A LONGITUDINAL STUDY OF THE OCCUPATIONAL ASPIRATIONS AND PERCEPTIONS OF NINE TO THIRTEEN YEAR-OLD SOUTH AFRICAN CHILDREN

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SUMMARY

While the field of career psychology has shifted its attention to the study of career development, the developmental stage of childhood has often been neglected. Similarly, there is an absence of career research of a longitudinal nature, despite consistent calls to focus more on longitudinal methods when studying career development. The present study forms part of an existing longitudinal project which investigates the career development of South African children. This study, initiated in 1998, attempts to explore the occupational aspirations and gender stereotypes of a group of 39 children in the Nelson Mandela Metropole. The results from this study will provide much needed baseline information on how South African children become aware of careers, as well as provide useful suggestions on how to develop career education syllabi, particularly within the Life Orientation curriculum. The present study aims to explore and describe the changes that may occur in the participants' occupational aspiration interest typology, status levels, and gender stereotypes over a five year period.

Both developmental and career developmental theories were used to provide a theoretical context from which the participants' career development could be explored. The study is quantitative in nature as it made use of semi-structured interviews and a biographical questionnaire in order to quantitatively transcribe the data. The questionnaire consisted of four broad questions which asked for information regarding the participants' occupational aspirations, how much information the participants had about the chosen occupation, the number of occupations the participants knew about, and the extent to which the participants held gender stereotypes regarding fourteen different occupations. Descriptive statistics were used to describe the findings of the data which had been coded according to Holland's typology of occupations. In addition, content analysis was performed to elicit themes regarding the participants' own reflections on their career development.

Results from the data analysis revealed that the majority of participants aspired to Social type occupations throughout the five years under study. Furthermore, most participants consistently aspired to high status occupations throughout the five years. Similar results were found for girls and boys. The results also demonstrated that the participants' gender stereotypes tended to decrease over time, particularly as their occupational information increased. Lastly, most children were able to reflect on their career development and attributed changes in their occupational aspirations to changes in their interests. The results from this study offer insight into the development of occupational aspirations and perceptions of South African children which can be used as a foundation for future research and which should be valuable in the development of relevant career education programmes for South African schools.

Key words: career development, gender stereotypes, occupational aspirations, occupational perceptions, children, longitudinal study

CHAPTER 1

Introduction

"What do you want to be when you grow up?" This simple question is so often asked throughout childhood and underscores the importance society has attributed to the world of work. One's career serves as a major source of personal identity and is often the first fact learnt about another in the course of social conversation. Research supports this sense of identity and has found that career satisfaction plays a significant role in the attainment of personal happiness (Sharf, 2006). This emphasises the importance of making an informed career choice. However, this is often a stressful responsibility and choosing a career is a decision that typically involves some doubt which is exacerbated by the awareness that one's career is often seen as a measure of one's standing in society (Gottfredson, 2005; Zunker, 2006). This pressure has meant that increasingly individuals seek assistance from professionals in order to make an informed career decision. Given the changing nature of work, this career decision is no longer a once off, static choice but rather a series of decisions made throughout one's lifespan.

The changes in the world of work have also increased the diversity of individuals entering career counselling and has spurred the career psychology field to consider more widely the impact of career issues across the lifespan as well as the many interrelated life roles an individual plays in an attempt to understand the individual as part of a complex social system (Zunker, 2006).

Career development is thus seen as a process which occurs throughout one's life time and which is impacted by the social, cultural, economic and political context in which it takes place. This is particularly important when studying career development in South Africa and international theories of career development need to be evaluated in the light of this country's unique context. Evaluating these theories could highlight important differences in the

development of South African children, which in turn could impact on the way childhood career development is understood in the South African context.

While career development theories have historically ignored childhood, recent career developmental literature has increasingly acknowledged the importance of childhood in the career developmental process (Sharf, 2002; Vondracek, 2001; Wahl & Blackhurst, 2000). Despite this renewed research interest in children's career development, little attention has been given to practical application, especially in school guidance and career awareness programmes. In addition, international studies on children's career development in early and middle childhood are still relatively few in number and the South African population has received even less attention (Olivier, 2004). What research does exist has highlighted the need for further exploration into the process of occupational aspiration development in South African children (Crause, 2006). The findings of Olivier (2004) and Crause (2006) emphasise the need for South African research that explores the career development and occupational aspirations of children which can be practically applied in the development of culturally relevant career awareness programmes. The present study aims to provide findings which can be utilised in the development of such programmes.

Another concern is that extant research in the South African career development field is largely cross-sectional in nature. While still valuable, this type of research does not adequately allow for an exploration of the process of career development. Thus, there is a need for longitudinal research on which the planning of suitable career education programmes for diverse South African populations can be based. The importance of longitudinal research in studying the career development of individuals has been demonstrated by many researchers (e.g., Betz, 2001; Tracey, 2001; Savickas, 2002b) and has been found to aid in filling theoretical gaps in the career literature by providing data on

gender and developmental differences (Helwig, 1998c). This provides support for the methodology employed in the current study.

The value of career research in early childhood was first highlighted by Vondracek and Kirchner (1974) who studied career development in pre-school children. Later, the importance of researching the occupational aspirations of children was emphasised in a study by Trice and McClellan (1993) who found children's occupational aspirations to be the foundation on which they built their career development in later life. Such studies demonstrate the usefulness of studying the career development of children and provide some indication of the necessity of career awareness programmes with young children in order to ensure adequate career exploration (Isaacson & Brown, 1997; Sharf, 2006).

There are a number of factors that need to be considered when discussing the applicability of career education programmes in South Africa. The first is the theoretical underpinnings of such programmes. Research has shown that career development is considerably influenced by cross-national differences in the structure of education and work in different countries (Kirkpatrick & Mortimer, 2002). Despite this realisation, South Africa lacks theories that specifically describe career development within the context of its unique social, political and economic history. For this reason South African research has typically been grounded within the parameters of traditional Western career theories (Stead & Watson, 1998a; Stead & Watson, 2006), thus necessitating research which examines the applicability of these theories to the South African context.

Another factor that needs to be considered when developing career education and awareness programmes is the current economic climate in South Africa. South Africa's unemployment rate stands at 25.6%, with only 41.7% of the population catered for in the labour market (Stats SA, 2006). These dire statistics take on greater significance when one considers that most South African adolescents' occupational aspirations have been found to

be unrealistic and not market-related (Schonegevel, 1997; Watson, Foxcroft, Horn, & Stead, 1997). The trend for South African adolescents to choose non-market related occupations would result in even greater difficulty in finding meaningful employment. This in turn highlights the need to introduce appropriate career education programmes at the primary and secondary school level which adequately prepare children and adolescents for the realities of the South African economy. For this reason, career awareness programmes at the primary school level should have the broad goal of equipping children to make more appropriate choices at the high school and tertiary education levels that will likely impact on future career choices (Sharf, 2006). This goal reflects the findings of other studies in the present longitudinal research project which have reported that the successful implementation of career awareness programmes from an early age could be useful in more realistically reflecting South Africa's job market and employment trends (Dean, 2001). However, it is difficult to implement career education programmes in South African schools without relevant and valid research on which to base the content of these programmes. This highlights the importance of career development research, such as the present study, which can be used in developing applicable career education programmes.

Although economic considerations, employment trends and technological advances may seem beyond the scope of what young children should be taught in school-based career awareness programmes, childhood occupational aspirations have been found to be the precursors of adolescent and adult career choices. This has been highlighted by international longitudinal research studies which have provided evidence for the predictive validity of children's early occupational aspirations with regards to adult career choices (Trice, 1991; Trice & McClellan, 1993). Thus, by expanding children's occupational knowledge from childhood, one can help tomorrow's workforce make more realistic and market-related career choices.

The findings by Trice (1991) and Trice and McClellan (1993), discussed above, emphasise the importance of starting career education from an early age. Researchers have concluded that efforts need to be made to broaden the occupational aspirations of children before they enter secondary school (Bigler & Liben, 1999; Furlong & Biggart, 1999; McMahon, Gillies, & Carroll, 1999; McMahon & Patton, 1997). These researchers have emphasised the senior primary school years as a critical period for career awareness programmes that can foster career planning activities. Thus, research points to the importance of career education programmes that are informed by research for this age group. The need for valid research to use in the implementation of career education programmes can be understood as a primary motivation for the current study. For this reason it is important to identify what research says about such programmes. Although the career literature differentiates between career awareness programmes (those being offered at the primary school level) and career education programmes (those being offered at the secondary or high school level), this study will only make use of the more inclusive term career education programmes for both of these age groups.

Many researchers have called for school-based career education programmes to facilitate a number of aspects in the career development process. These include: challenging occupational gender stereotypes; helping parents to realise their role in their child's career development; and providing a learning environment where children can be educated regarding accurate occupational information (McMahon, Carroll, & Gillies, 2001; McMahon, Gillies, & Carroll, 2000; Wahl & Blackhurst, 2000). In addition, career awareness programmes at the primary school level should focus on equipping children to make more appropriate choices at the high school and tertiary education level (Sharf, 2006). Furthermore, Sharf (2006) proposes that successful career education programmes should

focus on concrete activities that allow children to model behaviour, provide children with key figures for role models, and which avoid gender-role stereotyping.

In order to achieve these outcomes, career education programmes need to consist of a number of different activities and they need to be structured in particular ways (Sharf, 2006). For example, they should include the presentation of occupational information in multiple data formats, using creative presentations, involving learners practically through skits, group activities and puzzles, and making use of community resources through excursions to different workplaces and exposure to different occupations.

Studies have shown that children benefit from enhanced career development and report lower levels of gender stereotypes as a direct result of the intervention of career awareness programmes in the senior primary school years (Bigler & Liben, 1999; McMahon, Gillies, & Carroll, 1999). These early career education programmes have been found to help the child make connections between school-based activities and the world of work and the use of such programmes throughout a child's school career has been shown to go a long way in providing learners with a platform from which to adequately explore careers (McMahon, Gillies, & Carroll, 2000; McMahon & Patton, 1997). Needless to say, these results provide further evidence for the usefulness of such programmes in South African schools.

However, it has been noted that career education programmes may need to have a different focus for male and female learners, with girls requiring greater input on strategies that increase their career information and planning skills (McMahon & Patton, 1997). This is likely due to the impact that differential socialisation practices have on boys and girls and the gender stereotypes that exist about suitable occupations for the different gender groups. Despite this, Sharf (2006) believes that children should be exposed to a number of different activities that are typical of both genders so as not to reinforce these gender stereotypes. By providing information and career exploration in such a non-biased fashion, an atmosphere

can be created that fosters a wide variety of occupational interests, regardless of gender.

This in turn could assist in reducing the effect of gender stereotypes on adult occupational

aspirations. Gottfredson's theory is particularly helpful in this regard as it reminds the

counsellor of the importance of providing occupational information that is not gender-biased

(Sharf, 2006).

Despite the numerous benefits of career education programmes discussed above and

their success internationally, career education programmes are severely lacking in South

African schools. There thus seems to be a discrepancy between the principles of career

development programmes, which emphasises their important role in schools, and their

practical implementation in this country, with few programmes actually in existence. This is

despite the efforts of the South African Department of Education which is currently

attempting to implement career education at an official level in the learning outcomes of all

South African children. This department has spearheaded recent transformations in the South

African education system and has introduced a new curriculum in South African schools,

known as Curriculum 21. Although this curriculum has seen numerous revisions since its

first introduction some years ago, it continues to introduce innovative changes, including the

introduction of a compulsory subject known as Life Orientation. The latter subject focuses

on life skills education and includes career education programmes for a primary and

secondary school level. Yet the launch of the new curriculum has not been without difficulty.

Career education, as part of the Curriculum 21 Outcomes Based Education (OBE)

policy, was introduced into the curriculum in order to broaden the South African child's

career exploration process. However, despite recent educational policy reform to include

career education as a key focus area in Curriculum 21, the introduction of career education

programmes has met with logistical problems (Cox, 2004), not the least of which are

inadequately resourced schools and the lack of qualified Life Orientation teachers. Swartz

(2000) found that career education programmes were largely absent at the primary school level and poorly delivered at the high school level. Clearly, the implementation of the new curriculum has met with numerous challenges and the current public perception of the new OBE system has largely been negative (Crause, 2006).

What makes the introduction of a formalised career education programme into the South African school curriculum even more difficult is the lack of research on the career development of South African children. Without a strong research base, the validity of the content of career programmes is called into question. What is more, the development of career education programmes is likely to continue to occur in isolation from sound career development research findings if South African research in the child career development field remains so sparse. This again emphasises the need for longitudinal research on which to base the planning of suitable career education programmes for diverse South African population groups. The current longitudinal study aims to provide relevant research which is sensitive to the unique South African context and which can aid the development of career curricula. This can be understood as the primary motivation for the present study.

