, 2006; Struwig & Stead, 2001). In order to quantify the occupational aspirations of the adolescents, their responses were coded according to Holland’s (1985) classification system of occupational interest types (Cox, 2004; Crause, 2006; Dean, 2001; Hargreaves, 2007; Hunter, 2009; Olivier, 2004). The adolescents’
responses were coded by the researcher. For the two years of the present study, the data coding was checked for accuracy by another researcher involved in the larger longitudinal study.

Holland’s theory suggests that an individual’s personality, abilities and interests can be matched with a particular work environment, which is referred to as the person-environment fit paradigm (Watson & Stead, 2006b). Through the interaction of an individual’s personality type and environment, an attempt is made to find a work environment suited to one’s values, skills, competencies and attitudes (Swanson & Chu, 2006).

Three basic assumptions are pertinent to Holland’s theory: adolescents can make rational decisions; adolescents and their environments differ in ways that are reliable, meaningful and consistent; and that increased congruence between the personality and environment type will result in increased career success (Watson & Stead, 2006b). Holland (1985) proposes six modal personality types and matching work environments, with individuals generally fitting predominantly one of these six types. Individuals’ interaction with peers, biological heredity, parents, social class, culture and physical environment leads, according to Holland (1985), to the development of specific interests and competencies. Individuals will develop a preference for a particular occupational type due to their interests and competencies. Holland’s occupational types of Realistic, Investigative, Artistic, Social, Enterprising and Conventional can be placed on a hexagon in fixed positions, forming the acronym RIASEC if read in a clockwise manner (Nel, 1999; Watson & Stead, 2006b). Briefly described in Table 1 below are the six personality types and their matching work environments.
Table 1

Personality Types

<table>
<thead>
<tr>
<th>Personality type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realistic</td>
<td>Realistic people enjoy working with their hands and prefer outdoor work. They tend to be practical, technical and athletic people. They enjoy using equipment, machinery, and tools. They prefer structure and like to work on their own.</td>
</tr>
<tr>
<td>Investigative</td>
<td>Investigative people are critical thinkers who are rational and logical, often showing an interest in mathematics and science. They prefer to work on their own, possibly in an environment where they can work with facts, do research and try to find solutions to problems.</td>
</tr>
<tr>
<td>Artistic</td>
<td>Artistic people are creative, spontaneous and introspective. They prefer unstructured and aesthetic environments. In addition, Artistic individuals tend to enjoy being around people, have an appreciation for art in all its forms and are able to communicate well.</td>
</tr>
<tr>
<td>Social</td>
<td>Social people are caring, friendly and cooperative. They are interested in other people and they enjoy training, developing, curing, or enlightening others. They tend to be sensitive and communicative and they place great value on the development of good interpersonal relationships.</td>
</tr>
<tr>
<td>Enterprising</td>
<td>Enterprising type individuals tend to be ambitious and competitive. They have persuasive and interpersonal skills, are good leaders and are energetic and optimistic. They usually opt for the field of business and management.</td>
</tr>
<tr>
<td>Conventional</td>
<td>Conventional type individuals prefer occupations where routine, order and preset instructions are important. Such individuals are usually conscious of finer detail and prefer structured office environments. They enjoy clerical, computational and figure work.</td>
</tr>
</tbody>
</table>

It is important to note that this study only used Holland’s system to classify and code the occupations aspired to by the participants, beyond which his theory was not applied. This classification system has been successfully adopted in previous years of this longitudinal study to classify and code the occupational aspirations and perceptions of the children and adolescents (Cox, 2004; Crause, 2006; Dean, 2001; Hargreaves, 2007; Hunter, 2009; Olivier, 2004). Further, most South African occupations have been coded in the South African Dictionary of Occupations (Taljaard & Von Mollendorf, 1987) according to Holland’s typological codes.
The data obtained from the interview was coded using a three letter typology code, with the first letter in the code being the most important occupational type. This predominant occupational type was used for comparison with previous years of the study and only this first letter has been reported on. Additionally, the RIASEC model was used to code the status levels of the participants’ occupational aspirations, by means of the status levels presented in the South African Dictionary of Occupations (Taljaard & Von Mollendorf, 1987). These status codes range from one (indicative of an occupation requiring some form of post-secondary education) through to five (indicative of an occupation requiring less than high school education). These status codes are summarised below in Table 2. In cases where participants indicated that they were interested in more than one occupation, only their first aspiration was coded for the purposes of this study.

Table 2

Status Codes for Occupations

<table>
<thead>
<tr>
<th>Level</th>
<th>Description of Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Unskilled workers (e.g., primary school or no education)</td>
</tr>
<tr>
<td>4</td>
<td>Semi-skilled workers (e.g., grade 8, 9 or 10)</td>
</tr>
<tr>
<td>3</td>
<td>Skilled workers (e.g., technical college or matric)</td>
</tr>
<tr>
<td>2</td>
<td>Middle-level workers (e.g., college diploma such as for nursing or teaching)</td>
</tr>
<tr>
<td>1</td>
<td>High-level workers (e.g., tertiary education such as university or technikon)</td>
</tr>
</tbody>
</table>

Data Analysis

Descriptive and inferential statistics were used to analyse the data. Descriptive statistics were employed so as to allow for the organisation and easy interpretation of the recorded and observed data (Sheskin, 2000; Struwig & Stead, 2001). Descriptive statistics were also used
since this study takes an exploratory-descriptive approach. Descriptive statistics are generally used by researchers to organise, simplify and summarise data (Gravetter & Forzano, 2006). It should be noted that Hargreaves (2007), Hunter (2009) and previous researchers used descriptive statistics to analyse the data in their studies.

The descriptive statistical analysis aimed at providing a description of the occupational aspirations and perceptions of the sample of 43 participants over a two year period. Secondly, it aimed at describing how these occupational aspirations and perceptions have developed in terms of occupational typology and also how these occupational aspirations and perceptions may have developed in terms of occupational status level. Lastly, it aimed at describing the extent to which the sample’s gender perceptions, with regard to occupational gender stereotyping and gender traditionality, may have shifted over time.

Data were categorical or nominal in nature and therefore frequency counts were employed to report on the coded typology and status level of the occupational aspirations according to gender and age. These frequency counts were subsequently converted into percentages, which allowed for the enhancement of the description and understanding of the data. The adolescents’ occupational aspirations and expectations over the two year period were further cross-tabulated with reference to Holland’s (1985) typology for occupational and status levels. Thus the typology and status level of adolescents’ occupational aspirations were tracked over a two year period. Frequency counts and percentages were used to determine whether any development had taken place in the occupational gender perceptions of the participants, both in terms of gender stereotyping and gender traditionality.

To enhance the understanding of the descriptive statistics, inferential statistics were employed for the first time in the history of the longitudinal project. Inferential statistics use samples of observations to infer observations most likely found in a population (Struwig & Stead, 2001). A non-parametric technique (i.e., chi-square test of independence) was
employed. Whitley (2002) argues that non-parametric techniques are versatile as they can deal with categories of responses on questionnaires. Non-parametric statistics are believed to be less powerful (i.e., ability of a statistical test to reject a null hypothesis that is false) than parametric statistics. The chi-square was conducted in this study and is a statistical test of the significance of the discrepancy between the observed and the expected frequencies. It is acknowledged that chi-square is usually not appropriate for small samples however the significance of the results gained outweigh this disadvantage.

Content analysis was used to identify themes and to analyse the data extracted from question 1 (c) of the CAQ. In essence, content analysis is the study of recorded human communications (Babbie, 2005). Content analysis can be further explained as a means of examining and analysing written and oral communications in a systematic, objective and quantitative way in order to assess specific psychological variables (Aiken, 2000). The content analysis was carried out by the researcher and verified by the research supervisor. Themes were extracted and reflected against Gottfredson’s criteria for the internal unique self stage of development. This was done since the participants for the present study are currently in Gottfredson’s fourth stage of occupational development (i.e., orientation to the internal unique self).

Lastly, for the purposes of reporting on the fourth aim of the present study, the reflection question of the CAQ was content analysed for each adolescent at the age of 16 years. In doing so themes and trends that these adolescents have shown in their occupational aspirations over the entire eleven years of the longitudinal study can be discussed. Descriptive statistics were additionally employed to describe the reflections of the adolescents for this particular question such that frequency counts were used to examine the themes and trends that arose from the content analysis.
Summary

This chapter has focussed on the research methodology of the present study. The research design, sampling techniques, assessment measures, research procedure and methods for data coding and analysis were outlined in detail. Further, the method used to obtain consent and the demographics of the participants were described. Ethical matters regarding the present study were also discussed in detail. The findings of the present study and a discussion of these findings is offered in the following two chapters.
CHAPTER 5

Results

The focus now turns to the presentation of the results of the current study which explores and describes the possible developments in occupational aspirations and perceptions of a sample of South African adolescents over a two year period. The specific aims outlined in Chapter 4 will provide the framework according to which this chapter will be organised. Initially the chapter reports on the results of the occupational aspirations and perceptions of the total sample under review. The development over time of these occupational aspirations is described in terms of the aspirations’ occupational typology. This chapter also describes how the adolescents’ occupational aspirations and perceptions have developed with regards to their status level. In addition to describing the adolescents’ occupational aspiration development in terms of their typology as well as status level for the entire sample, intra-individual changes are tracked. The chapter considers the adolescents’ occupational aspirations to determine the applicability of Gottfredson’s orientation to internal unique self stage (14 years and over) to the current sample. Attention is given to the means by which the adolescents’ gender perceptions, in terms of occupational gender stereotypes and occupational gender traditionality, have developed over the two years under review. The chapter concludes by reporting on a qualitative analysis of the adolescents’ reflections on the development of their occupational aspirations throughout the course of the longitudinal research conducted over the past twelve years.

**Occupational Aspiration Typology over Time**

**Total Sample**

The initial aim of the current study was to explore and describe possible developments in the occupational aspirations of a group of South African adolescents over the two year period being studied. The findings for the entire sample as well as for the gender groups
separately are described in this section of the results chapter. The results focus particularly on trends that may have developed. These results are described for the sample as a whole and for intra-individual changes that may have taken place. The results for the entire sample are described according to Holland’s occupational typology classification system (i.e., Realistic, Investigative, Artistic, Social, Enterprising and Conventional). As described in the methodology chapter, chi-square analyses were conducted to provide for a richer understanding of the results. In this regard, Table 7 examines the relation between occupational aspiration typology and gender and Table 12 examines the relation between occupational aspiration status level and gender.

Earlier studies within the longitudinal project made use of an additional fantasy category (Dean, 2001; Olivier, 2004); however this category has been discontinued in more recent years as older children and adolescents no longer aspired to fantasy type occupations (Cox, 2004; Crause, 2006; Hargreaves, 2007; Hunter, 2009). Hargreaves (2007) and Hunter (2009) incorporated a “no choice” category which indicated participants who did not express an occupational aspiration. This study has discarded the “no choice” category since throughout the duration of the present study all of the adolescents identified and named an occupation to which they aspired.

Table 3 presents a summary of the frequency counts for the occupational aspiration typologies of the total sample (N = 43) over the two year period. Percentages are provided below the frequency counts. In terms of Holland’s typology, the Investigative type was found to be the most common occupational aspiration across the two years under study. The popularity of Investigative type occupations increased from 30.23% at age 15 years to 39.53% at age 16 years. This popularity may be attributed to the large number of males aspiring to engineering type occupations. At age 15 years the second most popular occupational aspirations were for Social type occupations and the third most popular were for
Artistic type occupations. By age 16 years Artistic type occupations were second most popular whereas Social and Enterprising type occupations were equally the third most popular aspiration. The lower popularity of Realistic and Enterprising type occupations remained relatively stable and Conventional type occupations remained the least popular over time.

Table 3
Frequency Counts for Occupational Aspiration Typology over Two Years: Total Sample

<table>
<thead>
<tr>
<th>Holland’s Typology</th>
<th>15 years</th>
<th>16 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realistic</td>
<td>5 (11.63%)</td>
<td>4 (9.30%)</td>
</tr>
<tr>
<td>Investigative</td>
<td>13 (30.23%)</td>
<td>17 (39.53%)</td>
</tr>
<tr>
<td>Artistic</td>
<td>8 (18.60%)</td>
<td>9 (20.93%)</td>
</tr>
<tr>
<td>Social</td>
<td>10 (23.26%)</td>
<td>6 (13.95%)</td>
</tr>
<tr>
<td>Enterprising</td>
<td>5 (11.63%)</td>
<td>6 (13.95%)</td>
</tr>
<tr>
<td>Conventional</td>
<td>2 (4.65%)</td>
<td>1 (2.33%)</td>
</tr>
</tbody>
</table>

At the age of 15 years most participants aspired to Investigative, Social and Artistic occupations, with the combined number of participants in these three typologies representing 72.09% of the total sample. As mentioned earlier, by age 16 years the Artistic typology replaced the Social typology as second most popular. The Social and Enterprising typologies were equally the third most popular occupational aspiration with Investigative, Artistic, Social and Enterprising aspirations totalling 88.37% of the total sample at age 16 years.