The present study, as part of a larger longitudinal research project, aims to provide baseline information on the career development of nine to thirteen-year old South African children, with particular reference to their occupational aspirations and perceptions. The study aims to explore and describe the changes that may occur over a five-year period in terms of the children's occupational interest typology, occupational status levels, occupational gender stereotypes and occupational gender traditionality. The results may provide valuable information which could influence the future development of career education programmes in South African schools.

Our attention now turns to a brief outline of the present study. The current chapter provides an introduction to the study and outlines the context of the research. In addition, a

general overview of the treatise is provided and the purpose of each chapter highlighted. Chapter 2 describes the developmental and career developmental theories used as a foundation and context for the exploration of the occupational aspirations and perceptions of the participants. In Chapter 3, relevant international and national research is reviewed on the career development of children. This provides a basis from which to analyse the results of this study and discuss the findings. Chapter 4 outlines the research methodology of the present study, in which the research design, sampling technique, research measures, research procedure and data analysis used in conducting the research are elaborated on. Ethical considerations, as they pertain to the study, are also discussed. Chapter 5 describes the results of this study with reference to the possible changes over time in occupational aspiration typology, occupational aspiration status levels and occupational aspiration gender stereotypes of the participants. Chapter 6 discusses the results in relation to relevant literature and interprets the findings within the context of the developmental and career developmental studies discussed in Chapters 2 and 3. Chapter 6 also provides a discussion of the conclusions and limitations of the present study, while recommendations for future research are suggested. In the next chapter, pertinent developmental and career developmental theories will be examined as a further means to contextualise the findings of this study.

CHAPTER 2

Theory Review

In order to conceptualise this study, a theoretical framework is necessary and the field of developmental psychology provides such a reference point. Developmental psychology attempts to describe human development over the entire lifespan (Sharf, 2002), where human development refers to the orderly and enduring changes over time in the physical, emotional, neurological, and social spheres of an individual due to both environmental and biological influences (Craig & Baucum, 2002; Newcombe, 1996). Studying human development theories helps one to understand the various stages of growth and what constitutes normal development (Kaplan, Saddock, & Saddock, 2004), with specific developmental stages beginning and ending at stipulated ages and marked by particular characteristics, tasks, and skills that need to be developed (Craig & Baucum, 2002; Slater & Bremner, 2003).

Career development is increasingly being viewed as a lifelong process, with different aspects developing at different times across the lifespan. The development of these tasks, in turn, affects subsequent career choices (Dean, 2001). Thus, career development needs to be seen in the light of general human development and the career development of a child has been considered a critical aspect of a child's overall development (Helwig, 2004). The career development of children needs to be understood within the context of general child development. For these reasons a sound theoretical understanding of child development and career development as it pertains to children is necessary. This chapter will firstly discuss child development theory in general and specifically developmental tasks in middle childhood, before focusing more specifically on child career development. The theories of Piaget (1971, 1977) and Erikson (1963, 1993) are used to conceptualise the development of children from a cognitive and psychosocial perspective. Thereafter, Super's (1957, 1990; Super, Savickas, & Super, 1996) life-span, life-space theory and Gottfredson's (1981, 1996,

2002, 2005) theory of circumscription and compromise are discussed in order to better understand the career development of children.

Child Development Theory

Human development refers to the development of individuals across the lifespan, from conception to death (Craig & Baucum, 2002; Slater & Bremner, 2003). It involves the study of how individuals grow, change, or remain the same over the course of time. Although human development can be seen as a continuous process, it is helpful from a theoretical perspective to divide development into a number of stages. This is based on the assumption that critical events or tasks are faced by all individuals at specific times in their development (Craig & Baucum, 2002; Newcombe, 1996) and allows researchers to focus on specific life stages. It is important to remember, however, that individuals, even within the same stage of development, will progress at their own rate and that development varies from individual to individual (Newcombe, 1996).

Commonly identified stages in human development include (Craig & Baucum, 2002): prenatal development and birth; the neonatal phase (birth to 4 weeks); infancy (4 weeks to 2 years); early childhood (2 to 6 years); middle childhood (6 years to puberty); adolescence (puberty to 19 years); early adulthood (20 to 40 years); middle adulthood (40 to 60 years); and late adulthood (60 years to death).   As the present study focuses specifically on 9 to 13 year old children, this theoretical discussion will focus on the stage of middle childhood. Middle childhood begins at approximately 6 years of age and ends with the onset of puberty which, while it occurs at different ages for different individuals, is commonly understood to begin between the ages of 12 and 13 years.

Developmental tasks in middle childhood

Middle childhood is generally seen as a period of stability after the rapid development, particularly physical development, of the early childhood stage. This stage is

critical in the development of the child's cognitive, social, emotional and self-concept development (Kail & Cavanaugh, 2000; Slater & Bremner, 2003). It is a time for children to increase their understanding of the world, expand their social environments and learn from new experiences (Craig & Baucum, 2002). These stages of the lifespan are considered particularly important as they lay the foundation for what individuals will achieve in their adult lives and, as such, have important implications for future development.

Critical developmental tasks at this stage include: defining motor skills; strengthening gender identity; developing concrete operational thought and moving into formal operational thought. The development of scholastic skills and an increasing knowledge base, as well as broadening social participation and the acquisition of greater self-knowledge, are other important developmental tasks associated with middle childhood (Kail & Cavanaugh, 2000; Slater & Bremner, 2003). Lastly, the area of morality is developed as the child moves into the stage of preconventional morality in which the child will begin to obey rules in order to avoid punishment (Craig & Baucum, 2002; Slater & Bremner, 2003).

Two theorists who are renowned for their understanding of childhood developmental tasks are Piaget (1971, 1977) and Erikson (1963, 1993) who conceptualise childhood development from the cognitive and social perspectives respectively. It is from the viewpoint of these popular theories that the children in this study are initially contextualised and their development understood. These theories are discussed in more detail in the next two sub-sections.

Jean Piaget

The cognitive-developmental perspective, within which Piaget's (1971, 1977) theory is dominant, views development as an ordered sequence of qualitatively different stages that increase in complexity over time (Craig & Baucum, 2002). Piaget believed that the child is an active agent in the developmental process, with behaviour and development motivated by

largely intrinsic means (Wadsworth, 2004). Piaget viewed development as a sporadic

progression of phases marked by sudden changes from one developmental stage to the next

(Wadsworth, 2004).

Piaget's developmental periods

Piaget divided development into four major periods of growth, each with its own

specific characteristics and accomplishments (Cockcroft, 2002). These he termed the

sensorimotor period (0 to 2 years), the pre-operational period (2 to 7 years), the concrete

operational period (7 to 11 years), and the formal operational period (12 years to adulthood)

(Piaget, 1971). For the purpose of this study, the concrete operational period is most

relevant. However, many of the present children will be entering the formal operations

period towards the end of the developmental period under study, and hence this period is also

discussed.

The *concrete operational period* is characterised by the beginnings of the ability to

perform tasks that are directly related to objects. Piaget defined concrete operations as a

cognitive structure which is used to alter or operate on information (Newcombe, 1996). The

child is thus able to start thinking logically and to make use of a trial and error approach in

problem solving (Sigelman & Rider, 2003). Children of this age begin to understand

mathematical concepts when these are applied to concrete objects or events and to make use

of logical inference (Cockcroft, 2002). They also become aware that others have a

perspective different from their own (Craig & Baucum, 2002; Wadsworth, 2004) and their

thinking is no longer purely intuitive or egocentric. Furthermore, children become more

objective in their viewpoints and have a better understanding of how others see things (Craig

& Baucum, 2002; Sigelman & Rider, 2003).

Another characteristic of this stage includes the ability to engage in mentally

reversible operations (Cockcroft, 2002). This implies an understanding that taking a few

items away from a total can be reversed by adding those items back again (Sigelman & Rider, 2003; Wadsworth, 2004). Concrete operational thought is further evident in the use of decentration. This is a major characteristic of the concrete operational period and implies that children can focus their attention on several attributes of an object simultaneously and begin to understand the interrelations between dimensions of an object (Cockcroft, 2002; Newcombe, 1996; Slater & Bremner, 2003).

Piaget described the play of children of all ages by dividing the activities engaged in into different stages (Piaget, 1951). The type of play engaged in by children in the concrete operational stage is characterised by rules and constructional games which replace symbolism and mere imitation (Piaget, 1951, 1971). Children of this age engage more in role-playing activities and it is through these imitative and fantasy filled games that the child's interpersonal contact is fostered (Piaget, 1951). Piaget also believed that middle childhood is the start of the development of a child's gender identity (Olivier, 2004).

The *formal operations period*, which the present children in this study will enter towards the end of this study, is characterised by the ability to explore logical solutions to both concrete and abstract problems, to think realistically about the future, and to form ideals (Cockcroft, 2002; Wood, 1998). This stage is characterised by intellectual processing that is abstract and exploratory, as well as by an ability to think of possibilities and to compare reality with how things might or might not be (Cockcroft, 2002; Craig & Baucum, 2002; Sigelman & Rider, 2003). In this developmental stage children begin to think systematically, to project into the future or to recall the past, and to reason using analogy and metaphor (Craig & Baucum, 2002; Sigelman & Rider, 2003; Wadsworth, 2004). Formal operational thinking is no longer tied to concrete objects, as in concrete operational thought, and children are able to plan, think ahead and hypothesise (Cockcroft, 2002; Sigelman & Rider, 2003; Wadsworth, 2004). They are also able to manipulate variables in order to understand cause

and effect (Slater & Bremner, 2003) and to answer "what if" questions for the first time as their thinking matures (Craig & Baucum, 2002; Wadsworth, 2004). This leads to children in this stage becoming more sensitive to others and being able to handle contradiction (Wadsworth, 2004).

Formal operational thought is characterised as a second-order process (Craig & Baucum, 2002). Second order thinking involves metacognition, or thinking about one's thinking, looking for links between relationships and moving between reality and possibility (Cockcroft, 2002). First order thought, which the concrete operational stage falls into, involves thinking that aims to discover and examine relationships between objects (Cockcroft, 2002). While Piaget's theory helps us to understand the cognitive development of children, Erikson's theory emphasises psychosocial development in childhood. It is to Erikson that we now turn.

Erik Erikson

The psychoanalytic tradition, of which Erikson (1963, 1993) is a part, views development as deterministic in nature and personality as being motivated by specific drives (Craig & Baucum, 2002). Erikson divided development into eight psychosocial stages that span the lifetime (Craig & Baucum, 2002; Hook, 2002), within which the core concept of Erikson's (1963, 1993) theory is the acquisition of ego identity (Meyer, Moore, & Viljoen, 1997). Each stage of development is characterized by an overarching psychosocial crisis or developmental task which must be negotiated. Erikson believed that personality arises from the way the social conflict presented in each stage is resolved (Hook, 2002). Successful resolution leads to maturation and the individual moving on to the next developmental task. However, unsuccessful resolution leads to negative aspects being accepted by individuals that damage their ego identity (Hook, 2002). Successful resolution, however, does not imply choosing the more acceptable alternative, but rather in finding a fusion between the two

characteristics involved in the psychosocial crisis. Erikson also believed that successful resolution of earlier stages was important for successful resolution of later stages (Hook, 2002). Stages may run concurrently and can resurface at any time in life, yet it is more likely that specific stages, and hence conflicts, will be present at specific times in the individual's life (Meyer, Moore, & Viljoen, 1997).

Erikson's psychosocial stages

The eight psychosocial stages proposed by Erikson are (Craig & Baucum, 2002; Hook, 2002): the *oral-sensory* stage dealing with trust versus mistrust (birth to 1 year), the *muscular-anal* stage dealing with autonomy versus doubt (2 to 3 years), the *locomotor-genital* stage dealing with initiative versus guilt (4 to 5 years), the *latency* stage dealing with industry versus inferiority (6 to 11 years), the *adolescent* stage dealing with identity versus role confusion (12 to 18 years), *young adulthood* dealing with intimacy versus isolation (19 to 39 years), *adulthood* dealing with generativity versus stagnation (40 to 59 years), and the *maturity* stage dealing with ego-integrity versus despair (60 years onwards).