The intra-individual changes in occupational aspirations over the two years were also examined. These developments are summarised in Table 4. As this study has focussed on participants between the ages of 15 and 16 years, the 15 year old data was used as a baseline. The occupational typology that the adolescents aspired to at age 15 years is specified in the
left-hand column of the table. The stability of these occupational aspirations was tracked by indicating intra-individual changes in the ensuing year of the study in the right-hand column of the table. For example, two participants aspired to Conventional type occupations at age 15 years. At age 16 years one of these adolescents still aspired to a Conventional type occupation, while the other aspired to an Enterprising type occupation. The other columns can be read in a similar manner.

Table 4

Frequency Counts for Intra-individual Occupational Aspiration Typology over Two Years: Total Sample

<table>
<thead>
<tr>
<th>Typology</th>
<th>Age 15 years</th>
<th>Age 16 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>f</td>
</tr>
<tr>
<td>Realistic</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Investigative</td>
<td>13</td>
<td>9</td>
</tr>
<tr>
<td>Artistic</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Social</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Enterprising</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Conventional</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Interestingly twenty four of the forty three participants or, as otherwise expressed, 55.81% aspired to the same typology over the two years of this study implying that there is some stability in terms of adolescents aspiring consistently to the same occupational typology. This is emphasised by the fact that, while thirteen participants initially aspired to Investigative type occupations at age 15 years, nine of these participants continued to aspire to Investigative type occupations by age 16 years. This is further supported by the trends for
the Artistic typology where six of the initial eight participants aspiring to Artistic occupations at age 15 years continued to do so by age 16 years. It is interesting to note, however, the instability in development in terms of adolescents aspiring to the Social typology. While ten participants initially aspired to Social type occupations at age 15 years, only three of these participants continued to aspire to Social type occupations by age 16 years. These trends nevertheless suggest that adolescents’ occupational aspirations generally tend to remain stable between the ages of 15 and 16 years. The section that follows describes developments in occupational aspiration typology in terms of gender groups.

**Females**

The development in occupational aspiration typology over the two years for the sample of females (n=23) is summarised in Table 5. The frequency counts and percentages are represented according to Holland’s RIASEC typology. Due to small sample sizes, intra-individual changes were not tracked for gender groups. Thus the results are restricted to the prominent trends noted in the gender group as a whole over the two years studied.

Table 5

**Frequency Counts for Occupational Aspiration Typology over Two Years: Females**

<table>
<thead>
<tr>
<th>Holland’s Typology</th>
<th>15 years</th>
<th>16 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realistic</td>
<td>3 (13.04%)</td>
<td>3 (13.04%)</td>
</tr>
<tr>
<td>Investigative</td>
<td>4 (17.39%)</td>
<td>7 (30.43%)</td>
</tr>
<tr>
<td>Artistic</td>
<td>5 (21.74%)</td>
<td>6 (26.09%)</td>
</tr>
<tr>
<td>Social</td>
<td>5 (21.74%)</td>
<td>4 (17.39%)</td>
</tr>
<tr>
<td>Enterprising</td>
<td>4 (17.39%)</td>
<td>2 (8.70%)</td>
</tr>
<tr>
<td>Conventional</td>
<td>2 (8.70%)</td>
<td>1 (4.35%)</td>
</tr>
</tbody>
</table>
Investigative, Artistic and Social occupations were generally the most popular occupational typologies across the two years for the female sample. At age 15 years Artistic and Social type occupations were equally most popular whereas Investigative and Enterprising type occupations were equally second most popular. The Realistic category was the second least popular. By age 16 years Artistic type occupations were second most popular, whilst Social type occupations were third most popular. Investigative type occupations were most popular at age 16 years. At age 16 years, the typology distribution for the female sample thus represented the total sample more accurately. The lesser popular Realistic typology remained consistent, while Conventional type occupations were least popular across time. Having considered the occupational aspiration typology developments of the females we now shift our attention to the males.

**Males**

The frequency counts of the occupational aspiration typologies for the sample of males (n=20) is reported in Table 6. Percentages are specified below the frequency counts. As with the females, intra-individual changes for each male were not tracked due to the small sample size. The males indicated a distinct preference for the Investigative typology across time. This was only true for the females at age 16 years. At age 15 years Social type occupations were second most popular whereas Artistic type occupations were third most popular. A general trend is noted regarding the popularity of Investigative, Artistic and Social type occupations with regards to males and females at age 15 years.

By age 16 years, Enterprising type occupations were second most popular whereas Artistic type occupations were third most popular. It should be noted that at age 16 years Artistic type occupations were second most popular for females and Social type occupations were third most popular. It appears there is a distinct difference between the male and female
occupational aspiration typology distribution at age 16 years, except for a preference for Investigative type occupations.

Table 6

Frequency Counts for Occupational Aspiration Typology over Two Years: Males

<table>
<thead>
<tr>
<th>Holland’s Typology</th>
<th>15 years</th>
<th>16 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Realistic</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>(10%)</td>
<td>(5%)</td>
</tr>
<tr>
<td>Investigative</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>(45%)</td>
<td>(50%)</td>
</tr>
<tr>
<td>Artistic</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(15%)</td>
<td>(15%)</td>
</tr>
<tr>
<td>Social</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(25%)</td>
<td>(10%)</td>
</tr>
<tr>
<td>Enterprising</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(5%)</td>
<td>(20%)</td>
</tr>
<tr>
<td>Conventional</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(0%)</td>
<td>(0%)</td>
</tr>
</tbody>
</table>

As with the females it can be seen in Table 5 that males aspiring to Conventional type occupations remained consistently low. The popularity of Realistic, Investigative, Artistic and Conventional type occupations remained relatively consistent. The popularity of Enterprising type occupations increased in the second year of the study, whereas the popularity of Social type occupations decreased. We now shift our attention to the chi-square results of the typology developments in occupational aspirations of the total sample and both gender groups.

Statistical Results for Gender Comparisons

Table 7 presents a summary of the chi-square analysis performed to examine the relation between occupational aspiration typology, total sample and gender groups. Frequency counts and percentages are provided according to Holland’s RIASEC typology. An alpha level of .05 was used for all statistical tests. For example, 52.2% of females did not
change the type of occupation initially aspired to. The other columns can be read in a similar manner.

Table 7

Chi-square: Occupational Aspiration Typology over Two Years: Total Sample and Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Occupational Aspiration Typology</th>
<th>Stayed the same</th>
<th>Changed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>12</td>
<td>11</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(52.2%)</td>
<td>(47.8%)</td>
<td>(100%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
<td>8</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(60%)</td>
<td>(40%)</td>
<td>(100%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>19</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(55.8%)</td>
<td>(44.2%)</td>
<td>(100%)</td>
<td></td>
</tr>
</tbody>
</table>

(Chi²(d.f. = 1, N = 43) = 0.27; p = .606).

Table 7 suggests that over the two years the majority of females (52.2%) and males (60%) aspired to the same occupation type. In total, 55.8% of the entire sample aspired to the same occupational status level over time. The relation between occupational aspiration typology and gender was not statistically significant (p = .606). In other words, females were as likely to aspire to the same occupational type over time as were males.

In summary, the results presented in Table 3 indicate that Investigative type occupations remained most popular over time. An examination of intra-individual changes in occupational aspirations evident in Table 4 revealed consistency in terms of aspirational typology. The results presented in Table 5 suggest that Investigative, Artistic and Social occupations were generally the most popular occupational typologies for the female sample. Table 6 suggests a distinct preference for the Investigative typology regarding the male sample. Table 7 suggests that the difference in gender with regards to occupational aspiration development over time is not statistically significant. The next section of this chapter describes the occupational aspirations of the total sample as well as gender groups with reference to status levels.
Occupational Aspiration Status Level over Time

Total Sample

The second aim of the current study was to explore and describe possible status level developments in the participants’ occupational aspirations and perceptions over the two years under study. These results are indicated for the entire sample and for each gender group individually. Holland’s (1985) status level classification system was used to code the occupational aspiration status levels. This classification system is described in more detail in the methodology chapter. Occupational status level categories include the following: high level (for high status or professional occupations); middle level (for middle status or semi-professional occupations); skilled occupations; semi-skilled occupations; and unskilled occupations.

This section of the results chapter highlights trends that have developed, focussing on the sample as a whole as well as on intra-individual changes. The frequency counts for occupational aspiration status level over the two years for the total sample (N=43) is summarised in Table 8. Status levels were scored on a five point scale which ranged from unskilled occupations (requiring less than secondary school education) to highly skilled occupations (requiring some form of tertiary education). As indicated in Table 8, the majority of participants (n=35) consistently aspired to high status or professional occupations over both years. The number of adolescents aspiring to high status occupations has thus remained stable over time. A large difference between the percentage of participants aspiring to high status occupations and those aspiring to the second most popular status category of middle-level occupations is evident at age 15 and 16 years. This further highlights the stability in terms of these adolescents’ occupational aspirations towards high-level or professional occupations. Overall, high- and middle-level status categories accounted for 91.9% of the occupational aspirations of the total sample.
Table 8

Frequency Counts for Occupational Aspiration Status Levels over Two Years: Total Sample

<table>
<thead>
<tr>
<th>Status Level</th>
<th>15 years</th>
<th>16 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-level</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>(81.40%)</td>
<td>(81.40%)</td>
</tr>
<tr>
<td>Middle-level</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>(9.30%)</td>
<td>(11.63%)</td>
</tr>
<tr>
<td>Skilled</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(4.65%)</td>
<td>(6.98%)</td>
</tr>
<tr>
<td>Semi-skilled</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(4.65%)</td>
<td>(0%)</td>
</tr>
<tr>
<td>Unskilled</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(0%)</td>
<td>(0%)</td>
</tr>
</tbody>
</table>

Middle-level and skilled occupation status categories also proved stable over time. Only two adolescents aspired to occupations in the semi-skilled category at age 15 years and by age 16 years no adolescents aspired to this category. Unskilled occupations were not aspired to in either year. It is thus evident that the present sample of adolescents consistently aspired to higher status occupations.

Intra-individual changes in occupational status levels were tracked in addition to tracking the status levels of the occupational aspirations for the total sample. Intra-individual changes were tracked beginning with each participant’s first occupational aspiration status level at the age of 15 years. This procedure mirrored the procedure used to track occupational aspiration typologies explained previously in this chapter. The frequency counts for intra-individual changes in occupational aspiration status level over the two years are summarised in Table 9. As there were no occupational aspirations for unskilled occupations in both years of the study, this status level category is not recorded in the left-hand column of the table. The intra-individual changes of females’ and males’ occupational aspiration status levels were not reported as a result of the small sample sizes involved.
Table 9

Frequency Counts for Intra-individual Occupational Aspiration Status Level over Two Years: Total Sample

<table>
<thead>
<tr>
<th>Status Level</th>
<th>15 years</th>
<th>f</th>
<th>16 years</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>35</td>
<td></td>
<td>High</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Middle</td>
<td>2</td>
</tr>
<tr>
<td>Middle</td>
<td>4</td>
<td></td>
<td>Middle</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>High</td>
<td>1</td>
</tr>
<tr>
<td>Skilled</td>
<td>2</td>
<td></td>
<td>Skilled</td>
<td>2</td>
</tr>
<tr>
<td>Semi-skilled</td>
<td>2</td>
<td></td>
<td>High</td>
<td>2</td>
</tr>
</tbody>
</table>

The majority of adolescents (n=40) aspired to the same occupational status level. This accounts for 93% of the total sample, suggesting a degree of stability in terms of the status level of occupations aspired to over time. This stability is emphasised by the fact that thirty five adolescents aspired to high-level status occupations at age 15 years and by age 16 years only two of these adolescents changed their aspirations to middle-level status occupations. Four adolescents aspired to middle-level status occupations at age 15 years and by age 16 years only one adolescent changed their aspiration to a high-level status occupation. Only two adolescents aspired to skilled occupations over both years. Two adolescents who aspired to semi-skilled occupations in the first year of the study, aspired to high-level status occupations by the second year of the study. The presentation of the results will now turn to the occupational status levels for each gender group separately.

Females

The frequency counts for the occupational aspiration status levels over the two years of this study for the sample of females (n=23) is summarised in Table 10. The majority of the female sample consistently aspired to high status level occupations, with 73.91% of females aspiring to this status level category across the two years. Three females aspired to middle-level status occupations at both age 15 and 16 years. Two females aspired to skilled
occupations at age 15 years with one more female aspiring to this category a year later. The female participants aspired to neither semi-skilled nor unskilled occupations except for one female who aspired to a semi-skilled occupation at age 15 years.

Table 10

Frequency Counts for Occupational Aspiration Status Levels over Two Years: Females

<table>
<thead>
<tr>
<th>Status Level</th>
<th>Age</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15 years</td>
<td>16 years</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-level</td>
<td>17</td>
<td>17</td>
<td>(73.91%)</td>
</tr>
<tr>
<td>Middle-level</td>
<td>3</td>
<td>3</td>
<td>(13.04%)</td>
</tr>
<tr>
<td>Skilled</td>
<td>2</td>
<td>3</td>
<td>(8.70%)</td>
</tr>
<tr>
<td>Semi-skilled</td>
<td>1</td>
<td>0</td>
<td>(4.35%)</td>
</tr>
<tr>
<td>Unskilled</td>
<td>0</td>
<td>0</td>
<td>(0%)</td>
</tr>
</tbody>
</table>

These results mirror the total sample’s preference for professional occupations as a whole. The discussion of the results chapter now focuses on the sample of males and their status level occupational aspirations.

**Males**

A summary of the frequency counts for the occupational aspiration status levels for the sample of males (n=20) over the two year period can be found in Table 11. The high status category was the most popular across time. One male aspired to a middle-level status occupation at age 15 years whereas two males aspired to this category by age 16 years. The skilled, semi-skilled and unskilled categories remained consistently unpopular, with only one male aspiring to a semi-skilled occupation at age 15 years. These results suggest that the occupational aspiration status level for males has remained stable over time. Similar trends
were established for the sample as a whole as well as for the female sample. It is interesting to note that more males (90%) aspired to high status occupations than females (73.91%).

Table 11

Frequency Counts for Occupational Aspiration Status Levels over Two Years: Males

<table>
<thead>
<tr>
<th>Status Level</th>
<th>Age</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15 years</td>
<td>16 years</td>
<td></td>
</tr>
<tr>
<td>High-level</td>
<td>18 (90%)</td>
<td>18 (90%)</td>
<td></td>
</tr>
<tr>
<td>Middle-level</td>
<td>1 (5%)</td>
<td>2 (10%)</td>
<td></td>
</tr>
<tr>
<td>Skilled</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Semi-skilled</td>
<td>1 (5%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Unskilled</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
</tbody>
</table>

We now shift our attention to the chi-square results of the status level developments in occupational aspirations of the total sample and gender.

**Statistical Results for Status Level Comparisons**

Table 12 presents a summary of the chi-square analysis performed to examine the relation between occupational aspiration status level, total sample and gender groups. Frequency counts and percentages are provided according to Holland’s status level typology. An alpha level of .05 was used for all statistical tests. For example, over the two years 87% of females did not change their occupational status level aspirations. The other columns can be read in a similar manner.

Table 12 suggests that over the two years only 13% of females and 10% of males aspired to different occupational status levels. In total, 88.4% of the entire sample aspired to the same occupational status level over time. The relation between occupational aspiration status level and gender was not statistically significant, (p = .893). In other words, females
were as likely to aspire to the same occupational aspiration status level over time as were males. These results concur with the descriptive analyses presented above.

Table 12

Chi-square: Occupational Aspiration Status Levels over Two Years: Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Occupational Aspiration Status Levels</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stayed the same</td>
<td>Changed</td>
</tr>
<tr>
<td>Female</td>
<td>20 (87%)</td>
<td>3 (13%)</td>
</tr>
<tr>
<td>Male</td>
<td>18 (90%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>Total</td>
<td>38 (88.40%)</td>
<td>5 (11.60%)</td>
</tr>
</tbody>
</table>

(Chi²(d.f. = 1, N = 43) = 0.02; p = .893).

In summary, Tables 8, 9, 10 and 11 indicate that the present sample of adolescents have consistently aspired to higher status occupations, regardless of gender. However, it is interesting to note that more males aspired to high status occupations than females; Table 12 indicates that this difference is not statistically significant. The following section of the results chapter reports on adolescents’ occupational aspirations with regards to Gottfredson’s stage of orientation to internal unique self.

**Occupational aspirations according to Gottfredson’s theory**

Content analysis was used to identify themes and to analyse the answers participants gave to question 1(c) of the CAQ across the two years of the study. It was expected theoretically that adolescents between the ages of 15 and 16 years would be in the internal unique self stage (14 years and over) of Gottfredson’s occupational aspiration development theory. The content analysis was performed by the researcher and the themes extracted were contrasted against Gottfredson’s criteria for the internal unique self stage of development. The themes extracted outlined in Table 13 are: *interests and likes* (e.g., some adolescents
stated that their occupational aspiration was something that they had always been interested in); abilities (e.g., adolescents aspired to an occupation because they felt it was something they were good at doing); financial status (e.g., adolescents stated that they could make a lot of money in certain occupations); enjoyment and fun (e.g., adolescents stated that an occupation looked like it would be enjoyable); plays and enjoys sport (e.g., adolescents already involved in sports reported the desire to become professional athletes); wanting to help people (e.g., adolescents aspiring to occupations such as doctor or teacher attributed their aspiration to their desire to help people); wanting to travel (e.g., some adolescents felt particular occupations would provide them with the opportunity to travel to other countries); wanting to work outdoors (e.g., adolescents expressed that certain occupations would give them the opportunity to work outdoors as opposed to being office-bound); occupation in demand (e.g., certain adolescents explained that their occupational aspiration was in demand and thus there were opportunities available); lower level of education required (e.g., adolescents aspired to certain occupations due to ease of access or lower education requirements); and parent and family influence (e.g., adolescents attributed their occupational aspirations to parent or family member involvement or advice).

During the orientation to internal unique self stage, adolescents develop a greater sense of self-awareness, become introspective and occupational aspirations tend to be consistent with the internal unique self of the individual (Gottfredson, 2002; Helwig, 2004). The construct of “social space” becomes important in this stage and can be defined as the individual’s perception of where they belong or where they wish to belong in society (Watson & Stead, 2006a). Whereas the initial three stages are characterized by the elimination of unacceptable careers, the fourth stage centres on choosing a preferred career out of the remaining alternatives (Swanson & Gore, 2000).
Extracting themes and comparing them to Gottfredson’s theory assisted the researcher in exploring the reasons provided by the adolescents for their occupational aspirations and whether these reasons could be linked to self-awareness and perceptiveness towards others (Gottfredson, 1981, 1996, 2002, 2005). Themes that could be linked to Gottfredson’s stage of orientation to internal unique self include *interest and likes, abilities, wanting to help people* and *wanting to travel*. The other themes content analysed fall into previous stages, which is not the focus of this study. However, it is interesting to note that themes relating to Gottfredson’s third stage of orientation to social valuation did not emerge in the content analysis. Hunter (2009), who studied the same adolescents between the ages of 12 to 14 years, found themes that reflected Gottfredson’s third stage of orientation to social valuation. Thus, it seems that the current sample of adolescents have progressed developmentally into Gottfredson’s fourth stage.

There were a number of themes identified across the two years with some adolescents naming reasons for their occupational aspirations that fell into more than one identified theme. As a result, the total frequency counts add up to more than the total number of participants. Frequency counts of the major themes are provided in Table 13. Across the two years it can be seen that the most frequently named reason for an occupational aspiration was that the aspiration reflected the adolescent’s *interests and likes*. At age 15 years *enjoyment and fun*, and *abilities* were the second and third most popular reasons. By age 16 years *abilities* became a more frequently chosen reason than *enjoyment and fun*. 
Table 13

Frequency Counts of Content Themed Reasons for Occupational Aspirations

<table>
<thead>
<tr>
<th>Content Themes</th>
<th>Frequency of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15 years</td>
</tr>
<tr>
<td>Interests and Likes</td>
<td>29</td>
</tr>
<tr>
<td>Abilities</td>
<td>7</td>
</tr>
<tr>
<td>Financial Remuneration</td>
<td>3</td>
</tr>
<tr>
<td>Enjoyment and Fun</td>
<td>10</td>
</tr>
<tr>
<td>Plays and Enjoys Sport</td>
<td>1</td>
</tr>
<tr>
<td>Wanting to Help People</td>
<td>2</td>
</tr>
<tr>
<td>Wanting to Travel</td>
<td>0</td>
</tr>
<tr>
<td>Wanting to Work Outdoors</td>
<td>3</td>
</tr>
<tr>
<td>Occupation in Demand</td>
<td>1</td>
</tr>
<tr>
<td>Lower Level of Education Required</td>
<td>1</td>
</tr>
<tr>
<td>Parent and Family Influence</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 14 groups the identified themes under Gottfredson’s Orientation to Internal Unique Self stage, the stage that the participants currently fall into.

Table 14

Frequency Counts of Occupational Aspiration Themes according to Gottfredson’s Orientation to Internal Unique Self Stage

<table>
<thead>
<tr>
<th>Orientation to Internal Unique Self</th>
<th>Content Themes</th>
<th>Frequency of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>15 years</td>
</tr>
<tr>
<td>Interests and Likes</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>Abilities</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Wanting to Help People</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Wanting to Travel</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

In summary, themes that are considered part of Gottfredson’s orientation to internal unique self stage include interests and likes, abilities, wanting to help people and wanting to travel. The most frequently named reason for an occupational aspiration was that the aspiration reflected the adolescent’s interests and likes. Abilities and wanting to help people
were also named as reasons for occupational aspirations by some participants. Wanting to travel was indicated as the least popular reason for selecting an occupational aspiration.

**Gender Stereotyping of Occupations**

The third aim of the present study was to explore and describe possible developments in the adolescents’ occupational perceptions in terms of gender stereotypes and traditional gender roles over the two year period. This section of the results chapter reports on whether or not the adolescents in the present sample hold occupational gender stereotypes and how these stereotypes might develop over time. This aim was researched using question 5 of the CAQ in which adolescents were asked whether or not they thought men or women could become any of fourteen different occupations. Their responses were recorded on the interview schedule and then analysed using percentages. The percentages can be seen in Tables 15, 17, 19 and 21. Tables 15 and 17 provide a summary of the gender stereotyped views held by females regarding the suitability of occupations for females and males respectively. Tables 19 and 21 represent the gender stereotyped views of the males in the sample regarding the suitability of fourteen occupations for females and males respectively. Tables 16, 18, 20 and 22 provide results using the chi-square to gain further clarity on gender stereotyping patterns. A participant was seen as showing signs of gender stereotyping if they indicated that a certain gender could not work in a certain occupation. For example, if a participant said “no” or “unsure” to the question “could a man be a Nurse” they were classified as showing signs of gender stereotyping. An alpha level of .05 was used for all statistical tests.

All eight tables represent data captured over the two years of the present study. For Tables 15, 17, 19 and 21 the occupations are listed in the far left column of the table in the order presented on the interview schedule. The participants’ responses were recorded as “yes”, “no”, or “unsure”. Percentages that are boldfaced indicate the majority of responses for
a particular occupation. As previously explained, the interview format was adjusted after Dean’s (1998) study to make certain that participants were aware of what each occupation entailed (Cox, 2004). This adjustment was a result of Dean (1998) establishing that some of her 4 to 8 year old participants were responding to questions without any knowledge of the occupation, which may have negatively affected the results of her study. The category of “no occupational information” (NOI) was selected in ensuing years of the study to indicate that the participant did not know what the occupation entailed. It should be noted that there were no recorded responses for the NOI category in the current study, indicating that the present older developmental sample has bridged the gaps in their occupational knowledge since Dean’s phase of the longitudinal research.

**Extent to which females gender stereotype occupations**

The percentages reported in Table 15 indicate the extent to which females (n=23) gender stereotype occupations for other females over the two years of the study. Table 16 provides information on the statistical significance of these results. Table 17 presents the percentages showing the extent to which females gender stereotype occupations for males over the two years under study and Table 18 provides information on the statistical significance thereof. It should be noted that each year does not add up to 100% due to rounding off of percentages in Tables 15 and 17.