For the purposes of this study the fourth and fifth stages of Erikson's theory are the most relevant. The fourth stage of *latency* generally occurs between the ages of 6 and 11 years (Craig & Baucum, 2002). This stage is concerned chiefly with developing the ego strength of competence and it focuses on the conflict between industry and inferiority (Hook, 2002). In this stage, cultural and social expectations take precedence over other needs and the ability to master certain skills becomes paramount (Erikson, 1993). This conflict involves mastering appropriate social and cognitive skills in school such as reading, writing, getting along with peers and co-operation (Erikson, 1963). The individual's sense of self is enhanced by the development of these competencies and comparison with peers becomes progressively more important (Craig & Baucum, 2002). Friends become an extra-familial source of identification which then becomes an important part of the development of the child's

personality (Hook, 2002). Failure to master these skills would lead to feelings of inferiority as children constantly measure and compare their skill attainment to their peers (Hook, 2002; Sigelman & Rider, 2003). A child who masters industry feels competent and satisfied, while unsuccessful resolution leads to inferiority and feelings of worthlessness (Hook, 2002). Inferiority occurs when children perceive that they lack the importance or ability to cope with the social demands placed on them (Erikson, 1993).

Erikson's fifth stage occurs during *adolescence* (ages 12 to 18 years) and is concerned with the search for identity (Craig & Baucum, 2002). Adolescents achieve this sense of identity by defining who they are in terms of career, religion, sexual identity and values, deciding how they fit into society and looking to what lies ahead (Hook, 2002; Sigelman & Rider, 2003). The ego strength developed during this stage is that of trustworthiness and reliability (Craig & Baucum, 2002; Meyer, Moore, & Viljoen, 1997). Prior to this stage, the child is involved in a number of different roles. During adolescence, the task at hand is to sort out and integrate these various roles into a consistent identity (Hook, 2002). This is achieved by searching for consistent values and beliefs that are present in these various roles (Craig & Baucum, 2002; Hook, 2002). If the child can not successfully resolve the conflict this may result in role confusion and an inability to settle on a career or sexual orientation (Hook, 2002).

<div align="center">***Summary***</div>

Both Erikson and Piaget, while writing from different theoretical perspectives, share commonalities. The major tasks of middle childhood, irrespective of the theories used to conceptualise them, focus on the child's growing sense of competence, logic and objectivity. Children at this stage start to play by the rules, follow instructions and are eager to learn and do tasks independently. They start to understand that they are a part of systems they can not always influence, resulting in a decrease in ego-centricism. A growing sense of identity,

particularly in gender roles, stems from these developments and this has particular repercussions for the child's career development and ensuing occupational aspirations.

In later stages of middle childhood, children start to think more abstractly and realistically about their futures and to make plans in this regard. This leads to them becoming more sensitive to others and increasing importance is placed on socialising with other children and adolescents. Friends gradually become an important source through which skills are learnt and personal and social identities are formed. This is further influenced by integrating the various roles in a child's life and thus personality begins to crystallise. These developmental tasks have strong links to career development and are integral to moving the child towards making appropriate career choices. This once again emphasises the importance of placing career development within the larger sphere of general development.

While Erikson's and Piaget's developmental theories provide a broader context for understanding the type of developmental tasks required of children of the age bracket of the participants in the present study, these two theories do not provide an adequate explanation of the career development of children. This is discussed in the next section.

Career Development Theory

Increasingly, developmental psychology has emphasised that child development should be seen as holistic and include all aspects of a child's maturation. This would include an emphasis on the career development of the child which is considered critical to the complete education of the child (Helwig, 2004). Career development refers to the process of developing beliefs, values, skills, aptitudes, interests, personality characteristics and knowledge of work (Zunker, 2006). The development of these aspects occurs at different life stages and includes the broader realm of child development.

Career development theories, as with career psychology in general, have a relatively brief history and have evolved from predominantly trait and factor theories to more

developmental and lifespan orientated approaches (Schreuder & Theron, 1997). Career

development theories with lifespan orientations use constructs such as values, self-concepts

and thematic exploration to enrich trait and factor approaches. These developmental theories

view career choice not as a once off, static decision, but rather as a process that involves a

series of career-related decisions that are made over time and throughout one's lifespan

(Patton & McMahon, 1999, 2006).

In recent years there has been a move to adapt existing career theories in order to

account for changes in the field of career psychology (Savickas, 2002a, 2005). An example

of this is the adaptation of Super's lifespan, life-space theory into a post-modernist career

approach known as career construction theory (Savickas, 1997, 2002b, 2005). This

theoretical adaptation has attempted to relanguage Super's theory and places an emphasis on

the manner in which individuals' construct their own career in the light of the social and

environmental contexts in which they develop (Savickas, 2002a, 2005).

Despite these current trends and an increasing interest in understanding career

development across the lifespan, researchers have noted that little attention has been paid to

career development as it pertains to childhood (Hartung, Porfeli, & Vondracek, 2005; Tracey,

2001; Wahl & Blackhurst, 2000; Watson & McMahon, 2005). Indeed, while much attention

has been accorded to researching and integrating information about child development in

general, the specific area of the career development of children has not been adequately

addressed (Hartung, Porfeli, & Vondracek, 2005; Vondracek, 2001a; Watson & McMahon,

2005). However, as the present longitudinal study has shown, children do indeed report

occupational choices and these need to be addressed in research. To acquire a more specific

understanding of child career development, Super and Gottfredson's theories are described.

Super's (Super, 1957, 1990; Super, Savickas, & Super, 1996) influential life-span,

life-space theory offers a broader theoretical context for understanding career development in

nine to thirteen year-old South African children and has been one of the most influential of career development theories. Gottfredson's (1981, 1996, 2002, 2005) theory of circumscription, compromise and self-creation presents a specific description of how occupational aspirations develop in childhood, which is the specific focus of the present study and thus a useful and appropriate career theory to consider. It is important to contextualise and ground the present research within these two career development theories in order to interpret the results and achieve the objectives of this treatise.

At this point, the use of the terms career and occupation deserve some attention. Literature can be confusing in this regard, often using these terms synonymously. However, for the purposes of this study career is used in a broader sense, referring to the varying paths, tasks and roles associated with adult careers. Occupation is used to refer to the names of specific job titles. This is more relevant when discussing children, who typically name occupational aspirations and do not aspire to the wider range of roles and paths associated with careers.

Donald Super

One of the foremost career researchers of our time, Donald Super has had a considerable impact on the field of career psychology, most specifically in the area of career development. Yet Super's intention was never to develop a well integrated theory, but rather a series of segmental theories covering career development, self-concept development and life roles (Savickas, 1997; Super, Savickas, & Super, 1996; Watson & Stead, 2006). Super developed his career development theory, which is seen as a lifespan process over five development stages from childhood to retirement, over 40 years of research (Schreuder & Theron, 1997). His theory has moved the field of career psychology towards viewing work as one of many roles in an individual's life, and as a role which changes throughout life (Watson & Stead, 2006).

Lifespan, life-space theory

Super's lifespan, life-space theory (Super, 1957, 1990; Super, Savickas, & Super, 1996) views career development as the forming and implementing of self-concepts in occupational contexts (Langley, 1999) and the synthesis of these self-concepts within the context of social, economical and cultural factors (Schreuder & Theron, 1997). Super defines the self-concept as a "combination of biological characteristics, the social roles individuals play, and evaluations of the reactions other individuals have to the person" (Sharf, 2006, p.152). Super views the self-concept as the central construct in the career development process and regards career development as the continual process of improving the match between self and environmental determinants and involves a process of integration of the individual's social, economic and cultural reality with that of his own characteristics (Langley, 1999; Schreuder & Theron, 1997; Sharf, 2006). Super believed that a child's self concept develops by exploring and discovering their environment, objects and people in their environment. This leads to the child learning information that will be used as the basis for the development of the self-concept (Sharf, 2006).

The essence of Super's theory is contained in a list of propositions. This list of 10 original proposals has been modified in numerous revisions and expanded to 14 core propositions which now form the basis of Super's theory (Super, Savickas, & Super, 1996; Watson & Stead, 2006). In more recent years, these propositions have been content themed, with three propositions reflecting the differential (or differences in individuals' characteristics) segment of Super's theory; six propositions which focus on the self-concept, its application and development; two propositions which discuss Super's concept of career maturity; and three which describe the work role and life satisfaction (Watson & Stead, 2006). The three propositions that reflect the differential segment of Super's theory propose that there are differences in people (in terms of their abilities, values and personality traits)

and in occupational environments (in terms of the abilities and personality traits that particular occupations require). By virtue of these differences, people can fulfil a number of different occupations. This is similar to a trait-and-factor approach.

The next six propositions focus on the self-concept, its development and application to career choice. These principles suggest that the self-concept is shaped by a person's preferences, skills, and interests and that these will change over time. This process of change can be summed up in a series of life stages, with each stage being divided up into a number of developmental tasks. During the lifespan, a career pattern emerges which is determined by such factors as opportunity, socioeconomic status, skill, personality, and career maturity.

There are two further propositions that focus on Super's construct of career maturity. Career maturity is a psychosocial construct which measures how far a person has progressed in terms of the developmental tasks expected from the life-stage they are in. Development can be facilitated by encouraging the maturing of an individual's abilities and interests. The last three propositions describe the work role and life satisfaction. Super believes that work and life satisfaction depends on the extent to which individuals find an outlet for their abilities, needs, values, interests, traits and self-concepts. Furthermore, it is proposed that the degree of work satisfaction is proportionate to the degree a person has implemented their self-concepts (Super, Savickas, & Super, 1996; Watson & Stead, 2006).

Super's theory has a number of constructs that contribute to career development: the self concept, career maturity, career adaptability, values, life roles, life themes and cultural context (Langley, 1999). Career maturity refers to the readiness of the person to make a career choice. This construct is highly dependent on tasks specific for the relevant life stage the individual is in (Langley, 1999). Adaptability defines the individual's ability to master the integration of environmental challenges and a sense of identity while, at the same time, accepting one's limitations and learning new skills. It is also recognised that an individual's

values are important in career decisions and career development, and that values can change throughout an individual's lifetime (Langley, 1999).

Super (1990, 1994) defines a career as the changing pattern of life roles which increase and decrease in importance depending on the developmental tasks that need to be achieved as well as the ways chosen to accomplish them. According to Super (1994), each life-span stage can be understood by looking at the life-space it occupies, hence the name life-span life-space theory. This theory can be graphically represented in the Life Career Rainbow (see Figure 1) in which the two core aspects of this theory are represented, i.e. five life stages are represented in different segments around an arc, while the six potential life roles are represented by each band of the rainbow (Watson & Stead, 2006). The demarcated situational and personal determinants place Super's life career rainbow into the individual's unique context (Schreuder & Theron, 1997).
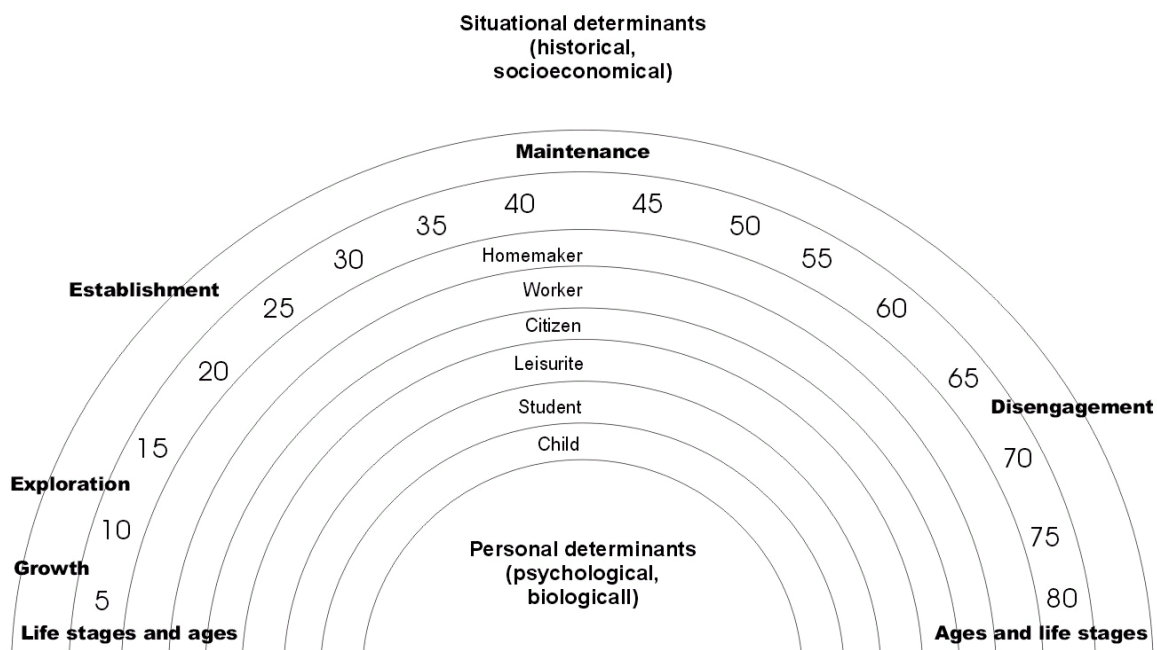
Figure 1: The Life Career Rainbow

Sourced from Super, Savickas & Super, 1996, p.127.

An individual's life is structured according to an arrangement of core and peripheral life roles, with Super identifying the core life roles as those of homemaker, citizen, leisurite, worker, student, and child (Super, 1990, 1994; Super, Savickas, & Super, 1996). Life roles interact, and multiple roles can enrich life or overload it (Super, Savickas, & Super, 1996). The structured pattern of life roles progresses through an orderly sequence of building and changing processes in which roles are redesigned (Super, Savickas, & Super, 1996). This accounts for the predictable changes in shape and the importance (or salience) of the different roles as an individual becomes older. Super believes that, in order to understand individuals' careers, one has to know and appreciate the network of life roles that individuals are involved with and how these influence their career concerns (Super, Savickas, & Super, 1996). Donald Super's life-span, life-space theory provides a broad picture of a person's life with its multiple roles, the factors that determine these roles, and how the different roles interact (Super, Savickas, & Super, 1996). These multiple roles of homemaker, citizen, student, worker, child and leisurite reciprocally shape each other.

Stages of career development

It is Super's application of the life-span segment of his theory that is of most relevance to this study. This segment focuses specifically on career development across the phases of an individual's life (Super, Savickas, & Super, 1996). Super's theory proposes that career development is a lifelong process which proceeds through five chronological career developmental stages: Growth (0 to 13 years), Exploration (14 to 24 years), Establishment (25 to 44 years), Maintenance (45 to 65 years), and Disengagement (64 years and onwards) (Sharf, 2002, 2006; Super, Savickas, & Super, 1996). It is during these five stages that Super's constructs, already described, are applied and developed (Langley, 1999; Watson & Stead, 2006). While the name for each period in the life-span corresponds to the major developmental task associated with that stage, each stage can be further delineated into a

sequence of three or four major developmental tasks (Super, Savickas, & Super, 1996). Sub-stages also exist within each major stage, further adding to the scope of each role (Sharf, 2002).

Children in the present study fall into Super's Growth stage, a stage in which they develop their self-concepts by interacting with the role models of adults around them (Schreuder & Theron, 1997). Role models include parents, teachers, public figures and media stars, and the people the children come into contact with in their daily lives (Sharf, 2006). The Growth stage can be delineated into four career developmental tasks (Langley, 1999; Super, Savickas, & Super, 1996; Watson & Stead, 2006). These tasks are: becoming concerned with the future, increasing personal control over one's life, convincing oneself to achieve in school and work, and developing competent work attitudes and habits.

The Growth stage is characterised by much physical and psychological change and can be further sub-divided into the sub-stages of curiosity (0 to 4 years), fantasy (4 to 7 years), interests (7 to 11 years) and capacities (11 to 14 years) (Schreuder & Theron, 1997). Sharf (2002, 2006) points out that children's self-concepts are greatly influenced by their curiosity which pushes children to explore their environment and leads to the attainment of occupational information, the imitation of role models, and the development of interests. It is through children's fantasies that they develop their interests and through their interests that they learn about their abilities, which in turn helps them to develop more realistic career interests (Sharf, 2002, 2006). The participants in this study fall into both the interest and capacity substages, which focus specifically on the development of occupational interests and competencies or abilities, learnt through activities and play. This development will start to form the child's career choices.

Career construction theory

Researchers have continued to research and refine Super's original theory. One researcher who has worked extensively in revising, expanding and reconstructing Super's theory in an attempt to create a more integrated theory, is Mark Savickas. Savickas (1997, 2002b, 2005) has termed his revision 'career construction theory'. As described by Savickas (2005, p.42), the career construction theory "updates and advances Super's seminal theory of vocational development for use in a multicultural society and global economy."

Career construction theory focuses on the importance of individuals' reflecting on their career behaviour, both objectively on actual events and subjectively on the meaning of these events (Watson & Stead, 2006). The theory adheres to the belief that the individual constructs representations of reality and it believes careers are constructed, not just unfolded (Savickas, 2002a, 2005). Much emphasis is placed on the contextualisation of the individual in his or her social environment, with career development being seen in the light of continuous adaptation to the individual's changing circumstances and not simply as a maturational process (Savickas, 1997, 2002b, 2005; Watson & Stead, 2006). This has led to Savickas (1997) suggesting that the concept of career adaptability is more appropriate than that of career maturity, and that it should even replace career maturity. In addition, Savickas (2005) has introduced the concept of life themes into his theory which concretises Super's proposition that individuals implement their self-concepts in making occupational choices.

Savickas (2002a) has also redefined Super's maintenance stage of career development as a management stage with the latter description more clearly denoting the adaptation that is necessary in managing the inevitable changes that occur at this stage of an individual's career (Watson & Stead, 2006). Furthermore, Savickas (2002b, 2005) has continued to reframe Super's 14 core theoretical propositions and added a further two propositions which highlight the concept of career adaptability and the ongoing nature of career construction.

Career construction theory asserts that a child's self-concept emerges from the interpersonal world that the child inhabits (Savickas, 2002a). Parents and role-models play a significant role in this process, as do the social networks, cultural expectations and status identity the child is exposed to. These constructs have a strong link to Linda Gottfredson's theory of circumscription and compromise, which is discussed later in this chapter. Savickas (2002b, 2005) describes in detail the role of developmental tasks in career construction theory. Only the Growth stage is focused on in the present discussion as this is the stage the participants fall into. This stage of career development is tasked with the formation of an occupational self-concept (Savickas, 2002a). Four major tasks of career development are delineated by society at this stage, each of which aids the formation of attitudes, beliefs and competencies necessary for the young person to construct their career (Savickas, 2002a). These tasks are a refinement of Super's earlier named tasks of: becoming concerned about one's future as a worker; increasing personal control over one's occupational activities; forming conceptions about how to make educational and occupational choices; and acquiring the confidence to make and implement these career choices (Savickas, 2002a).

Each of these tasks within Super's Growth stage follows from the successful resolution of the corresponding stage of psychosocial development in Erikson's theory and emphasises the importance of a child's play, the role of parents and other role models and the child's daily experiences (Savickas, 2002a). The overarching goal in career construction theory is to move towards a situation in which the occupational role fulfils and validates the person's occupational self concept (Savickas, 2002a, 2005).

Savickas believes that his refined career construction theory has made Super's theory a more integrated segmental model which incorporates modern developments (Savickas, 2002a). Career construction theory, with its emphasis on context and ongoing adaptability, should prove particularly important in the South African context, where social, cultural,

historical, political, environmental and systemic factors influence an individual's career choice and development.

Evaluation of Super's theory

The strength of Super's theory lies in its empirical findings, with research data generally supporting the model (Super, Savickas, & Super, 1996). This makes the theory flexible in both practice and research and it has provided career theorists with a well-ordered and clear description of the process of career development which has potential for both application and research (Hackett, Lent, & Greenhaus, 1991; Watson & Stead, 2006). Borgen (1991) also reviews Super's theory as one which has proven valuable in that new concepts and trends are compatible with it. Others have argued that Super's theory remains relevant to today's changing career context and is suitable for use with diverse cultures and populations (Marques, 2001; Savickas, 2001).

However, Super's theory has also met with criticism. Some researchers have felt that the core propositions are only a summary of a theory which lacks logical form and creativity (Super, Savickas, & Super, 1996). Other researchers have commented that the theory consists of segments which lack integration, and that this makes empirical assessment of the postulates difficult (Brown, 1996; Herr, 1997). Thus a further criticism is the lack of research that has used the propositions as a specific source of hypotheses (Salomone, 1996; Watson & Stead, 2006). Furthermore, Betz (1994) has criticised the lack of specificity of Super's definition of self-concept and found that there are operational problems with this notion. Fouad and Arbona (1994) have suggested that future research on the career task of developing an ethnic identity as it relates to Super's theory is necessary, as is further investigation into the contexts that impact on career development. Although research into Super's life stages has been sparse, it is frequently used as a theoretical base for research (Watson & Stead, 2006) as is the case with this study.

Despite such criticism, Super's constant revisions and open-mindedness have made

his theory one of flexibility and adaptability, a theory which has left a lasting impression on

the field of career development (Savickas, 1997). These characteristics have meant that

Super's theory can be applied across cultural variables as it acknowledges the influence of

such variables on the process of career development (Fouad & Arbona, 1994). Thus, this

theory can be seen as an appropriate choice for a broad theoretical framework for research on

career development in South Africa. The following subsection describes the second career

development theory chosen as a framework for the present study, that of Linda Gottfredson.

Linda Gottfredson

Gottfredson's (1981, 1996, 2002, 2005) theory of circumscription and compromise is

concerned with both the content of occupational aspirations and the course of their

development. Her life-stage theory of occupational aspiration development in childhood and

adolescence emphasises the importance that sex-roles and social prestige play in making

career choices, as well as the barriers that individuals face (Gottfredson, 2002; Sharf, 2002,

2006). Gottfredson has focused on the impact that factors such as intelligence,

socioeconomic status, gender, and race have in limiting one's career development in early

childhood (Stead & Watson, 2006). She believed that biological and environmental factors

influence each other and continue to do so throughout the individual's life. These factors

interact together, rather than forming two separate paths (Sharf, 2006). The theory is

concerned with the process through which individuals limit and compromise their career

options in order to meet their career expectations of prestige and gender type (Gottfredson,

2002). Gottfredson stresses the barriers that may hamper an individual's occupational

aspirations and opportunities, by focusing on gender, biological determinants and social class

background (Gottfredson, 2002; Sharf, 2002, 2006; Stead & Watson, 2006). These are areas

traditionally not emphasised in other career development theories (Sharf, 2002, 2006; Stead

& Watson, 2006). Gottfredson has attempted to integrate both process- and content-

orientated theories of career choice (Stead & Watson, 2006).

In recent years, Gottfredson (2002, 2005) has shifted the focus of her theory in order

to address concerns previously levelled at her. She has attempted to pay particular attention

to the abilities and powers an individual has, but may not always use, in order to create a

public persona that fits more closely with the individual's unique internal self.

Development of the self concept and cognitive stages

Like Super, Gottfredson views the development of a self-concept as fundamental to

occupational aspirations (Gottfredson, 2002, 2005; Stead & Watson, 2006). She views career

development as the implementation of a self-concept, which is socially defined (Stead &

Watson, 2006). Gottfredson describes a progression through four stages of development as

crucial to the development of the self-concept (Gottfredson, 1981, 1996, 2002, 2005).

Gottfredson views the self-concept as being made up of elements such as appearance, gender,

social class background, intelligence, personality, career interests, competencies and values

(Gottfredson, 1981, 1996, 2002). Her theory states that these elements are integrated into the

self-concept at different cognitive stages, beginning in earlier childhood, as an individual's

view of self and the world becomes more complex. Apart from the self-concept, individuals

also have occupational stereotypes which are distinguished from one another along

dimensions such as gender, prestige and field of work (Gottfredson, 2002). Differences in

the hierarchy that these occupations form is attributed to the intellectual abilities required in

each job. Gottfredson also proposes the concept of innatability which refers to working

within the limits imposed on individuals by their intellectual abilities (Gottfredson, 2005).

Gottfredson (1981, 1996, 2002, 2005) proposes four stages of cognitive development

that occur between early childhood and adolescence, with each stage increasingly providing

individuals with a way to see themselves in the world. Gottfredson proposes that it is

children's increasing cognitive abilities and their ability to deal with abstract concepts that have an impact on how they understand and organise their worlds (Sharf, 2006). Each of Gottfredson's stages progressively introduces a new factor that needs to be incorporated into the self-concept and which circumscribes one's range of suitable occupations (Stead & Watson, 2006). In the first stage of cognitive development, occurring between ages 3 to 5 years, children's primary *orientation is to size and power* differences between themselves and adults. Children of this age bracket start to grapple with the concept of being an adult and progress from magical to intuitive thinking. In the second stage, between ages 6 to 8 years, children become *orientated to sex roles* and choose occupations based on perceived gender role differences between men and women. Children's occupational aspirations in this stage focus on what they believe to be appropriate for their sex. In the third stage, between the ages of 9 and 13 years, children enter the *orientation to social valuation* stage and start to become aware of the social class and statuses of different careers. Prestige also becomes important in career choice at this stage and careers are placed in a hierarchy. During the fourth stage, occurring at 14 years and older, adolescents become more introspective, developing greater self-awareness and perceptiveness of social class and status towards others. The fourth stage is known as *orientation to the internal, unique self* and it is at this stage that adolescents start to incorporate more personal attributes such as interests, capacities, values and abilities as further considerations in their career choices (Gottfredson, 1981, 2002, 2005; Helwig, 2004; Sharf, 2002).