The results presented in Table 15 demonstrate that across the two year period all the listed occupations were seen as suitable for females, with percentages consistently higher than 87%. Females seem to consistently indicate that all careers are suitable for their gender as their “no” and “unsure” responses never reach 10%.
Table 15

Extent to which Females Gender Stereotype Occupations for Females over Two Years

<table>
<thead>
<tr>
<th>Occupation</th>
<th>15 years</th>
<th></th>
<th></th>
<th>16 years</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Unsure</td>
<td>Yes</td>
<td>No</td>
<td>Unsure</td>
</tr>
<tr>
<td>Fire Fighter</td>
<td>87</td>
<td>13</td>
<td>0</td>
<td>91.3</td>
<td>8.7</td>
<td>0</td>
</tr>
<tr>
<td>Hairdresser</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pop Singer</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Author</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Doctor</td>
<td>95.7</td>
<td>4.3</td>
<td>0</td>
<td>91.3</td>
<td>8.7</td>
<td>0</td>
</tr>
<tr>
<td>Chemist</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Nurse</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Police Officer</td>
<td>95.7</td>
<td>4.3</td>
<td>0</td>
<td>91.3</td>
<td>8.7</td>
<td>0</td>
</tr>
<tr>
<td>Teacher</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TV Announcer</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lawyer</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Secretary</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bank Teller</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>President</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Some variances were noted however. The occupations of Hairdresser, Pop Singer, Author, Chemist, Nurse, Teacher, TV Announcer, Lawyer, Secretary, Bank Teller and President were seen as suitable for females at the 100% level across both years under study. There was a slight decrease in stereotypical perception for the occupation of Fire Fighter which increased from 87% of females believing this was a suitable occupation for females at age 15 years, to 91.3% at age 16 years. A small percentage of females viewed the occupations of Doctor and Police Officer as being unsuitable for females, with gender stereotypical perceptions increasing marginally for these occupations in the final year of the study. Across both years of the study there were no females that indicated a lack of occupational information.

Table 16 indicates that females remained consistent regarding their gender stereotyping views over time, with 82.6% of females not showing signs of gender stereotyping towards females. The relation between year and gender stereotyping towards females was not
statistically significant (p = 1.000). In other words, females at age 15 years were as likely to show similar percentiles of signs of gender stereotyping towards females as were females at age 16 years.

Table 16

Chi-square: Extent to which Females Gender Stereotype Occupations for Females over Two Years

<table>
<thead>
<tr>
<th></th>
<th>Did not show signs of stereotyping</th>
<th>Showed signs of stereotyping</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 years</td>
<td>19 (82.6%)</td>
<td>4 (17.4%)</td>
</tr>
<tr>
<td>16 years</td>
<td>19 (82.6%)</td>
<td>4 (17.4%)</td>
</tr>
</tbody>
</table>

(Chi²(1) = 0.00, p = 1.000).

Table 17 illustrates the extent to which females stereotype occupations for males over the two years under study. The results presented demonstrate that all the listed occupations were seen as suitable for males, with percentages consistently higher than 65%. Generally, gender stereotyping appears to remain stable over time with a slight decrease noted in gender stereotyping as the percentage of “yes” responses increased for Hairdresser, Pop Singer, Nurse and Secretary.

All the females reported that the occupations of Fire Fighter, Author, Doctor, Police Officer, Teacher, TV Announcer, Lawyer, Bank Teller, and President were suitable for males over both years. A small percentage of females viewed the occupations of Hairdresser and Pop Singer as being unsuitable for males at age 15 years, however with no gender stereotypical perceptions evident in the final year for both these occupations. Although one female participant indicated at 16 years of age that a male cannot be a Chemist, no gender stereotypical perceptions were evident for this occupation at age 15 years. At age 15 years females perceived the occupation of Secretary to be particularly unsuitable for males with only 65.2% of females deeming this a suitable occupation for males. At age 15 years the
second most unsuitable occupation for males was that of a Nurse with only 69.6% of females deeming this a suitable occupation for males. Both these occupations were deemed consistently less suitable for males by the females across the two years. Nevertheless, a clear decrease in stereotypical perceptions is noted for these two occupations in the final year of the study.

Table 17
Extent to which Females Gender Stereotype Occupations for Males over Two Years

<table>
<thead>
<tr>
<th>Occupation</th>
<th>15 years</th>
<th></th>
<th></th>
<th>16 years</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Unsure</td>
<td>Yes</td>
<td>No</td>
<td>Unsure</td>
</tr>
<tr>
<td>Fire Fighter</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hairdresser</td>
<td>95.7</td>
<td>4.3</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pop Singer</td>
<td>95.7</td>
<td>4.3</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Author</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Doctor</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chemist</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>95.7</td>
<td>4.3</td>
<td>0</td>
</tr>
<tr>
<td>Nurse</td>
<td>69.6</td>
<td>26.1</td>
<td>4.3</td>
<td>78.3</td>
<td>21.7</td>
<td>0</td>
</tr>
<tr>
<td>Police Officer</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Teacher</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TV Announcer</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lawyer</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Secretary</td>
<td>65.2</td>
<td>34.8</td>
<td>0</td>
<td>78.3</td>
<td>21.7</td>
<td>0</td>
</tr>
<tr>
<td>Bank Teller</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>President</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Across both years, levels of occupational information were consistently high with no females expressing a lack of information regarding any occupations. In general, these results demonstrate that females perceived most occupations as being suitable for males, although there was some uncertainty regarding the occupations of Nurse and Secretary. Overall, gender stereotypical perceptions about occupations generally remained consistent and a decrease was noted in gender stereotypical perceptions regarding certain occupations.
Table 18

Chi-square: Extent to which Females Gender Stereotype Occupations for Males over Two Years

<table>
<thead>
<tr>
<th></th>
<th>Did not show signs of stereotyping</th>
<th>Showed signs of stereotyping</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>15 years</strong></td>
<td>13 (56.5%)</td>
<td>10 (43.5%)</td>
</tr>
<tr>
<td><strong>16 years</strong></td>
<td>16 (69.6%)</td>
<td>7 (30.4%)</td>
</tr>
</tbody>
</table>

(Chi$^2$(1) = 0.84, p = .359).

Table 18 indicates that 56.5% of females at age 15 years and 69.6% of females at age 16 years did not show signs of gender stereotyping. Fewer females showed signs of gender stereotyping at age 16 years. Table 18 further indicates that females tend to gender stereotype more towards males than towards their own gender. Thus, a gender bias seems to exist. The relation between year and gender stereotyping towards males was found to not be statistically significant (p = .359). In other words, females at age 15 years were as likely to show similar percentages of signs of gender stereotyping towards males as were females at age 16 years.

**Extent to which males gender stereotype occupations**

Table 19 provides percentages representing the extent to which the sample of males (n=20) stereotype occupations for other males over the two year period. Table 20 provides information on the statistical significance of these results. Table 21 reports the percentages that indicate the extent to which the sample of males gender stereotype occupations for females and Table 22 provides information on the statistical significance thereof.

Table 19 demonstrates that males perceived most occupations to be suitable for males, with the occupations of Fire Fighter, Hairdresser, Pop Singer, Author, Doctor, Chemist, Police Officer, Teacher, TV Announcer, Lawyer, Bank teller and President at the 100% level across both years.
### Table 19
Extent to which Males Gender Stereotype Occupations for Males over Two Years

<table>
<thead>
<tr>
<th>Occupation</th>
<th>15 years</th>
<th></th>
<th>16 years</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Unsure</td>
<td>Yes</td>
</tr>
<tr>
<td>Fire Fighter</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Hairdresser</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Pop Singer</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Author</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Doctor</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Chemist</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Nurse</td>
<td>90</td>
<td>10</td>
<td>0</td>
<td>95</td>
</tr>
<tr>
<td>Police Officer</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Teacher</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>TV Announcer</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Lawyer</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Secretary</td>
<td>90</td>
<td>10</td>
<td>0</td>
<td>85</td>
</tr>
<tr>
<td>Bank Teller</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>President</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

Similar to the sample of females, a small percentage of the male participants expressed uncertainty regarding the suitability of the occupations of Nurse and Secretary. However, percentages of “yes” answers were somewhat higher compared to the female sample. At age 15 years 90% of the males felt that Nursing was suited to the male gender whilst at 16 years this percentage increased to 95%. At age 15 years 90% of the males felt that the Secretarial occupation was suited to the male gender whilst at 16 years this percentage decreased to 85% as 5% of the males were unsure regarding their answer and 10% stated that males could not be Secretaries.

Generally, males’ gender stereotypical perceptions about the suitability of occupations for males remained stable. No males reported a lack of occupational information. Overall, these results show a high level of gender suitability and limited gender stereotyped views regarding the suitability of most occupations for males. Some males did however report
consistent uncertainty regarding the suitability of the occupations of Nurse and Secretary for other males.

Table 20

Chi-square: Extent to which Males Gender Stereotype Occupations for Males over Two Years

<table>
<thead>
<tr>
<th></th>
<th>Did not show signs of stereotyping</th>
<th>Showed signs of stereotyping</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>15 years</strong></td>
<td>17 (85%)</td>
<td>3 (15%)</td>
</tr>
<tr>
<td><strong>16 years</strong></td>
<td>17 (85%)</td>
<td>3 (15%)</td>
</tr>
</tbody>
</table>

(Chi^2(1) = 0.00, p = 1.000).

Table 20 indicates that 85% of males at age 15 and 16 years did not show signs of occupational gender stereotyping towards males. Males remained consistent regarding their gender stereotyping perceptions over time. The relation between age and gender stereotyping towards males was not statistically significant, (p = 1.000). In other words, males at age 15 years were as likely to show similar percentages of occupational gender stereotyping towards males as were males at age 16 years.

Similar results were reported for males’ gender perceptions of occupations for females. These can be seen in Table 21 which presents the extent to which males hold gender stereotypical perceptions regarding occupations for females. This table demonstrates that males view the majority of listed occupations as being suitable for females, with the occupations of Hairdresser, Pop Singer, Author, Doctor, Chemist, Teacher, TV Announcer, Secretary and Bank Teller being consistently recorded at the 100% level.

At age 15 years, 10% of males viewed the occupations of Fire Fighter and President as being unsuitable for females. By age 16 years only 5% of males viewed the occupation of Fire Fighter as being unsuitable for females, whereas 100% of males viewed the occupation of President as being suitable for females. At age 15 years, 5% of males viewed the
occupations of Nurse, Police Officer and Lawyer as being unsuitable for females. By age 16 years 100% of males viewed these occupations as being suitable for females. No males reported a lack of occupational information.

Table 21

Extent to which Males Gender Stereotype Occupations for Females over Two Years

<table>
<thead>
<tr>
<th>Occupation</th>
<th>15 years</th>
<th></th>
<th></th>
<th>16 years</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Unsure</td>
<td>Yes</td>
<td>No</td>
<td>Unsure</td>
</tr>
<tr>
<td>Fire Fighter</td>
<td>90</td>
<td>10</td>
<td>0</td>
<td>95</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Hairdresser</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pop Singer</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Author</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Doctor</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chemist</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Nurse</td>
<td>95</td>
<td>5</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Police Officer</td>
<td>95</td>
<td>5</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Teacher</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TV Announcer</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lawyer</td>
<td>90</td>
<td>5</td>
<td>5</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Secretary</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bank Teller</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>President</td>
<td>90</td>
<td>10</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The results demonstrate an overall stability in the gender stereotypical perceptions held by males regarding occupations for females. The results also show an overall decrease in gender stereotypical perceptions over time with eleven out of the twelve occupations recorded at the 100% level in the second year of the study. It seems males tend to gender stereotype less toward the opposite gender as compared to females.

Table 22 indicates that 85% of males did not show signs of gender stereotyping at age 15 years. By age 16 years gender stereotyping decreased by ten percent (i.e., 95%). The relation between year and gender stereotyping towards females was of statistical significance.
(p = .482). In other words, males at age 16 years were less likely to show signs of gender stereotyping towards females as compared to males at age 15 years.

Table 22

Chi-square: Extent to which Males Gender Stereotype Occupations for Females over Two Years

<table>
<thead>
<tr>
<th></th>
<th>Did not show signs of stereotyping</th>
<th>Showed signs of stereotyping</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 years</td>
<td>17 (85%)</td>
<td>3 (15%)</td>
</tr>
<tr>
<td>16 years</td>
<td>19 (95%)</td>
<td>1 (5%)</td>
</tr>
</tbody>
</table>

(Chi²(1) = 0.50, p = .482).

In summary, these results show a high level of gender suitability and limited gender stereotyped views by males and females regarding the suitability of most occupations for males and females. Females and males at age 15 years were as likely to show similar percentiles of gender stereotyping towards females and males as were females and males at age 16 years. Generally, females may be more gender stereotyped towards males than towards their own gender. Males tended to be significantly less gender stereotyped towards females at age 16 years. In the next section of this chapter, the participants’ reflections on their own career development over the duration of the longitudinal research project are explored.

Adolescents’ Reflections on their own Career Development

The fourth and final aim of the current study was to explore and describe the participants’ reflections on their own career development throughout the course of the longitudinal study, starting when they were 6 years old. This was done by content analysing the responses from the last question of the CAQ, in which adolescents were reminded about and asked to reflect on the occupations they aspired to since the age of 6 years. Participants
were asked to provide reasons for their occupational aspirations and they were interviewed regarding their thoughts about how their occupational aspirations have developed over time. The interviewer then attempted to identify and clarify with the participants the occupational themes that emerged in their occupational aspirations over the years.

Only the reflections of the 16 year old participants were analysed as this allowed participants to reflect on the entire duration of the study to date. This also ensured that participants could reflect on their occupational aspirations across all of Gottfredson’s stages since these participants are currently in Gottfredson’s final stage of orientation to internal unique self. The results are presented in Tables 23, 24 and 25. It is noted that the 16 year old adolescents reflected on the reasons for their occupational aspirations from the perspective of their current developmental age. Thus the reasons they provide for an aspiration reflect their current stage of development and not the stage they were in at the time of aspiring to a particular occupation. Consequently, the reason a 16 year old gave for an aspiration held at age 6 will most likely be different from the reason given at age 6. However, it is interesting to note the extent to which the current reasons provided reflected particular stages of Gottfredson’s theory.

Table 23

Frequency Counts of Themed Reasons for Occupational Aspirations: Total Sample and Gender

<table>
<thead>
<tr>
<th>Reason</th>
<th>Total Sample</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure to Occupation through Media</td>
<td>13</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Exposure to Occupation/Professional</td>
<td>12</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Family Members influence</td>
<td>20</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Peer Influence</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Role Model Influence</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Childhood Dreams</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Personal Abilities</td>
<td>10</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Wanting to Help People or Animals</td>
<td>10</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Personal Interests</td>
<td>39</td>
<td>18</td>
<td>21</td>
</tr>
<tr>
<td>Economic Security and Wealth</td>
<td>9</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>
Table 23 presents a summary of the themes from the participants’ reflections on their own career development, illustrating the reasons for their occupational aspirations. This table differs from the results presented in Table 13 because the 16 year old participants were asked to look back on their aspirations over the past twelve years and to reflect on the reasons they had aspired to these occupations at the time. These results are presented for the sample as a whole and for females and males separately. Totals may add up to more than the number of adolescents due to several participants providing more than one reason.

The adolescents in the study most commonly identified personal interests as the reason for aspiring to the occupations that they had over the past twelve years. This was evident for the total sample as well as for females and males separately. The researcher confirmed Hunter’s (2009) previous finding that adolescents tended to identify their family members and parents as being influential in their occupational aspirations when they were younger. Table 23 does not reflect the ages at which certain factors were considered more important. The influence of family members nevertheless was indicated to be the second highest frequency as the adolescents attributed their occupational aspirations at a younger age to this influence. Exposure to the occupation through media was identified as the third greatest reason for aspiring to the occupations that these adolescents had over the past twelve years. It is clear however that this reason was selected as more prevalent in the female sample. This reason was followed closely by exposure to the occupation or professional in terms of popularity, with more females selecting this reason than males. Role model influence (i.e., influences other than parent or family influence, like teachers), peer influence and childhood dreams were found to exert relatively minimal influence on the current samples’ occupational aspirations over the years.
Table 24 is a summary of the themes identified from the participants’ reflections on how their occupational aspirations have developed or changed over the last twelve years. Themes are presented for the sample as a whole, as well as for males and females separately. Totals may add up to more than the total number of participants since some adolescents’ responses represented more than one theme.

Table 24

Frequency Counts of Themes for Changed Occupational Aspirations: Total Sample and Gender

<table>
<thead>
<tr>
<th>Theme</th>
<th>Total Sample</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gained Knowledge or Experience</td>
<td>12</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Interests Changed</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Increase in Self-Awareness</td>
<td>19</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Unsure or Could Not Explain</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>No Change in Career Thoughts</td>
<td>9</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

The majority of adolescents reported that their occupational aspirations had changed over the twelve years of the study and most were able to provide an explanation for these changes. Some participants (n=4), however, were unable to explain the reasons for changes in their occupational aspirations, with more males than females unable to explain the reasons for changes in their occupational aspirations. In some cases these adolescents gave reasons for the aspirations they selected rather than explaining how they had changed and developed. This implies that these results should be interpreted with caution since some adolescents may not have understood the reflective question correctly. Further, nine adolescents believed that their occupational thoughts had not changed over the duration of the study. This was confirmed in several cases by the mere fact that some adolescents continued to aspire to the same or similar occupations across all twelve years of the study. Most adolescents (n=19) attributed the changes in their occupational aspirations to an increase in self-awareness. Interestingly, male and female participants, relatively equally, identified increase in self-
awareness as the main reason for changed occupational aspirations. There was a larger number of females than males from a total of twelve participants who identified gained knowledge and experience as contributing towards the second largest reason for changes in their occupational aspirations. Six adolescents attributed their aspiration changes to changes in interest over the years.

Participants were asked during the interview if they could identify any commonality or shared themes across all the careers they had aspired to over the 12 years. Table 25 summarises the themes identified for the participants’ occupational aspirations. These themes are presented for the sample as a whole as well as for the males and females separately. Once again, some adolescents reported more than one theme implying that the totals may add up to more than the total number of participants.

Table 25
Frequency Counts of Occupational Themes for Occupational Aspirations: Total Sample and Gender

<table>
<thead>
<tr>
<th>Occupational Theme</th>
<th>Total Sample</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helping People and Medical</td>
<td>13</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Sports</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Business and Services</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Science, Engineering and IT</td>
<td>7</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Wildlife and Animals</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Music and Art</td>
<td>8</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>No Theme</td>
<td>10</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Themes could be identified for the majority of the adolescents. However, ten of the participants expressed such varied occupations over the twelve years that no occupational theme could be identified. Most adolescents aspired to occupations involving helping people or occupations in the medical field (n=13), with more females than males aspiring to this theme. The second and third most popular occupational themes identified only differed by
one frequency count. The second most popular occupational theme was for musical and artistic occupations (n=8), with more females than males aspiring to these occupations.

The third most popular occupational theme was for scientific, engineering and IT type occupations (n=7), with only males aspiring to this occupational theme. Scientific, engineering and IT type occupations fall into Holland’s Investigative typology which was found to be the most popular occupational typology over both years of the study. As with this theme, the Investigative category was also dominated by the male sample. The least popular occupational theme was for occupations involving wildlife and animals.

In summary, the adolescents most commonly identified personal interests as the reason for aspiring to the occupations that they identified over the past twelve years. Most adolescents attributed the changes in their occupational aspirations to an increase in self-awareness. Further, over the 12 years most adolescents aspired to occupations involving helping people or occupations in the medical field.

**Summary**

This chapter has reported on the results of the data from this longitudinal research study over a two year period. The results for the total sample as well as for each gender group have been described according to their occupational aspirations for both typology and status level as well as at an intra-individual level. The gender stereotypical perceptions of the participants were also explored. In the last section of this chapter adolescents’ reflections on the development of their occupational aspirations over the length of the longitudinal research were described. The results are discussed in the next chapter, along with a discussion of the limitations of the current study and recommendations for future research.
CHAPTER 6
Discussion

The results presented in Chapter 5 provide a context for this discussion which aims to describe the development of the occupational aspirations and perceptions of a sample of fifteen to sixteen year-old South African adolescents. This development was examined at a group and an individual level, with attention also focussed on possible differences between gender groups. Integrated into the discussion of these results are theories of adolescent development explored in Chapter 2 and major extant research findings discussed in Chapter 3. This chapter also highlights some of the limitations of the present study and makes recommendations for future research.

Chapter 6 is structured according to the overall aims of the study. The focus of the initial section of the chapter is on the interest typology of the adolescents’ occupational aspirations over time. The discussion then turns to the status levels of the adolescents’ occupational aspirations and their gender stereotypes of occupations. Lastly, the chapter takes into consideration the adolescents’ reflections on the development of their own occupational aspirations.

Occupation Aspiration Typology over Time

Adolescence is seen as a critical stage of development in which adolescents mature physically (Sadock & Sadock, 2007) and develop social, emotional and cognitive abilities (Craig & Baucum, 2002). Occupational aspirations and perceptions form a crucial part of this developmental stage. The development of occupational aspirations has been described both by adolescent and career development theories. The initial aim of this study was to explore and describe the occupational aspirations of the adolescents in terms of their interest typology over time. These findings will be discussed in relation to relevant adolescent and career development theories, as well as international and national research.
Adolescent Development Theory

The results of the present study provide some support for both adolescent development and career development theories. Piaget’s (1971, 1977) cognitive-development theory suggests that development occurs in an ordered sequence of qualitatively separate stages that increase in difficulty over time (Thomas, 2005). The participants in this study fell into Piaget’s formal operations stage (12 years of age and older). During this stage adolescents are able to form ideals and think realistically about the future (Cockcroft, 2002; Wood, 1998). Adolescents have the ability to apply logic and solve both abstract and concrete problems (Craig & Baucum, 2002). The formal operations stage is further characterised by the ability to contrast reality with what may or may not be and to consider possibilities (Craig & Baucum, 2002). Adolescents are also able to test and appraise hypotheses (Cockcroft, 2002) and plan for the future (Craig & Baucum, 2002) which is linked to Gottfredson’s (1981, 1996, 2002, 2005) theory of circumscription and compromise discussed later on in this section.

The findings of this study appear to support Piaget’s theory in that the adolescents demonstrated an ability to apply logical thinking about occupational aspirations. For instance, several adolescents attributed changes in their occupational aspirations to the fact that they had become more realistic when reflecting on their occupational aspiration development. The current longitudinal project and the present study have found that adolescents’ occupational aspirations become increasingly realistic over time. This is demonstrated by the discontinuation of the fantasy code as the longitudinal research progressed, since adolescents no longer aspired to fantasy type occupations. This perception is supported by international studies which conclude that occupational aspirations usually become more realistic and less fantasy-based over time (Hartung et al., 2005; Helwig, 2001). In particular, adolescents’ occupational aspirations tend to become progressively more consistent with their values,
interests and abilities (Hartung et al., 2005). Thus, the findings of the present study seem to provide support for Piaget’s theory of cognitive development.

Support is also found for Erikson’s psychosocial development theory (1963, 1993). The participants fell into Erikson’s *identity versus role confusion* stage (12 to 20 years) as indicated in Chapter 2. This developmental stage is characterised by the search for an identity (Craig & Baucum, 2002) or a sense of being at one with oneself as an adolescent grows and develops, as well as an affinity between the adolescent and his or her social roles and communities (Erikson, 1963). The findings of the present study indicate that adolescents consistently attributed their occupational choice to their interest and likes. This tendency has been increasingly evident throughout the longitudinal study, demonstrating a growing self-concept awareness from a young age (Hargreaves, 2007; Hunter, 2009). The results of this study offer some support for both national (Cox, 2004; Crause, 2006; Hargreaves, 2007; Hunter, 2009) and international (Francis, 2002; Super, 1990; Super et al., 1996; Zunker, 2006) theory and research indicating that self-concept development continues throughout adolescence.

The present participants appear to conform to several aspects of the adolescent development theories proposed by Piaget and Erikson. This implies that these theories may be applicable to South African adolescents in general. However, it should be noted that additional research on more diverse South African population groups is needed before these theories can be more generally applied with confidence. The finding that self-concept development continues throughout adolescence is helpful for the development of effective career education programmes in South African schools. Since the development of the self-concept is an important focus with regards to career development it should be incorporated into school career programmes as a means to support learners in making apt and realistic career choices (Hargreaves, 2007; Hunter, 2009).
Adolescent Career Development Theory

The findings of the present study also offer support for the career development theories of Super (1957; 1990; Super et al., 1996) and Gottfredson (1981, 1996, 2002, 2005), both of whom suggest that career development unfolds across the life span. Super considers the means by which adolescents choose particular paths in terms of their careers, whereas Gottfredson focuses on the process by which unsuitable occupational aspirations are identified and eliminated. Super’s theory places the present participants in the Exploration stage (14 years to approximately 25 years of age). During the Exploration stage adolescents begin to make specific and definite career decisions (Watson & Stead, 2006b). Adolescents investigate and look for a career path which they must translate into studying, training and searching for employment.