Gottfredson's third stage is particularly relevant for this study. In this stage, children become particularly aware of individual intellectual and social differences and they become sensitive to peer group and social evaluation (Gottfredson, 2005). Children in this stage are more critical of lower status occupations and start to recognise concrete symbols of social class such as clothing and possessions (Gottfredson, 2002). They become aware of their own

abilities and of the hierarchy of occupations that affects how people are thought of by others. This causes them to start shaping their self-concepts and make occupational choices that correspond with their own level of intellectual functioning and social background by disregarding occupations that they perceive as being beyond their abilities or of too low a prestige level (Gottfredson, 1981, 2002). During this stage, children become aware of the link between education, occupation and income, and of the expectations of their parents. These aspects all start to impact on the circumscription process as more occupations are eliminated from consideration.

Individuals choose the careers they most prefer by comparing the degree of compatibility they see between their self images and the occupational images (or stereotypes) they hold. The greater the perceived level of compatibility, the stronger the individual's preference for that career (Gottfredson, 2002). Careers that conflict with core elements of the individual's self-concept will be rejected along the following lines: achieving fulfilment of personal interests will be compromised first; protecting the individual's social standing is considered more important; and public presentations of gender appropriateness will be most closely guarded (Gottfredson, 2002).

Barriers or the accessibility of occupation must also be considered and occupational aspirations are seen as the product of both compatible and accessible careers (Gottfredson, 2002). Social space, in turn, refers to the range of careers that the person considers acceptable, although some will be preferred over others (Gottfredson, 1996, 2002, 2005). While compromise is the process through which children give up preferred alternatives for ones that may be less compatible, but more accessible, circumscription is the process in which children limit this social space (Gottfredson, 1996, 2002, 2005). The following subsection provides a more detailed description of circumscription.

Circumscription

Gottfredson's theory proposes five principles that describe the process of circumscription which occurs throughout the four stages of cognitive development (Gottfredson, 1996, 2002; Sharf, 2002). During each stage individuals become more self-aware and begin to constrict their occupational choices by eliminating unacceptable options according to this new found awareness and conflict with the self-concept (Gottfredson, 2005). This process is known as *circumscription,* and children are not consciously aware that they are doing this (Sharf, 2006). The five principles of circumscription are described sequentially. Firstly, children become increasingly able to *comprehend complex and abstract information* about themselves and the world. Secondly, the *self-concept and occupational preferences develop interactively* and in close association to each other, often influencing each other's development. Thirdly, children start to *comprehend and integrate information about themselves and occupations* in an overlapping fashion, developing new insights before they have finished acting on the previous ones. Fourthly, children *progressively eliminate options that are incompatible* as their self concepts develop and become more easily delineated. Finally, these processes are sufficiently *elementary, gradual and taken for granted* that people are not typically able to describe them.

Circumscription refers to the prediction that gender will influence occupational choice from the age of 6 years onwards, and that social class or prestige level will influence choices from around 9 years of age (Gottfredson, 1981, 2002; Sharf, 2002). Occupations thought to be inappropriate to an individual's sex are eliminated from consideration first (Gottfredson, 1981). This is followed by the exclusion of occupations with unacceptably low prestige as they do not fit into the individual's social class concept of themselves. At the same time, occupations which are judged to be below the individual's ability level are also disqualified. As Gottfredson describes it, high social class serves to elevate the floor of occupations that

are seen as acceptable, while high intellectual ability elevates aspirations by raising the ceiling to what is seen as possible (Gottfredson, 2002, 2005). The reverse is also said to be true, with lower social standing and poorer ability capping and restricting acceptable occupations. Occupational exploration is then limited to occupations that fit between this ceiling and floor.

Compromise

Another aspect of Gottfredson's theory is the concept of *compromise* (Gottfredson, 1981, 1996, 2002, 2005). Compromise is the process of relinquishing preferred alternatives on the basis of reality or accessibility and refers specifically to obstacles or opportunities in the social or economic environment that may influence an individual's career options (Gottfredson, 1981, 1996, 2002, 2005; Sharf, 2002). This could include, for example, a flooded job market, geographic location, difficulties in completing training or education, family contacts or financial circumstances (Cox, 2004). The consequence of these influences may be that individuals have to accept a less acceptable career option simply in order to obtain a satisfactory job (Gottfredson, 1981).

Anticipatory compromise is defined as that which takes place when individuals start to moderate their assessment of compatibility with that of accessibility. Experiential compromise occurs when a person encounters a barrier in instituting their most preferred occupational choice (Gottfredson, 1996, 2002). This becomes more difficult as the person eliminates the more acceptable options in their social space.

Four principles of compromise can be delineated (Gottfredson, 1996, 2002). Firstly, individuals may *develop conditional priorities* when compromise is necessary. Gottfredson (1981) predicts that individuals are likely to compromise on interests first, thereafter prestige and finally gender stereotypes when making a career decision. This hypothesis has been used to explain why it has proved difficult to convince girls to pursue careers in mathematics,

science and other non-traditional careers (Sharf, 2002). Secondly, individuals *will settle for a good choice* but not necessarily the best one. Individuals will opt for the 'good-enough' option as they are unwilling to undergo the process of selecting a better choice (Gottfredson, 2002). Thirdly, an individual *will avoid committing* to any career choice if the options available are not satisfactory. Lastly, individuals *accommodate to compromise in a hierarchical fashion,* with major changes in the field of work being most accommodated to, less to compromises in prestige, and least to threats to the implementation of acceptable gender identities (Gottfredson, 2002, 2005). Thus, compromise can be said to refer specifically to the prediction that individuals will be more resistant to compromising and changing issues from earlier stages in the circumscription process (Gottfredson, 1981).

Evaluation of Gottfredson's theory

Gottfredson's theory of circumscription and compromise attempts to explain why children are attracted to specific occupations, while still acknowledging the fundamental importance of the self-concept in career development (Sharf, 2002, 2006). Gottfredson proposes that an individual's career satisfaction is determined by the congruence between the chosen occupation and the individual's self-perception and she maintains that gender stereotypes are developed to assist people with their career choice selection (Gottfredson, 1996). Gottfredson has consistently found empirical support for her theory, which she provides in the original theory, the two revisions and numerous articles (Gottfredson, 2005). Sharf (2006) states that, although studies have not always tested predictions as outlined by Gottfredson, these studies generally do support her theory.

Brown (1996) has described Gottfredson's explanation of the process that leads to circumscription and compromise as too general and believes that this leads to questions concerning what occurs in the process of career choice. He argues that Gottfredson's constructs of circumscription and compromise lack specificity (Stead & Watson, 2006).

Sharf (2006) describes Gottfredson's theory as very complex as she makes different predictions depending on the degree of compromise and its severity. This has meant that predictions are complex to make and this has made tests of her theory difficult (Sharf, 2006). Furthermore, Brown proposes that Gottfredson does not offer an explanation for what individuals do who do not circumscribe prematurely and who avoid gender stereotypes. There has been a call for Gottfredson to focus more specifically on the factors that influence the development of her primary construct, the self-concept (Brown, 1996). Gottfredson (2005) has responded to these criticisms by asserting that they may not be very informative as these studies seem to not adequately assess the individual's processes of circumscription and compromise. She has also commented that these variations may be explained in part by reviewing whether the issue of compromise was major, minor, real or artificial (Sharf, 2006). Gottfredson (2005) proposes that her theory can be used in diagnosis, intervention and description of various occupational problems throughout childhood and adolescence. Criticism has also been levelled at Gottfredson's theory as not adequately describing adult career development; although Gottfredson has countered this by stressing that her theory focuses specifically on children and on a career development phase that is traditionally lacking in current career theories (Stead & Watson, 2006).

Despite a number of criticisms levelled at Gottfredson for uncritically applying developmental concepts to careers and not keeping abreast of new developments in the field of developmental psychology (Brown, 1996; Vondracek, Lerner, & Schulenburg, 1986), others have found support for her theory and its components (see Gottfredson, 2002). For instance, in a test of Gottfredson's theory, Henderson, Hesketh and Tuffin (1988) found support for the hypothesis that gender and social class influence career choice in children. However, they did find that this happened at ages earlier than predicted by the theory. Blanchard and Lichtenberg (2003) found partial support for Gottfredson's theory of

compromise in that the university students in their study engaged in a low degree of compromise and placed greater importance on interests first, then prestige and lastly gender stereotypes. However, these students engaged in moderate or high degrees of compromise, and evidenced no significant differences in importance placed on prestige and gender stereotypes, although both were significantly higher than the importance placed on interests. In a recent review, Watson and McMahon (2005) have reported on several studies which found empirical support for Gottfredson's theory, especially with regard to her concepts of sex-typing, socialisation and the inverse relationship between fantasy and realism. Studies involved in this longitudinal project have also consistently found support for aspects of Gottfredson's theory. Her theory has proven to be useful in educating adolescents about sex typing and prestige levels and their influence on occupational aspirations (Stead & Watson, 2006).

A number of researchers have found Gottfredson's theory to be particularly useful in the context of South African research with children (Cox, 2004; Crause, 2006; Dean, 2001; Grobler, 2000; Olivier, 2004). This theory has been part of the theoretical base of this longitudinal research project from its inception and is thus again used as a specific theoretical framework for the present study.

Summary

Career development theories have come a long way since the 1900's, having evolved from predominantly trait and factor theories to the current developmental approaches, with an increasing emphasis on context. Theories with lifespan orientations use constructs such as values, self-concepts and thematic exploration to enrich the trait and factor approaches and they view career choice not as a once off, static decision, but rather as a more holistic process that involves a series of career-related decisions made throughout the lifespan (Patton & McMahon, 2006).

This holistic, lifespan approach implies that emphasis has been increasingly placed on both childhood as an important stage in the career development of the individual and career development as critical to the holistic education of the child (Helwig, 2004). Yet despite the increasing interest in understanding career development across the lifespan, researchers have noted that little attention has been paid to career development as it pertains to childhood (Hartung, Porfeli, & Vondracek, 2005; Tracey, 2001; Wahl & Blackhurst, 2000; Watson & McMahon, 2005). Using two established theories to provide a sound theoretical base, this longitudinal study aims to explore and describe the career development of children by investigating their occupational aspirations and occupational gender stereotypes.

The two theories are those of Donald Super (1957, 1990; Super, Savickas, & Super, 1996) and Linda Gottfredson (1981, 1996, 2002, 2005). While Super's theory provides a solid basis from which to explore the overarching career development tasks of children, Gottfredson's theory offers a specific approach that investigates how children develop occupational aspirations, and the role that social, cultural and environmental factors have on these aspirations.

Super's theory conceptualises career development across the lifespan and enhances this process by describing the various life roles individuals play throughout their lives. Super gives central importance to the self-concept in the career development process and regards career development as the continual process of improving the match between the self and environment through integrating individuals' social, economic and cultural reality with their own characteristics. This lifespan, life-space theory has been relanguaged to fit today's post-modernist society through the introduction of career construction theory.

Super proposes five chronological, vocational developmental stages that stretch across the lifespan. The children in this study fall into Super's Growth stage. Major career development tasks in this stage include children becoming concerned with their future,

developing independence, achieving scholastically and forming competent work attitudes and habits. Children learn and work through these tasks through the activities, play and relationships the child is involved in. One can see how these tasks are influenced by the general development tasks prescribed for this stage. Parents play a significant role in this process, as do the social networks, cultural expectations and status identity the child is exposed to. These constructs are further elaborated in Gottfredson's theory.

Gottfredson's theory of circumscription and compromise emphasises the importance that sex-roles and social prestige play in making career choices, as well as the barriers that an individual faces (Gottfredson, 2002, 2005; Sharf, 2002, 2006). Her theory is concerned with the process through which individuals limit and compromise their career options in order to meet their career expectations of prestige and gender type. Circumscription is the process in which children limit the range of suitable career options; while compromise is the process through which children give up preferred career choices for ones that may be less compatible, but which are seen as more accessible.

Like Super, Gottfredson views the development of a self-concept as fundamental to occupational aspirations and sees the self-concept as being made up of elements such as appearance, gender, social class background, intelligence, personality, career interests, competencies and values. Her theory states that these concepts are integrated into the self concept at different cognitive stages, beginning in earlier childhood, as an individual's view of self and the world becomes more complex (Gottfredson, 1981).