Support for Super’s theory is evident in the results of the present study. Adolescents were aware of what they needed to do in order to attain their occupational aspirations, with a number of adolescents able to explain the education and training required for their specific occupational aspiration. This increase in knowledge confirms Super’s theory regarding increasing specificity and application in the development of the adolescent’s self-concept. In this exploration process most adolescents identified family members as influencing their occupational aspirations. Exposure to occupations through the media, the occupation itself, or through a professional adult was also indicated as an important influence on adolescents’ occupational aspirations. These findings highlight the important role that these influences can play in adolescent career development. Thus, the importance of including role models in career education programmes and of educating parents as an integral aspect of career interventions has been noted by several authors (Helwig, 2008; McMahon et al., 2001; McMahon et al., 2000; Sharf, 2006; Wahl & Blackhurst, 2000). The findings of the present study reiterate this notion and emphasize the need for the inclusion of parental influence in
career programmes offered in South African schools. The influence of the media on adolescent occupational aspirations has also been noted by several authors (Hoffner et al., 2006; Signorielli, 1993; Van Den Bulck & Beullens, 2007). The findings of the present study highlight the need not only for accurate portrayals of occupations in the media, but also for career education programmes to educate adolescents about the training and study requirements of different occupations with the objective of assisting them in the effective implementation of a career choice.

Gottfredson (1981, 1996, 2002, 2005) proposes that self-concept development includes four progressive stages. The present participants fell into the fourth stage (14 years and older) known as the orientation to internal unique self stage which is characterised by increased introspection and development in terms of further self-awareness (Gottfredson, 2002; Sharf, 2006). Gottfredson argues that adolescents will aspire to an occupation according to their abilities, values, personality and needs, thus aspiring to occupations that are consistent with their internal unique sense of self. As indicated earlier, the present participants consistently attributed their occupational aspirations to interests and likes which provides support for Gottfredson’s theory. A decline in the identification of enjoyment and fun as reasons for occupational aspirations is also evident. This latter finding provides support for Gottfredson’s theory which proposes that by the fourth stage adolescents begin to circumscribe their occupational aspirations according to their values, abilities and needs, as compared to earlier stages where they aspired to an occupation due to the enjoyment thereof. In addition, an increase was noted in the number of participants attributing their occupational aspirations to their abilities at age 16 years. This corroborates Gottfredson’s theoretical proposition that adolescents in this stage will aspire to occupations according to their abilities.

Current research suggests that, while occupational interests change over time (Hartung et al., 2005), they become increasingly stable from adolescence onwards (Rojewski, 2007).
The findings of the current study indicate that there is increasing stability in terms of the present adolescents aspiring to the same occupational typology over time. Females were as likely to aspire to the same occupational type over time as were males. These findings support the career development theories of Super and Gottfredson. Super’s Exploration stage and Gottfredson’s stage of orientation to internal unique self indicate that adolescents most commonly begin to specify their career decisions at this stage. The following subsection will contextualise the results within the extant research reviewed in Chapter 3.

**Research**

The popularity of Investigative type occupations is a significant finding of the present study. Although this finding cannot be related to adolescent or career development theories (Hargreaves, 2007), it can nonetheless provide support for national and international research on occupational aspiration typologies. The following paragraphs describe some of the national and international research that is considered relevant to the present findings. Generally, the results of the present study suggest that the participants hold similar occupational aspirations to their international counterparts. Although the present sample is not representative of the greater South African population of 15 to 16 year old adolescents, similar trends have been found internationally with regards to adolescent occupational aspirations.

International research indicates that adolescents generally aspire to a small range of RIASEC occupational categories (Patton & Creed, 2007), a finding supported by the present study. Further, the female adolescents in the present study aspired to more Artistic and Social type occupations during the first year of the study, while in the second year they aspired more to Investigative and Artistic type occupations. Males consistently aspired to more Investigative type occupations than did females over the two years. International studies suggest that female adolescents tend to aspire to more Artistic, Social and Conventional
occupations, while boys aspire to more Realistic, Investigative and Enterprising occupations (Helwig, 1998; Lapan, Adams, Turner & Hinkelman, 2000; Meinster & Rose, 2001; Patton & Creed, 2007; Turner & Lapan, 2005). This study offers partial support for such international research in its finding that females tend to aspire to more Artistic and Social type occupations and males to more Investigative type occupations.

A number of international studies have demonstrated that adolescents hold less rigid gender occupational stereotypes compared to when they were younger (Helwig, 2008; Watson & McMahon, 2005). The present study offers partial support for such international findings in its finding that Investigative type occupations were particularly popular for female participants at age 16 years. Nevertheless, Hargreaves (2007) has argued that a lack of exposure to different types of occupational information may be a contributing factor to gender differences in occupational aspirations. School career development programmes that provide information about a large range of career types is likely to benefit adolescents in making informed and less gender stereotyped career decisions (Hunter, 2009).

The longitudinal project of which the present study forms a part has produced several national findings. An important finding of the present study, as with previous studies within this longitudinal project (Cox, 2004; Crause, 2006; Dean, 2001; Hargreaves, 2007; Hunter, 2009; Olivier, 2004), was that Enterprising and Conventional type occupations were consistently the least popular occupational aspirations across the entire longitudinal project to date (Cox, 2004; Crause, 2006; Dean, 2001; Hargreaves, 2007; Olivier, 2004). While the present study confirms these findings, it also confirms Hunter’s (2009) findings (when the children were between 12 to 14 years) of an increase in the popularity of the Enterprising typology.
The second aim of this study was to explore and describe the occupational aspirations and perceptions of the adolescents with regards to their status level. The following section thus focuses on a discussion of the findings for this aim.

**Occupational Aspiration Status Level over Time**

The results of the present study pertaining to the status level of the participants’ occupational aspirations can be considered within the framework of adolescent development theories. During Erikson’s (1963, 1993) identity versus role confusion stage the influence of peers and the social context is emphasised (Craig & Baucum, 2002). High status occupations were consistently aspired to by most of the participants over the two years. Generally, international research indicates that adolescents from higher socioeconomic status backgrounds aspire to more prestigious occupations as compared to adolescents from lower socioeconomic status (Rojewski, 2007). Thus, this finding may be attributed to the social setting of the participants who come from middle to upper socioeconomic status backgrounds. Such an interpretation however necessitates additional research on socioeconomic status and its influence on occupational aspirations as this finding could merely indicate that adolescents in the identity versus role confusion stage are inclined to aspire to high status occupations, despite their socioeconomic status due to the importance of the social context.

**Adolescent Career Development Theory**

With reference to career development theories, Gottfredson’s (1981, 1996, 2002, 2005) theory of circumscription and compromise is particularly relevant to this section of the discussion chapter. During Gottfredson’s third stage of orientation to social valuation (nine to 13 years) awareness of social class and the status of different occupations is highlighted, and prestige has a significant influence on occupational aspirations. The findings of the present study seem to indicate that the participants currently fall within the social valuation stage, in
their tendency to aspire to high status occupations. Helwig (2008) reported that, starting from the senior high school level, adolescents should shift away from high social value occupations to a more mixed set of occupations. Helwig suggested that this finding may be evidence of older adolescents choosing occupations that fit with their own personal characteristics and abilities, although this trend appeared at a somewhat later age than Gottfredson (2005) theorised. While the present adolescents seem to be moving into Gottfredson’s fourth stage (as discussed earlier in the chapter), it is argued that they have not yet moved out of stage three either (as made evident above). This finding supports Helwig’s finding in that the current age group seems to be in “transition” between the two stages, rather than definitely in stage four as Gottfredson’s theory proposes.

Hunter (2009) found that an increased number of participants in the final year of her study (aged 14 years) attributed their choice of occupation to financial status and recommended that this trend be tracked. Only a few participants involved in the current study indicated that financial status influenced their occupational aspirations, with this finding remaining consistent over time. It is argued that the influence of higher socioeconomic status backgrounds on the status level of occupational aspirations cannot be underestimated.

**Research**

Gender differences with regard to the status level of occupational aspirations have been researched extensively with varying results. The findings of the current study indicate no significant gender differences as the majority of males and females aspired to high status occupations. Similarly, an international study conducted by Helwig (1998) found that both males and females generally aspired to occupations involving higher educational levels. The latter findings support the current research. On the other hand, some international research has shown that male adolescents are more likely to aspire to moderate status occupations, while female adolescents are more likely to aspire to either high- or low-status occupations.
(Rojewski, 1996, 2005, 2007; Rojewski & Yang, 1997). While the finding that females are more likely to aspire to high status occupations would be supported by the present research, the finding that females are also more likely to aspire to low status occupations and that males are more likely to aspire to moderate status occupations is not supported by the current study. The present study found that occupational aspiration status levels remain high and stable over time. National research, although limited, would seem to support this finding. For instance, previous findings of this longitudinal project, including the findings of Crause (2006), Hargreaves (2007), Hunter (2009) and Olivier (2004), reported similar findings to those of the present study in this regard.

It is evident thus that career development theories, as well as previous national and international research offer support for the findings of the present study in terms of occupational status level. The role that the social context is hypothesised to play appears to be supported by the high status occupations aspired to by the present adolescents. This finding has significant implications for career education programmes, since adolescents aspiring to high status occupations need to be educated regarding the realistic implications of as well as the possible barriers to such aspirations (Hunter, 2009). The following section focuses on a discussion of the gender traditionality and gender stereotype perceptions of the participants with regard to their occupational aspirations.

*Gender Stereotyping of Occupations*

The third aim of this study was to explore and describe adolescents’ occupational perceptions in terms of gender stereotypes over a period of time. To date, the longitudinal project has found that these participants are mindful of gender perceptions that could influence their occupational aspirations. Gottfredson’s career development theory is seen as most appropriate to this section of the discussion chapter as her theory focuses on the way in which individuals choose occupations deemed appropriate to their own gender.
Adolescent Career Development Theory

During Gottfredson’s second stage of orientation to sex roles (six to eight years) children are said to circumscribe their occupations according to gender (Gottfredson, 2002, 2005). Cox (2004) studied this age group and found that children aspired to occupations traditionally held by their own gender and expressed gender stereotypical occupational perceptions. In Gottfredson’s third stage of orientation to social valuation (nine to 13 years) children have an increasing awareness of social and intellectual differences. Hargreaves (2007) and Hunter (2009) studied this age group and found that the influence of gender stereotyping on occupational aspirations decreases over time. Gottfredson’s fourth stage of orientation to the internal unique self (14 years and above) proposes that adolescents choose a preferred occupation from the remaining alternatives. These occupations should be compatible with how adolescents see themselves. Hunter (2009) also studied children who fell within this stage and found that the participants’ occupational aspirations and perceptions were shaped more by their internal unique self than by gender perceptions (i.e., Gottfredson’s second stage). The present participants fall within Gottfredson’s fourth stage and the findings suggest that the participants’ occupational aspirations and perceptions are influenced more by their internal unique self than by gender perceptions. This is evidenced in the minimal indications of gender stereotyping expressed. The results of the present study further demonstrate consistency with regard to a lack of occupational gender stereotypical perceptions over time.

A comparison between the male and female participants did, however, reveal some variation. The female participants remained consistent in their gender stereotyping regarding occupations seen as appropriate for themselves, although, it should be noted that gender stereotyping was minimal in this regard. For instance, in terms of occupations seen as appropriate for males, signs of gender stereotyping were slightly higher as compared to
occupations seen as appropriate for females. Although most females regarded the majority of occupations as being acceptable for males, traditional female occupations (for example, nurse and secretary) were nevertheless seen by a percentage of females as being inappropriate. Overall, a decrease in gender stereotyping was noted over time. An exception to the current findings is apparent in the final year of the study as a slight increase in gender stereotyping is noted with regards to females viewing the occupation of chemist as being inappropriate for males.

A minority of males too viewed the occupations of nurse and secretary as being inappropriate for themselves. A decrease in these perceptions was noted with regards to the occupation of nurse, however a slight decrease in gender stereotyping is noted with regards to the occupation of secretary. Overall, the majority of the male participants remained consistent in their gender stereotyping regarding occupations seen as appropriate for themselves. Further, a decrease was seen in males’ gender stereotypical views in terms of occupations seen as appropriate for females. It is important to note that the relation between age and gender stereotyping of males concerning females was the only statistically significant finding in the present study. In other words, males were less likely to show signs of gender stereotyping towards females over time. Overall, males and females either remained consistent or became increasingly less stereotyped in their occupational gender perceptions over time. Previous studies in the present longitudinal project found that younger individuals tended to become less gender stereotyped in their occupational perceptions over time (Cox, 2004; Dean, 2001; Crause, 2006; Hunter, 2009; Olivier, 2004).