Gottfredson proposes four stages of cognitive development that occur between early childhood and adolescence through which the processes of circumscription or compromise are enacted (Gottfredson, 1981, 1996, 2002, 2005). The third stage occurs between the ages of 9 and 13 years and is the stage in which the children in this study fall. This stage is known as *orientation to social valuation* as children start to become aware of the social class and

status of different careers. Prestige also becomes important in career choice at this stage and careers are placed in a hierarchy. This results in children shaping their self-concepts and making career choices that correspond with their own level of intellectual functioning and social background by disregarding careers that they perceive as being beyond their abilities or of too low a prestige level.

While Gottfredson considers occupational aspiration development in children and Super describes career development across the lifespan, these two theories share much in common. They both emphasise the importance of the self concept and view social, cultural, environmental, and relational factors as important in this process. Thus, by considering both the developmental tasks appropriate to their age and the role that gender, status, prestige and ability play in developing occupational aspirations, one is able to effectively describe and explore the career development of children.

Conclusion

In briefly describing the prevailing child developmental theories of Piaget and Erikson and, more specifically, the career development theories of Super and Gottfredson, this chapter has attempted to provide a theoretical base from which to explore the occupational aspirations and perceptions of South African children. With international research into middle childhood limited and South African research in this area even more so, it is vitally important to ensure that this study is rooted in an existing body of career theory. In the next chapter, international and national research on this research topic will be examined as a further means to contextualise the findings of this study.

CHAPTER 3

Research Review

In contextualising the present study it is important to review the existing research in the field. This provides an opportunity for understanding how this research would fit into the present body of knowledge. In addition, it also supplies a platform from which to understand the results of the present study. This chapter presents an overview of international and national research in the area of career development. The structure of the chapter has been divided into three broad sections, starting with an overview of career research before shifting to specific research on the career development of children. The second section provides a more in-depth review of research on occupational aspirations, while the third section reviews occupational gender stereotypes as they pertain to children.

This review was further structured using a Systems Theory (Patton & McMahon, 1999, 2006) approach as a framework. This approach examines factors affecting the career development of a child in increasing concentric circles of influence. The inner circle consists of individual factors such as aptitudes, age, gender, race, beliefs, personality, self-concept, interests and world-of-work information. This individual system is then placed in a contextual system which consists of social and environmental-societal systems. The social system includes family, peers, media, schools, workplace and community groups; while the environmental-societal system consists of factors such as socioeconomic status, politics, employment trends, geographical location and globalisation.

Overview of Career Development and Child Career Development Research

Internationally, career development theory has a relatively short history, having evolved from the trait factor theories of the 1900s towards a more developmental perspective in recent decades (Patton & McMahon, 1999, 2006). Traditionally career research studies have focused on one of five major topics: occupational prestige, individual traits, sex-type,

dimensions of occupational images, and general familiarity and knowledge of occupations (Gottfredson, 1981). It has only been in more recent times that studies have started to focus on career issues across the lifespan and, more specifically, on childhood.

Much of the extant literature has reflected a predominance of research on adolescent and adult career issues (Betz, 2001), while there has been an apparent lack of career development research with reference to children (Tracey, 2001; Wahl & Blackhurst, 2000; Watson & McMahon, 2004). This trend has been emphasised in recent research overviews (Hartung, Porfeli, & Vondracek, 2005; Watson & McMahon, 2005) despite Watson and McMahon's (2004) observation that greater insight into the career development of children may provide better insight into the career development of adults.

It has been hypothesised that this lack of research on childhood career development reflects society's desire to completely separate the period of childhood from work and labour issues (Hartung, Porfeli, & Vondracek, 2005). However, many theorists, (e.g., Gottfredson, 1981, 2005; Super, 1957, 1990; Super, Savickas, & Super, 1996) have found childhood to be an important period in career development, especially when considered from a life-span perspective. In addition, some authors have pointed to the importance of studying childhood career development and aspirations as predictors of adult preferences (Trice, 1991; Trice & McClellan, 1993; Watson & McMahon, 2004). Despite this, Whiston and Brecheisen (2002) remarked that of the research on child career development, little pertains to younger children. Other studies have questioned whether adult models of interests are even applicable to children younger than 14 years (Tracey, 2001). It has been pointed out that younger children may think in different ways to adults, which would necessitate a greater body of research that looks at changes and thinking styles when studying children's interests. More longitudinal research has been called for in this regard (Tracey, 2001).

The need for a greater research emphasis on the career development of children has been consistently identified. In a recent research review Watson and McMahon (2005) reviewed child career development research, themed it according to a learning perspective and discussed the influences on and processes of career development learning. This review found that the career development learning of children has consistently received little attention. Furthermore, Watson and McMahon (2004) revealed that, although some theories and research have pointed to the importance of intrapersonal and interpersonal factors in the career development of children, few studies have actually focused on this aspect and these influences have seldom been described in the literature. They also note that environmental and societal influences in particular have tended to be neglected in the study of child career development (Watson & McMahon, 2004).

Betz (2001) noted that research into issues of diversity, with explicit reference to social class and race, has been lacking in the field. This has all impacted on the development of the field and these factors need to be considered in order to reinvigorate the discipline and move career psychology forward. Vondracek (2001b) pointed out the importance of basing career research in the larger framework of life-span human development. Special mention was also made of the importance of career developmental research with children and adults in order to take career psychology forward as a strong and thriving discipline (Vondracek, 2001b).

Hartung, Porfeli and Vondracek (2005) indicated that it is by linking what is known about childhood career development with what is known about adolescent and adult career development that a true life-span career development framework can be formed and the field of career psychology moved forward in an integrated fashion. This emphasis on the developmental perspective has necessitated the need for research that takes a more longitudinal approach (Silbereisen, 2002). This call has been echoed in other studies which

have emphasized that a longitudinal design is integral to the proper study of career development in children (Hartung, Porfeli, & Vondracek, 2005; Stockard & McGee, 1990). This study, which aims to follow a sample of children from early through late childhood and into adolescence, will help build knowledge of career development in the South African context by employing a longitudinal design.

As indicated by Lent (2001), one of the greatest weaknesses of career psychology as a discipline has been the overemphasis of certain issues and populations over others. Most research on career development has focused on children in the United States, with little research published from other countries (Whiston & Brecheisen, 2002). In reviewing the existing research for the present chapter, the researcher found that, of those studies that do explore the career development of children, few if any have focused on South African children. Minority groups and international samples almost universally have received less attention and the application of career theories with these populations is thought to be questionable (Russell, 2001). Little attention has also been paid to contextual and cultural variables and few linkages have been made with related subject fields (Lent, 2001).

Career psychology in South Africa is still in its formative stages and much needs to be done to develop the South African knowledge base on career developmental behaviour. South African research on career development has been limited and largely confined to secondary and tertiary education students (De Bruin & Nel, 1996; Horn, 1995; Stead & Watson, 2006). This lack has clearly emphasised the need for more South African research on children's career development. Similar trends have been found in South African research of general psychology topics. Few national studies have focused on children, with only 14.8% of articles in the South African Journal of Psychology between 1999 and 2003 having used children or adolescents as participants (MacLeod, 2004). This has highlighted once again the need for topical research using South African children as a sample base.

A review of South African career research found that national studies have focused mainly on diagnostic aspects of career counselling with specific emphasis on personality variables, career maturity and socio-economic and cultural factors (De Bruin & Nel, 1996). Furthermore, this review called for larger, co-ordinated studies to be undertaken in an attempt to develop a South African model of career development. Such studies should preferably be longitudinal in nature, as researchers such as Savickas (2002b) and Betz (2001) have called for more longitudinal research, especially with populations other than North American, to reinvigorate the study of careers. Our attention now turns to a brief overview of what existing child career development research has found.

Most research reviews have concluded that career development in childhood is a complex interaction of many variables, including characteristics, behaviours and environments (Gysbers, 1996). Studies have demonstrated that children's knowledge of occupations becomes more comprehensive and detailed as they increase in age (McCallion & Trew, 2000; Seligman, Weinstock, & Heflin, 1991). How children describe careers has also been found to change, with younger children seeming to focus on occupations in terms of behaviours and activities, while older children seem to focus on interests, aptitudes and abilities when describing occupations (Borgen & Young, 1982).

As suggested by career development theory, children tend to become more career mature with age and start to choose more realistic careers (Cox, 2004; Crause, 2006; Vondracek & Kirchner, 1974). Increases in career maturity have been found in children as young as third grade (Nelson, 1978). Also consistent with theoretical propositions, girls have been found to have higher levels of career maturity than boys (Hartung, Porfeli, & Vondracek, 2005). Higher socioeconomic status has also been found to be positively correlated with career maturity levels (Holland, 1981), as has parental influence (Hartung, Porfeli, & Vondracek, 2005).

Summary

The prevailing research on career development has indicated a strong bias towards the study of adolescent and adult populations. This has continued despite the current trend towards more developmental perspectives in theory and research and the recognition of childhood as an important stage in career development. Child career development research has been further confounded by the fact that most research has been conducted on samples from the United States with little information available on international populations, regardless of the fact that cultural and environmental factors have been seen as important influences in the career development of the child.

The research that does exist on childhood career development has focused predominantly on occupational aspirations, occupational expectations and gender stereotypes and has been largely cross sectional in nature. However, with the emphasis on the developmental perspective it has become imperative for research to follow a more longitudinal design in order to properly study the career development of children. Many researchers have called for longitudinal research as a vital means to reinvigorate the study of careers. The next section will focus more specifically on international and national research in the field of children's occupational aspirations.

Overview of Children's Occupational Aspiration Research

Occupational aspirations have been the major focus of career development research with children over the past three decades (Hartung, Porfeli, & Vondracek, 2005; Sellers, Satcher, & Comas, 1999; Tracey, 2001). Research in this area has followed similar trends to those in the previous section, with much of the prevailing research having been conducted in the United States and little research in the way of national studies. In addition, the existence of a bias towards research using samples of adolescent and student populations has been prevalent.

In a comprehensive review of the career literature of children, Hartung, Porfeli and Vondracek (2005) found that within the limited studies that had been conducted on children even fewer have made use of a longitudinal design. However, longitudinal research has often been called for to reinvigorate the study of career development and particularly to view career development over the lifespan (Betz, 2001; Savickas, 2002b). Indeed, studying how children's occupational aspirations change over time is best viewed from a longitudinal perspective (Hartung, Porfeli, & Vondracek, 2005; Stockard & McGee, 1990).

A number of research studies have attempted to validate career theories as they pertain to childhood career development (e.g., Helwig, 2004). These studies have reported mixed findings, although support has been found for Gottfredson's (1981, 1996, 2002, 2005) theory of circumscription and compromise (Helwig, 2004; Wahl & Blackhurst, 2000). This has included support for Gottfredson's concept of sex-typing in the career development of children (Tracey, 2001), the influence of social valuation on children's occupational aspirations (Helwig, 1998a, 2001), and Gottfredson's hypothesis that children's occupational aspirations become more realistic and less fantastic as children grow older (Helwig, 1998c, 2001). Certainly, children's occupational aspirations have been found to make a marked shift from fantasy to reality-based choices in primary school (Hartung, Porfeli, & Vondracek, 2005; Trice, 1991; Vondracek & Kirchner, 1974). All of these research topics are explored in the current study. Children of the age of the participants in the present study are in the interest phase of Super's Growth stage, where enjoyable activities provide the basis for their occupational aspirations (Sharf, 2002, 2006).

Children's occupational aspirations have been found to become more consistent with their own abilities, values and interests as they mature (Hartung, Porfeli, & Vondracek, 2005). It has also been found that with increasing age comes the growing awareness of environmental obstructions and available opportunities to their occupational aspirations

(Hartung, Porfeli, & Vondracek, 2005). Both these findings are proposed by Gottfredson's theory, particularly in her fourth and final stage of career circumscription (Gottfredson, 1981, 1996, 2002, 2005).

Cross-sectional research has shown that the stability of children's occupational aspirations increases with age, and that children may be influenced by the popularity or prestige of occupations, with more popular occupations having shown greater stability across age groups (Hartung, Porfeli, & Vondracek, 2005). Furlong and Biggart (1999) found that children's aspirations about suitable occupations were formed at a relatively young age and that the levels of change from these original aspirations was small. Trice (1991) found that children expressed fairly stable occupational aspirations over time. This lends some weight to the consistent findings of the present longitudinal research (Cox, 2004; Crause, 2006; Dean, 2001; Olivier, 2004), as well as providing some predictors of future results.

Children have been found to limit their occupational aspirations as they become older (Trice, Hughes, Odom, Woods, & McClellan, 1995). Trice et al. also established that children use gender role and social valuation as methods to eliminate options from their prospective consideration as they mature. This provides partial support for Gottfredson's theory (1981, 1996, 2002, 2005), although it was noted that these circumscribing influences tended to happen a little earlier than predicted by Gottfredson's theory (Trice et al., 1995).

Much recent research into children's occupational aspirations has focused on Holland's (1985) RIASEC occupational interest typology. This research seems to support the notion that children's occupational interests change over time (Hartung, Porfeli, & Vondracek, 2005). Holland's model also seems to become more applicable to children's occupational aspirations as they become older (Tracey & Ward, 1998). Children were also found to be more likely to develop interests in areas in which they were competent (Tracey, 2001).

Thus far, most national research conducted in the area of preadolescent children's occupational aspirations are studies completed as part of the current longitudinal project. The present study will expand on this longitudinal research conducted by Dean (2001), Cox (2004), Olivier (2004), and Crause (2006) by studying the possible stability and variability of the occupational aspirations and perceptions of a sample of South African children over a five year period. The results of these studies are briefly discussed later in this section. In another South African study, Grobler (2000) conducted research on the occupational aspirations and perceptions of five year old South African children. This study, whose sample consisted of 87 black and white children, found that there were differences in occupational aspirations between cultural groups and that black children tended to aspire to more social types of occupations such as nursing and teaching (Grobler, 2000).

Given the lack of South African longitudinal research in the field of child career development, Dean (1998) initiated a study exploring the occupational aspirations and perceptions of pre-primary school children. These findings formed the pilot study for the longitudinal project of which this study is a part. Dean's (2001) study assessed the current sample from the ages of five to eight, Cox's (2004) study from ages 6 to 9, Olivier's (2004) study from ages 8 to 10 and Crause's (2006) study from ages 9 to 12.

The results of this longitudinal study to date appear to provide both support for and criticism of child development and career development theories. The findings have confirmed childhood as a time of critical development, especially for the development of occupational aspirations and perceptions. Dean (2001) found that boys were less gender stereotyped than girls and tended to aspire more to Realistic (i.e., practical) occupations as they became older; while girls aspired to more Social (i.e., people-orientated) occupations. Olivier's (2004) results confirmed this and also found that children tended to aspire to a typology more similar to their mother than their father's occupations. In addition, Olivier

found that occupational typologies were stable over time, as was the presence of occupational gender stereotypes. Cox's (2004) results indicated that Holland's Social typology remained the most popular choice across all four years under study.   The results of Cox's study emphasised the stability of occupational typologies and occupational gender stereotypes over time.

The most recent study is that of Crause (2006). Crause found that most children between the ages of 9 and 12 years were able to consistently express an occupational aspiration across the years under study and that these aspirations were relatively stable across time. Differences in occupational aspirations between gender groups also persisted over time. Support was found for both Super and Gottfredson's theoretical stages that the children were in at the time of this study. Furthermore, the children in the sample had increasingly become aware of status and used this to circumscribe their occupational aspirations. Lastly, both boys and girls were found to have become less gender stereotyped as they became older (Crause, 2006).

Hartung, Porfeli and Vondracek (2005) structured their research review by exploring the influence of contextual factors on the career development of children. This review suggested that children utilize both intrapersonal and interpersonal methods to explore the work environment and develop early occupational aspirations and interests. In particular, Hartung, Porfeli and Vondracek found that children seem to circumscribe their career exploration according to factors such as gender, socioeconomic status, family and parental influence, and community standards. This is reminiscent of Systems Theory (Patton & McMahon, 1999, 2006) which structures career development as being influenced by varying internal, social and environmental-societal factors. This is the approach used to structure the ensuing sections of this research review.

Individual factors

Personal characteristics such as interests, aptitudes, values, competence and self-concept have long been known to impact on individual career choice (Holland, 1981, 1985; Super, Savickas, & Super, 1996). However, despite this recognition, little research has been conducted on children in this field. This section will review the existing research on intrapersonal factors including self-concept, age, gender, race and culture.

Self-concept and self-efficacy

Although two different constructs, self-concept (i.e., how individuals see themselves) and self-efficacy (i.e., the beliefs individuals have in their abilities to perform certain tasks) have both been found to be factors that affect children's occupational aspirations (Sharf, 2002, 2006). These two constructs tend to work together, with individuals' beliefs about themselves affecting their self concept and visa versa. It is for this reason that these two concepts have been grouped together in this section.

Children learn about occupations in early childhood through environmental and social interactions which greatly affect their career choices in later years (Hartung, Porfeli, & Vondracek, 2005). Self-efficacy beliefs have been found to be shaped by these interactions with environmental influences, culture, gender and class (Watson & McMahon, 2004). Likewise, the self-concept is modelled through social learning and environmental interaction. These factors all play a role in career development and it stands to reason that the intrapersonal influences on an individual's self-concept and self-efficacy beliefs will in turn affect that individual's career development. This was confirmed in a study of sixth grade children, which found self-concept to be positively related to career development (Holland, 1981).

Little research is currently available on how children develop a sense of self-efficacy and how this development affects the occupational aspirations they have (Cox, 2004; Crause,

2006). However, research does support a link between a child's interests and competence, in that children have been found to be more likely to develop an interest in activities they have an aptitude or competence in (Tracey, 2001). Preadolescent children have been found to use their interests, beliefs and values, based on their view of their self-efficacy and self-concept, to make decisions and tentative goals about the world of work (Hartung, Porfeli, & Vondracek, 2005).

Bandura, Barbaranelli, Capara and Pastorelli (2001), in a study that investigated the socio-cognitive origins of career self-efficacy beliefs and their impact on a child's occupational aspirations, conceptualised a model of career self-efficacy. This model proposes that children's self-efficacy beliefs and academic abilities shape their perceived efficacy in various career fields. This, in turn, influences the occupations which children aspire to (Bandura et al., 2001). Similarly, children's perceived academic, social and self-regulatory efficacy influences the types of occupational activities in which they believe they are competent (Bandura et al., 2001). Thus a child's perceived occupational self-efficacy can guide the kinds of career paths children consider and those they circumscribe.

In exploring how children's interests become crystallized (a task in Super's Growth stage) and the role self-efficacy plays in this, Lapan, Adams, Turner and Hinkelman (2000) found that these concepts were strongly related to the expectations children have of current employment trends between men and women. Gender differences in the crystallization of children's interests were also evident. Furthermore, it has been found that occupational self-efficacy predicts the choice of gender traditional occupational roles (Bandura et al., 2001).

To date, no South African studies have been conducted in the field of children's self-efficacy beliefs and its possible impact on occupational aspirations (Cox, 2004). This again, indicates the need for national research. Crause (2006) has called for this research to focus

on the relationship between a child's self-concept, occupational aspirations, career choice and career maturity in an attempt to determine how these constructs are related.

The limited studies under review have demonstrated that the self-concept can be an important intrapersonal factor in a child's career development, as suggested by Super's life-space, life-span theory. In addition, research in this area has pointed to the importance of adequate role models and parental influence in shaping a child's self-concept and thus future occupational aspirations (Bandura et al., 2001; Super, 1957). This is discussed later in this chapter. The next subsection discusses two additional intrapersonal factors that impact on children's occupational aspirations and perceptions, those of age and gender.

Age and gender

As has been reiterated throughout this review, the existing literature on career development in childhood is sparse. However, within the limited research on childhood career development, studies have addressed children's occupational preferences (Gottfredson, 1981; Stockard & McGee, 1990), occupational aspirations and occupational expectations (Helwig, 2001; Phipps, 1995) in relation to gender role stereotyping (McMahon & Patton, 1997; Trice et al., 1995). These studies have found both gender and age to be two variables which impact greatly on the child's career development and future career choice.

Age

Career theorists and researchers alike have found that childhood is a time when occupational aspirations are narrowed or circumscribed, which has important implications for career education programmes offered in childhood (Gottfredson, 1981, 1996, 2002, 2005; Trice & King, 1991). Appropriate programmes can assist the circumscription process and help children make more informed choices as they grow older. This is important because according to Crause (2006) there is a strong correlation between childhood occupational aspirations and adult career choices.

As children increase in age they start to think in more abstract and complex ways, as is suggested by Piaget's (1951, 1971, 1977) theory of cognitive development. This maturation of cognitive development has been found to impact on the development of occupational perceptions in children (Nelson, 1978) and allows the child to eliminate occupational aspirations in a developmentally ordered sequence as they grow older (Gottfredson, 2002, 2005; Trice et al., 1995). Borgen and Young (1982) found significant differences between older and younger children's descriptions of occupations, which highlights age as an important factor in child career development. Similar results have been found in the present longitudinal study (Cox, 2004; Crause, 2006; Dean, 2001; Olivier, 2004).

South African research studying age as a factor in the establishment of occupational aspirations and perceptions has focused more on adolescents and adults, with little literature on children. However, the studies by Grobler (2000), Dean (2001), Cox (2004), Olivier (2004), and Crause (2006) have all emphasised age as a determinant of childhood occupational aspirations and perceptions. Indeed, age as a variable that influences occupational aspirations and perceptions has continuously been studied throughout the course of this longitudinal project (Cox, 2004; Crause, 2006; Dean, 2001; Olivier, 2004). The results from this project have established that children are able to aspire to an occupation from an early age. Grobler (2000) also found that occupational awareness seems to be present at a much earlier age than proposed by career theories. In addition, the studies have suggested that occupational typologies and aspirations seem to remain stable over time (Dean, 2001). This emphasises the important role that career education programmes can play in helping children develop a proper understanding of the world of work, career opportunities, and the need for educational attainment to provide for their futures. Gender is the next variable that will be discussed as part of the intrapersonal factors that influence children's occupational aspirations and perceptions.

Gender

Of those studies that have considered childhood occupational aspirations, gender differences have been the most consistently researched aspect (Phipps, 1995; Wahl & Blackhurst, 2000; Watson & McMahon, 2005). Substantial research indicates that gender plays a significant role in the occupational aspirations of children of all ages (Hartung, Porfeli, & Vondracek, 2005; Sellers, Satcher, & Comas, 1999; Weiking Franken, 1983), yet the results of these studies have not presented any conclusive findings.

Research on gender differences over time has suggested that social forces may contribute to predictable gender differences in children's occupational aspirations (Arap-Maritim, 1984; Gregg & Dobson, 1980; Hammond & Dingley, 1989; Looft, 1971; Watson & McMahon, 2005). Furthermore, research has established that early social factors and personal preferences related to gender influence the child's later occupational aspirations (Lapan & Jingeleski, 1992; Stockard & McGee, 1990). More recently, studies have found that children hold stronger gender-typed occupational aspirations from an early age and that boys tend to hold these preferences more rigidly than girls (Helwig, 1998b, 1998c; Trice et al., 1995).

Girls and boys have been found to choose occupations that are divided along gender-specific lines (Furlong & Biggart, 1999; Harris & Satter, 1981; Hartung, Porfeli, & Vondracek, 2005; Hewitt, 1975; Johnson Riley, 1981; Watson & McMahon, 2005). Hartung, Porfeli and Vondracek (2005), in their recent review, found that girls typically aspire to predominantly female stereotyped occupations, while boys aspire to predominantly male stereotyped fields. Generally, boys have been found to aspire to more physical and practical occupations, while girls have been found to aspire to more social, people-orientated and artistic occupations (Hartung, Porfeli, & Vondracek, 2005; Helwig, 1998a; Watson & McMahon, 2005). In addition, it has been found that boys tend to aspire to fantasized

occupations such as professional athlete for a longer period of time (right through to grade four when most boys are age 10), while girls' aspirations tend to have broadened over this time (Helwig, 1998a).

Boys have been found to perceive a much wider range of occupational choices open to them than their female counterparts (Johnson Riley, 1981) and tend to report a higher number and broader range of occupational interests (Looft, 1971; Stockard & McGee, 1990; Vondracek & Kirchner, 1974). These gender differences have been attributed to gender identity development and the general process of occupational knowledge development (Stockard & McGee, 1990). Gender differences in occupational aspirations seem to develop early in childhood (Hewitt, 1975; Liben, Bigler, & Krogh, 2001; Stockard & McGee, 1990), with girls as young as 6 and 7 years already limiting their occupational aspirations significantly more than boys of the same age (Looft, 1971). The latter study, as well as more recent research (McMahon & Patton, 1997), indicated that girls seem to learn what adult statuses are open to their gender and circumscribe their occupational aspirations accordingly. In other studies it was found that girls as young as pre-primary school select traditionally female careers (Johnson Riley, 1981; Stroeher, 1994).