Research

Some support for the above findings can be found in international research. A number of studies have demonstrated that adolescents hold less rigid gender occupational stereotypes compared to when they were younger (Helwig, 2008; Watson & McMahon, 2005). This
decline in occupational gender stereotyping is attributed to changing social norms and the resultant socialisation of adolescents. These shifts may have changed the nature of occupational gender stereotypes, meaning that adolescents may now hold fewer occupational gender stereotypes.

It should be noted here that, while international studies have reported mixed findings concerning occupational gender stereotyping, previous studies in this longitudinal project have found females to be more gender stereotyped than males (Cox, 2004; Crause, 2006; Dean, 2001; Hargreaves, 2007). Hargreaves (2007) argued that this trend indicates that females are likely to circumscribe their occupations at an early age which may account for the lack of females working in technological, scientific, mathematical and engineering occupations (Furlong & Biggart, 1999; Schoon, 2001). Hunter (2009) found females to be more gender stereotyped than males although such differences were not large. The findings of the present study support Hunter’s findings.

Research has revealed mixed results with regards to whether occupational gender stereotypes decrease or remain stable over time (Furlong & Biggart, 1999). Previous studies in this longitudinal study have noted a consistent decrease in the extent to which these participants hold gender stereotyped views. The current study partly supports this trend in terms of gender stereotyping of occupations towards the opposite gender. Gender stereotyping of occupations towards the same gender, although minimal, seems to remain stable over time.

With regards to gender traditionality the current study found that both males and females predominantly viewed traditionally female dominated occupations (i.e., nurse and secretary) as being appropriate occupations for males. Further, males and females predominantly viewed traditionally male occupations (i.e., fire fighter) as being suitable for females. These non-traditional gender perceptions seemed to increase over time. Previous
researchers within this longitudinal research project, such as Hargreaves (2007) and Hunter (2009), found that their participants held similar gender traditional perceptions regarding occupations. The section that follows discusses the findings regarding the adolescents’ reflections on their own career development.

Adolescents’ Reflections on their Occupational Aspiration Development

The final aim of the present study was to explore and describe adolescents’ reflections on their own occupational aspiration development. The reflection question was added to the Career Awareness Questionnaire (CAQ) five years ago as a means to gain insight into how adolescents experience their own occupational aspiration development.

Adolescent Development Theory

The current participants fall within Piaget’s (1971, 1997) formal operations stage. Improved abstract thinking and the use of metacognitive skills (i.e., the ability to think about one’s own mental processes) characterises cognitive progression at this stage (Cockcroft, 2002). The themes extracted from a content analysis of the participants’ reflections demonstrate their developing cognitive abilities and are supportive of Piaget’s theory. The findings of this study suggest that the participants were able to reflect on the thought processes that had led to the occupational aspirations they had made over the duration of the longitudinal project.

The current participants also fall within Erikson’s identity versus role confusion stage (12 to 20 years). During this stage adolescents develop their identities in various aspects of self-development. The concept of identity indicates a sense of being at one with oneself as an individual grows and develops, as well as an affinity between individuals and their social roles and communities (Erikson, 1963, 1993). Erikson’s theory is supported by the findings of the present study, specifically with regards to the search for identity. This is reflected in the finding that most adolescents in the present study attributed the reasons for selecting an
occupation to their personal interests. Most adolescents also indicated that their occupational aspirations had changed over the years because they had become increasingly self aware, and gained knowledge and experience. The search for knowledge and experience may be an example of the means by which adolescents search for and establish their identities. It should be noted here that some support is offered for Gottfredson’s (2002, 2005) theory. As mentioned earlier, the adolescents in the present study aspire to high status careers and their reasons for this may reflect the orientation to internal unique self stage, Gottfredson’s fourth stage (14 years and above).

The findings concerning identity have important implications for career education as they indicate that adolescents’ occupational aspirations are influenced by self-knowledge. Thus, career education programmes for adolescents in this developmental stage should include activities that promote self-awareness. Career education programmes should also incorporate more complex cognitive activities and experiences as the adolescents in this study seem to conform to Piaget’s formal operational stage.

The 16 year old adolescents in the current study reflected on their reasons for their occupational aspirations over the past twelve years, reflecting on their reasons from the perspective of their current age and developmental stage. Thus, their reflections on why they chose a particular occupation at the age of 6 years may not be the same as the reason that was expressed when they were 6 years old. Nevertheless, the present participants attributed a number of their earlier occupational aspirations to the influence of family members. This finding is consistent with Erikson’s theory, in that, family members are influential in adolescents’ lives.

Research

International research suggests that family influence, especially parental influence, is an important influence on adolescent occupational aspirations (Whiston & Keller, 2004). On the
other hand, some international research also suggests that, as children grow older, their peers become more influential with regards to their occupational aspiration development (Seligman, Weinstock & Heflin, 1991). The present study found that adolescents did not perceive peers as exerting a major influence on their occupational aspirations. While it is acknowledged that peers may indirectly influence occupational aspirations (i.e. in terms of status and gender stereotypes), the present study finds limited support for the increasing influence of peers.

International research suggests that media (i.e., television and movies) of people at work generally influences adolescents’ occupational aspirations (Hoffner et al., 2006). The present study found that exposure to an occupation through the media has an influence on adolescent occupational aspiration development. Further, international research recognises that other social factors, such as direct exposure to an occupation or a professional individual, influences occupational aspirations (Patton & McMahon, 1999; Schoon, 2001). The current study found that direct exposure to an occupation through these various influences has a considerable impact on occupational aspiration development. These finding have important implications for career education as they indicate that adolescents’ occupational aspirations are influenced by social influences such as the media and direct exposure to an occupation or a professional role model. It is suggested that school career education programmes for adolescents utilise these more external systemic influences in the design of effective career interventions.

Adolescents tend to become increasingly aware of personal and environmental obstructions that restrict the attainment of their initial occupational aspirations (Gottfredson, 2002). Further, as adolescents develop in terms of their career maturity (i.e., their readiness to make an effective and appropriate career decision), they start to consider their interests, abilities and values in forming their occupational aspirations (Super, 1990). The current
participants perceived their interests and abilities as influencing their occupational aspirations, with most adolescents attributing their occupational aspirations to their interests and likes. In addition, most of the 16 year old adolescents attributed changes in their occupational aspirations over time to increases in their self awareness, as well as to the fact that they had become more realistic and more aware of environmental obstacles. For example, some participants recognised the high level of skill and extensive education required for some occupations as a limitation. It is thus recommended that career education programmes could usefully incorporate activities and experiences that develop the interests and abilities of adolescents in order to provide them with a wider range of occupations to aspire to. Further, in order to aid a realistic circumscription process it is recommended that career education programmes provide extensive occupational knowledge to adolescents. The final section of this chapter discusses the limitations of the present study as well as recommendations for future research.

Limitations and Recommendations

This study has explored and described the development of the occupational aspirations and perceptions of a sample of 15 to 16 year old South African adolescents. The limitations to this study need however to be explored. In terms of the research methodology, this quantitative study made use of an exploratory-descriptive design and, while such a design was useful and appropriate, it also limits the current study. For instance, an exploratory-descriptive design does not allow for the control of extraneous variables and it does not allow for definitive answers (Neuman, 2006; Struwig & Stead, 2001). In the current study the influence of parental guidance or potential preparation of adolescents before the interviews were extraneous variables that could not be accounted for. Further, the ability of the interviewers to build rapport with the participants could not be controlled for. These extraneous variables have consistently been recognised by previous studies in this
longitudinal project (Cox, 2004; Crause, 2006; Dean, 2001; Hargreaves, 2007; Hunter, 2009; Olivier, 2004). However, attempts were made in the current study to reduce the effects of these extraneous variables (as with previous studies) by requesting that parents not prepare their children and by training and assessing interviewers before conducting the interviews.

In addition, it was queried by Hargreaves (2007) whether asking participants about their occupational aspirations would impact on their answers over a period of time. Participants were likely to consider their occupational thinking over time since they were asked to reflect on their aspirations. This possibly gave these participants an advantage over the general population. This is however not considered a significant limitation since the aim of the study was not to generalise findings to the broader population (Hargreaves, 2007).

It could be argued that a limitation of the present study is the fact that the findings are not generalisable. A variety of reasons substantiate this limitation, such as the use of non-probability, purposive sampling which does not allow for findings to be generalised to the broader South African population. This, in turn, would reduce the external validity of the present study. The majority of the present sample represented middle and upper socioeconomic families which further limits the generalisability of the findings. Unfortunately, this limitation cannot be addressed due to the nature of longitudinal studies. It is suggested nevertheless that future South African studies of a longitudinal nature should take this limitation into account. On the other hand, a homogeneous socioeconomic sample allows for comparison with international research findings as most research of a similar nature has been conducted on adolescents of similar socioeconomic status levels.

As a means to reinvigorate the study of adolescent career development, there have been calls for more research which is longitudinal in nature (Hartung et al., 2005; Patton & Skorikov, 2007). However, longitudinal research presents certain limitations. With regards to this longitudinal project, its complexity and high cost implications is considered a limitation.
Cox (2004), Crause (2006), Dean (2001), Hargreaves (2007), Hunter (2009) and Olivier (2004), earlier researchers in the longitudinal project, have all recognized these limitations. Further, a significant limitation of longitudinal research is that of the attrition rate of the sample. Hunter (2009) found that some participants reported becoming tired of responding to the same questions every year. Although this has not proved to be true for the current study, it is suggested that future researchers take the attrition rate and the other concerns mentioned into consideration (Hunter, 2009).

Hargreaves (2007) and Hunter (2009) suggest that methodological changes to the current process of data collection be implemented due to the smaller sample size, with the study employing a more qualitative approach in the future. Crause (2006) suggests that unstructured interviews be incorporated and that the data collection process be adjusted according to Super’s life-span life-space theory in which the client is seen as an active agent in their own career development (Super et al., 1996). Savickas (1997; 2002b, 2005) suggests a similar idea in his career construction theory in which individuals are seen to construct their own career identity and thus contribute significantly to their own career development. However, it is argued that due to the longitudinal nature of this study uniformity and consistency in terms of the data collection methodology should be maintained. Thus, if the data collection method is changed considerably in future studies, they will no longer be regarded as part of the larger longitudinal project.

A further possible methodological limitation concerns the reflection question of the CAQ in which adolescents are asked to reflect on the reasons for their occupational aspirations over the past twelve years. The majority of the adolescents reflected on their reasons from the perspective of their current age and developmental stage and not on why they aspired to a particular occupational aspiration at the time, as mentioned previously. Hunter (2009) recommended that future studies rephrase the question and ask adolescents if
they can recall why they aspired to each occupation at that time. Nevertheless, the present researcher would argue that the participants will still be looking back from the perspective of their current age and developmental stage.

As already discussed, race and socioeconomic status factors have not been considered in the current study as these factors could not be examined within the scope of the present longitudinal project. Future recommendations are made in this regard with the intention of making it possible to generalise these results to the diverse South African population. Hargreaves (2007) recommends that individuals of lower socio-economic standing, as well as individuals from Indian, black and coloured racial groupings be incorporated in such studies. Schultheiss (2008) highlights the value of focusing career development research on different socio-economic and racial groupings. The inclusion of diverse groups may allow for the generalisability of the current findings since the sample will be more representative of the South African population. While this limitation is generally acknowledged, the researcher however needs to stay with the sample of origin due to the nature of longitudinal research.

The South African education system is also referred to with regards to recommendations. Cox (2004) initially referred to the Life Skills/Life Orientation learning area which is now a compulsory school subject. Controversy has characterised the validity of this learning area due to the lack of research conducted prior to its implementation. The present study, along with the larger longitudinal project, anticipates the provision of baseline information that can be used in the development of effective and appropriate career education programmes within the Life Skills/Life Orientation subject area. Hunter (2009) recommended that future studies continue to build on this baseline information, as does the current study.

**Conclusion**

The current study has aimed to explore the occupational aspiration development of South African adolescents between the ages of 15 and 16 years. The need for longitudinal
research on adolescents has been deemed vital in order to gain a meaningful understanding of their career development (Helwig, 2008). In addition, the lack of research attention given to South African adolescents has meant that Western theories have been applied indiscriminately to South African adolescents (Stead, 1996; Stead & Watson, 2006).

Although the results of the present study cannot be generalised to the wider South African population, they can be applied successfully to populations similar to the one in the current study. This longitudinal project comprises of a homogenous sample of females and males who have been interviewed over the past twelve years. The aim of the researchers involved in this project has been to follow these individuals until they have finished high school. This study ought to offer important baseline information on which further research can be conducted and on which career education programmes can be based, should the attrition rate remain stable.

As already mentioned, it is vital that career education programmes are based on research findings. In this regard, it has been proposed that research into the career development of adolescents should be related to the educational curriculum (Schultheiss, 2008). The current study has found support for existing adolescent and career development theories and it has offered recommendations for the development of career education programmes. It is expected that the current study, along with the larger longitudinal project of which it is a part, will encourage further research in the field of adolescent career development. It is hoped that further research could stimulate the development of appropriate and contextually relevant developmental theories and career interventions.
REFERENCES


Dean, L. K. (2001). *A longitudinal study of the career aspirations and perceptions of four to eight-year old South African children.* Unpublished master’s treatise, University of Port Elizabeth, Port Elizabeth, South Africa.


Biographical Information & Consent Form
(Administered at the start of the larger longitudinal project)

Name of Child:__________________________________ Age:_________________
School:________________________________________ Gender:_______________
Parent’s Name:_______________________________________________________
Address:___________________________________________________________________________
Contact telephone numbers:______________ (home) ________________ (work)

Father’s/ Male Custodian’s occupation
a) Place of employment

__________________________________________

b) What type of work do you do?

__________________________________________

Mother’s/ Female Custodian’s occupation
c) Place of employment

__________________________________________

d) What type of work do you do?

__________________________________________

Has your child expressed an interest in a particular occupation during the last year?
Yes ___________ No ___________
If yes, what occupation? ____________________________________________

I hereby grant permission for my child to take part in a career awareness study
conducted by postgraduate students in the Psychology Department of the Nelson Mandela Metropolitan University.

________________________________________
SIGNATURE OF THE PARENT

ALL INFORMATION SUPPLIED WILL BE TREATED AS BEING STRICTLY CONFIDENTIAL.
Appendix B

Biographical Information & Consent Form

Name of Child: _____________________________________________________________

School: _________________________________________________________________

Parent’s Name: __________________________________________________________

Postal Address: __________________________ Contact telephone numbers:

Home: __________________________ Work: __________________________

Cell: __________________________

Email Address: __________________________________________________________

Father’s/ Male Custodian’s occupation
a) Place of employment

b) What type of work do you do?

Mother’s/ Female Custodian’s occupation
c) Place of employment
d) What type of work do you do?

Has your child expressed an interest in a particular occupation during the last year?

Yes __________ No __________

If yes, what occupation?

____________________________________________________________________

I hereby grant permission for my child to take part in a career awareness study conducted
by postgraduate students in the Psychology Department of the Nelson Mandela
Metropolitan University.

SIGNATURE OF THE PARENT SIGNATURE OF THE CHILD

In addition I consent for my child to be interviewed on video should my child be willing to do
so. (In this video your child will be given the opportunity to review his/her career aspirations
over the past 12 years).

SIGNATURE OF THE PARENT SIGNATURE OF THE CHILD

ALL INFORMATION SUPPLIED WILL BE TREATED AS BEING STRICTLY
CONFIDENTIAL.
Appendix C

Parent’s Letter

Dear Sir/Madam

For the past few years your child has been part of a study that is investigating the career awareness and aspirations of children in the Nelson Mandela Metropole.

Although the results of the study have not yet been finalized, the research has attracted much national as well as international interest. Interim results of the study, which have involved your child, have been presented at congresses both locally and abroad. These interim results are available upon request.

Due to the continued interest in this research on South African children, we would like to continue to explore the career aspirations and perceptions of this same group of children over a number of years. We would very much like your child to continue to be part of this study.

The study would entail us contacting you annually in order to interview your child about his/her career aspirations and perceptions. Interviews may be conducted at your child’s school, if permitted, or in your home at your convenience. The length of the interview would be approximately 15 minutes.

If you are willing for your child to take part in this study, please be so kind as to complete the attached form and return it to us as soon as possible. You can post it to the psychology department at the university or fax it to (041) 583 5324. Without your assistance, this research would not be possible and your help in this regard is greatly appreciated. Please note that all information supplied will be treated as strictly confidential.

If you have any queries, please do not hesitate to contact us on (041) 504 2330.

Yours sincerely

Ms. J. Marshall

Prof. M. B. Watson
SUPERVISOR

Prof. C. D. Foxcroft
CO-SUPERVISOR
Appendix D

Career Awareness Questionnaire For Children
(Initial Interview Format)

Child’s name: .................  Age:...........  School:.................................

What would you like to be when you grow up?
......................................................................................................................

1. Please draw a picture of what you would like to be when you grow up.
Tell me about your picture.

What have you drawn?

What does a .......................... do?
......................................................................................................................

Why would you like to be a ........................?  
......................................................................................................................

Do you know what you have to do to become a ........................?  
......................................................................................................................

Who first told you about a ........................?  
Where did you first see a ........................?  
......................................................................................................................

2. What other types of work that grown ups do, do you know about?
   a) .............................................................................................................

   What does a .......................... do?  
   Where does a .......................... work?  
   How do you become a ..........................?  
   What else do you know about a ..........................?  
......................................................................................................................
b) .................................................................................................................................

What does a ................................ do? ..............................................................................
Where does a ................................. work? ...............................................................
How do you become a .......................? ...........................................................................
What else do you know about a ..........................................................

c) ........................................................................................................................................

What does a ................................. do? ..............................................................................
Where does a ................................. work? ...............................................................
How do you become a .......................? ...........................................................................
What else do you know about a ..........................................................

What type of work could boys/girls do? (opposite gender)
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4. (Before every question, first ask the child whether he/she knows what it is)

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Appendix E

Career Awareness Questionnaire For Children
(Revised Interview Format)

Child's name: ...................... Age:.......... School:......................

1. a) What would you like to be when you grow up?
                                                                                             
 b) What does a ........................ do?
                                                                                             
 c) Why would you like to be a ...............?
                                                                                             
 d) Do you know what you have to do to become a ...................?
                                                                                             
 e) Who first told you about a ...............?  
                                                                                             
 f) Where did you first see a ...............?  
                                                                                             
 g) What would make it easy for you to become a ...............?  
                                                                                             
 h) What would make it difficult for you to become a ...............?  
                                                                                             
2. Other than a ............... (from Question 1), what else would you like to be when you grow up?
                                                                                             
                                                                                             
3. Can you name other types of jobs grown ups do?
                                                                                             
                                                                                             
4. a) What are some jobs you think women can do?
                                                                                             
                                                                                             
                                                                                             
                                                                                             
                                                                                             
                                                                                             

b) What are some jobs you think women cannot do?

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c) What are some jobs you think men can do?

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d) What are some jobs you think men cannot do?

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e) What are some jobs you think both men and women can do?

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PLEASE TURN OVER
5. (Before every question, first ask the child if he/she knows what it is).

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<th>Knows what it is.</th>
<th>Yes</th>
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Appendix F

Career Awareness Questionnaire For Children

(As revised by Crause, 2006)

Child's name: .....................  Age:.........  School:.............................

1. a) What would you like to be when you grow up?

b) What does a .................... do?

c) Why would you like to be a ................?

d) Do you know what you have to do to become a ................?

e) Who first told you about a ................? ...........................................

f) Where did you first see a ................? ............................................

g) What would make it easy for you to become a ................?

h) What would make it difficult for you to become a ................?

2. Other than a ............... (from Question 1), what else would you like to be when you grow up?

3. Can you name other types of jobs grown ups do?

4. a) What are some jobs you think women can do?
b) What are some jobs you think women cannot do?

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c) What are some jobs you think men can do?

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d) What are some jobs you think men cannot do?

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e) What are some jobs you think both men and women can do?

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5. (Before every question, first ask the child if he/she knows what it is).

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<td>Could a girl be a bank teller when she is big?</td>
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<tr>
<td>Could a boy be a president when he is big?</td>
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<tr>
<td>Could a girl be a president when she is big?</td>
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</tbody>
</table>
Over the last seven years we have been talking to you about careers that you have been thinking about. Now here is a chance to look back at the careers you have thought about and to discuss them.

i) What do you think the reasons were for choosing each of these careers?

ii) Have your career thoughts changed over the last few years? Yes No

If yes, how have your career thoughts changed?

If no, how have your career thoughts stayed the same?

If the examiner can identify a theme, e.g. an interest in animals, all medical professions, art as a theme, etc., clarify with the child if this is accurate.

Ask if the child would to participate in the making of a short movie exploring their career aspiration development. Yes No
Appendix G

Career Awareness Questionnaire
(Revised version used in present study)

Child’s name: ………………………… Age:………… School:…………………………

1. a) What would you like to be when you grow up?
…………………………………………………………………………………………………………………………
b) What does a ……………………… do?
…………………………………………………………………………………………………………………………
c) Why would you like to be a …………………?
…………………………………………………………………………………………………………………………
d) Do you know what you have to do to become a ……………………?
…………………………………………………………………………………………………………………………
e) Who first told you about a ……………..? ………………………
f) Where did you first see a ……………?...……………………………..…………………………
g) What would make it easy for you to become a ……………….?
…………………………………………………………………………………………………………………………
h) What would make it difficult for you to become a ………………..?
…………………………………………………………………………………………………………………………

2. Other than a ……………. (from Question 1), what else would you like to be when you grow up?
…………………………………………………………………………………………………………………………
…………………………………………………………………………………………………………………………

3. Can you name other types of jobs grown ups do?
…………………………………………………………………………………………………………………………
…………………………………………………………………………………………………………………………
…………………………………………………………………………………………………………………………

4. a) What are some jobs you think women can do?
…………………………………………………………………………………………………………………………
…………………………………………………………………………………………………………………………
b) What are some jobs you think women cannot do?


c) What are some jobs you think men can do?


d) What are some jobs you think men cannot do?


e) What are some jobs you think both men and women can do?


PLEASE TURN OVER
6. (Before every question, first ask the child if he/she knows what it is).

<table>
<thead>
<tr>
<th></th>
<th>Knows what it is Y/N</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could a man be a fire-fighter?</td>
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<tr>
<td>Could a woman be a fire-fighter?</td>
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<tr>
<td>Could a man be a hairdresser?</td>
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<tr>
<td>Could a woman be a hairdresser?</td>
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<tr>
<td>Could a man be a pop singer?</td>
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<tr>
<td>Could a woman be a pop singer?</td>
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<tr>
<td>Could a man be an author (write stories/books)?</td>
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<tr>
<td>Could a woman be an author (write stories/books)?</td>
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<tr>
<td>Could a man be a doctor?</td>
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<td>Could a woman be a doctor?</td>
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<td>Could a man be a chemist?</td>
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<td>Could a woman be a chemist?</td>
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<tr>
<td>Could a man be a nurse?</td>
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<tr>
<td>Could a woman be a nurse?</td>
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<tr>
<td>Could a man be a police officer?</td>
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<tr>
<td>Could a woman be a police officer?</td>
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<tr>
<td>Could a man be a teacher?</td>
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<td>Could a woman be a teacher?</td>
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<tr>
<td>Could a man be a TV announcer?</td>
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<td>Could a woman be a TV announcer?</td>
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<td>Could a man be a lawyer?</td>
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<td>Could a woman be a lawyer?</td>
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<td>Could a man be a secretary?</td>
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<td>Could a woman be a secretary?</td>
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<td>Could a man be a bank teller?</td>
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<tr>
<td>Could a woman be a bank teller?</td>
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<tr>
<td>Could a man be a president?</td>
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<tr>
<td>Could a woman be a president?</td>
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</tbody>
</table>
Over the last twelve years we have been talking to you about careers that you have been thinking about. Now here is a chance to look back at the careers you have thought about and to discuss them.

<table>
<thead>
<tr>
<th>Occupational aspirations: Name</th>
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<tbody>
<tr>
<td>1998</td>
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<tr>
<td>2004</td>
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</tbody>
</table>

i) What do you think the reasons were for choosing each of these careers?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

ii) Have your careers thoughts changed over the last few years? **YES** **NO**

If yes, how have your career thoughts changed?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

If no, how have your career thoughts stayed the same?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
Can you see anything common or shared across all these careers?

If the examiner can identify a theme, e.g. an interest in animals, all medical professions, art as a theme, etc., clarify with the child if this is accurate.