However, it has been found that girls tend to show greater gender-role flexibility than boys, choosing male-dominated occupations more often than males would choose female-dominated occupations (Raffaele Mendez & Crawford, 2002). This increase in flexibility, with girls choosing more non-traditional occupations than boys, may further indicate the influence of societal norms on the career development of children (Bobo, Hildreth, & Durodoye, 1998; Watson & McMahon, 2005). Stockard and McGee (1990) found that girls were more likely than boys to prefer occupations typical of the other gender and that they often have higher preference scores for these occupations than their male counterparts. This may be as masculine-type careers traditionally yield a higher income and are more

prestigious, thus enticing girls to aspire to crossing this gender barrier (Hartung, Porfeli, & Vondracek, 2005).

In one study, children gave higher status ratings to traditionally male occupations (Liben, Bigler, & Krogh, 2001). This latter finding has been confirmed by other studies, which have found that boys tended to avoid occupations that were not typically male sex-typed more so than girls (Tremaine & Schau, 1979) and that fewer girls selected traditionally sex-typed occupations than boys (Spare & Dahmen, 1984). However, boys may have a greater willingness to consider typically female-typed occupations and may be more flexible and open to change than girls (Stockard & McGee, 1990). Yet other studies have found differently. In a longitudinal study of factors that influence children's career development, McMahon and Patton (1997) found that boys tended to be more critical of males in typically female occupations. This may discourage boys from pursuing female-orientated occupations. These results have interesting implications for the development of career education programmes with primary school children.

Research also indicates that there may be gender differences in the types of occupations children aspire to, with pre-adolescent boys aspiring more towards occupations requiring secondary education, while pre-adolescent girls have been found to aspire more to occupations requiring tertiary training (Phipps, 1995). However, one study noted that both boys and girls tended to aspire towards occupations requiring more complex functions and higher educational levels as they became older (Helwig, 1998a). This again offers confirmation for Gottfredson's stage of social valuation (Gottfredson, 1981, 1996, 2002, 2005).

Not all research has found gender differences in children's occupational aspirations (Hartung, Porfeli, & Vondracek, 2005) and some studies have found few gender differences in terms of attitudes towards what are considered appropriate occupations for each gender

(Gregg & Dobson, 1980; Stockard & McGee, 1990). In other studies, both genders seemed to hold favourable attitudes towards occupations usually associated with the opposite gender (Gorrell & Shaw, 1988; Griffin & Holder, 1987). The presence of gender differences seems to depend on how questions were posed to participants (Tremaine & Schau, 1979). This may provide some explanation for why there has been such mixed results in the area of gender differences in children's occupational aspirations.

In a study that examined the circumscription process of eighth graders, Lapan and Jingeleski (1992) found support for Gottfredson's theory in that children of this age tended to limit their occupational aspirations along prestige and gender lines. In addition, females also tended to foreclose on their occupational aspirations earlier than boys (Vondracek & Kirchner, 1974). This is supported by other studies that have found that girls circumscribe their occupational aspirations at a greater and earlier rate than boys (Hewitt, 1975). Preadolescent girls have been found to aspire to a narrower range of occupations than preadolescent boys, and they tend to engage in less occupational exploration in primary school (Hewitt, 1975; McMahon & Patton, 1997). These gender differences may be a result of gender-based socialisation processes (Hartung, Porfeli, & Vondracek, 2005). International trends (i.e., other than American) have tended to be similar. For instance, in a study of Irish children, boys and girls were found to aspire to occupations along gender lines and girls tended to have lower aspirations than their male peers (Hammon & Dingley, 1989).

Hartung, Porfeli and Vondracek (2005) found that younger girls tended to aspire towards more prestigious occupations than older girls. More prestigious occupations tend to be filled by men and are associated with higher educational requirements and greater competition. These findings are thought to be due to older girls having recognised the influence of gender barriers in the workplace and thus circumscribing their options to occupations they have perceived as being more attainable. Certainly, the research that

Hartung, Porfeli and Vondracek (2005) reviewed suggests that social forces have contributed to the predictable gender differences found in children's occupational aspirations.

Stockard and McGee (1990) argued that the development of gender differences can be understood within the broader realm of psychological theory. Thus, in trying to understand how children develop gender differences in their occupational aspirations, one needs to turn to social psychology theories. These theories have stated that children learn about gender typing and other occupational characteristics from adult role models and adult occupational roles. It follows, therefore, that if occupational roles are defined as the implementation of a self-concept in an occupational context [see, for example, Super, (1990), and Super, Savickas and Super (1996)] and gender is integral to a child's self-concept (Sharf, 2002, 2006) that these gender differences will start to develop and affect occupational aspirations (see Gottfredson, 1981, 1996, 2002, 2005). Gender role socialisation has been found to be one of the earliest and therefore most significant forms of socialisation (McMahon & Patton, 1997). In particular, language and the titles given to occupations, as well as the culturally determined gender specificity of the occupation may play a role in this socialisation (Liben, Bigler, & Krogh, 2002). Yet the changing role of women in the workplace and an increase in the occupational spectrum that women are involved in may mean that these gender role differences have changed in the past decade. This will necessitate the updating of previous research findings (Hartung, Porfeli, & Vondracek, 2005).

Research seems to be in contention over the diversity of occupations associated with the different gender groups (Hartung, Porfeli, & Vondracek, 2005). Some earlier studies have found that the diversity and number of occupations that boys and girls were interested in increased with age (Hewitt, 1975; Nelson, 1978). However, other research has found no age change between gender groups, or that the reverse was true (Arap-Maritim, 1984; Trice, 1991). Boys have consistently been found to have higher levels of occupational information

and to report more diverse occupational aspirations than girls (Arap-Maritim, 1984; Looft, 1971; McMahon & Patton, 1997; Vondracek & Kirchner, 1974). Other research has found no gender differences in this regard (Bobo, Hildreth, & Durodoye, 1998; Trice & King, 1991) or that girls, in fact, showed greater diversity in their occupational aspirations (Trice & Rush, 1995). Hartung, Porfeli and Vondracek (2005) hypothesised that the difference in historical time of contradictory research studies may well account for some of these differences.

Stroeher (1994) has recommended career education programmes from a young age to help girls perceive themselves in a greater range of occupations in order to avoid early circumscription of male-dominated careers. Career education programmes have often been used as a means to limit premature exclusion of certain occupations and lessen the impact of occupational stereotypes. However, Stockard and McGee (1990) have hypothesised that increasing a child's knowledge about occupations may have little effect on decreasing gender differences in occupational preference as children seem to learn about such differences and other occupational characteristics simultaneously in their development. Hartung, Porfeli and Vondracek (2005) concluded that research does not present a cohesive picture of what leads to gender differences in occupational aspirations and exploration. Considering that these differences have such dramatic consequences for society in general, there is definitely the need for more research in this area.

On a national level, Dean (2001), Cox (2004), Olivier (2004), and Crause (2006) have found that gender plays an important role in the development of children's occupational aspirations and perceptions. Dean (2001) found that boys aspire to more physical or Realistic type careers; whereas girls tended to aspire more towards Social or people-orientated occupations. This corroborates the findings of international studies (Hartung, Porfeli, & Vondracek, 2005; Helwig, 1998a; Watson & McMahon, 2005). However, the present longitudinal study has found several inconsistencies with international research trends (Cox,

2004). This emphasises the need for continued research in this area. The findings of the studies in this longitudinal project have found that children were aware of gender differences and their own gender identity from an early age (Cox, 2004; Crause, 2006; Dean, 2001; Olivier, 2004). In addition, Crause (2006) found that children were aware of status differentials among occupations and began to reject occupations they saw as not fitting with their status level as early as middle childhood. These findings seem to correspond to the propositions of Gottfredson's (1981, 1996, 2002, 2005) theoretical stage for the orientation to gender roles, which proposes that children will aspire to occupations that are gender specific, as well as to the orientation to social valuation stage, which proposes that children circumscribe their occupational aspirations based partially on their evaluation of social status. In the next subsection the concept of race and its effect on children's occupational aspirations is discussed.

Race

Race is another construct that fits into the individual system of the Systems Theory Framework (Patton & McMahon, 1999, 2006). However, while some research has indicated that race is a factor in occupational aspirations, much of the research in this area has confounded race and socioeconomic status (Hartung, Porfeli, & Vondracek, 2005). For this reason, there has been little reliable research that studies race as a variable on its own. Nonetheless, studies have typically found that children of minority groups in America aspired to occupations of lower prestige than their white counterparts (Cook, Church, Ajanaku, Shadish, Kim, & Cohen, 1996; Griffin & Holder, 1987). One study which examined the effect of race and ethnicity on career choice found that race or ethnic differences did not greatly affect occupational aspirations, but that there were differences in the perceptions of occupational opportunities and barriers related to race (Fouad & Byars-Winston, 2005).

In an earlier study, Vondracek and Kirchner (1974) found that urban black children tended to have a less mature development in the task of mastery in projecting oneself into the future than urban white children. This was also found in a study by Bobo, Hildreth and Durodoye (1998). A cautionary note is needed, however, in that these results may also be influenced by the lower social class level of the black children (Cook et al., 1996). Future research that studies race independently of socioeconomic status has been called for (Hartung, Porfeli, & Vondracek, 2005). Research on socioeconomic status is presented in the environmental-societal system subsection.

On a national level, little research has been conducted that studies race as a variable in children's career development. Those studies that do exist have studied adolescents and adult black and coloured South Africans (e.g., Kuit, 2006; Stead & Watson, 1998b; Watson, 1984). One study which did consider race as a variable in the occupational aspirations of South African children was that of Grobler (2000). This study found that most children, regardless of race aspired to Social type occupations. However, while over half of the black sample for this study aspired to Social occupations, only a third of the white sample fell into this typology. Other differences included that no black children aspired to Artistic type occupations and more white than black children aspired to Realistic occupations. More black children tended to aspire to Investigative and Fantasy type occupations (Grobler, 2000).

As stated earlier, South African research on race is limited. This is often exacerbated by the fact that the constructs of race and culture in South Africa are inextricably linked. However, for the purposes of this research review these concepts have been separated. The research on culture is presented in the next subsection.

Culture

Culture and the context in which a child is raised has been found to be of critical importance in the formation of a self- and career identity (Watson, 1984). Cox (2004) went

so far as to state that culture can be considered one of the most potent factors impacting on a

child's career development. Studies have found that children's occupational aspirations were

influenced by the occupational status of the dominant culture (Liben, Bigler, & Krogh, 2001;

Stockard & McGee, 1990; Vondracek & Kirchner, 1974). In addition, children have been

found to show greater interest in jobs associated with their own culture (Liben, Bigler, &

Krogh, 2001).

Limited research exists on culture and its influence on South African children's career

development. Those studies that do exist have focused predominantly on adolescents. That

being said, interesting differences between South African cultural groupings seem to exist.

Black adolescents were found to aspire more towards social and the helping professions than

other occupations and few seemed to aspire to scientific or investigative occupations

(Watson, Foxcroft, Horn, & Stead, 1997). This may be linked to the importance of ubuntu or

the humanness concept emphasised in black culture (Grobler, 2000). In another study,

Pohlman (2003) suggested that black South African adolescents' occupational aspirations

have been circumscribed by the inequalities of the social and historical context in which they

were raised. It is recognised that children may often have their occupational aspirations

limited by prevailing racial and cultural stereotypes (Wahl & Blackhurst, 2000). The next

system of influence in the Systems Theory Framework (Patton & McMahon, 1999, 2006) is

the social system and the social factors that constitute it. These factors are discussed in the

next section.

Social factors

Social factors, such as the family, peers, school and the media, have been found to

have considerable influence on a child's career development. As part of the Systems Theory

Framework (Patton & McMahon, 1999, 2006), these factors form the social system which

helps contextualise the individual factors that have already been discussed. The following

subsection reviews current research on the influence of recognised social factors on the career development of children by investigating both international and national studies.

Family

Most theories and research have emphasised the family as a critical factor in the career development of children (Hartung, Porfeli, & Vondracek, 2005; Schreuder & Theron, 1997); however, little research has been conducted in this area. This is surprising when one considers how influential family is in the general development of children (Whiston & Keller, 2004). Studies have shown that the family make-up and the number of parents influenced a child's occupational aspirations (Trice et al., 1995; Whiston & Keller, 2004), while factors such as parental background, role modelling and family experiences impacted on the way in which the child develops occupational gender-types, prestige rankings, occupational knowledge and attitudes (Hartung, Porfeli, & Vondracek, 2005; Seligman, Weinstock, & Owings, 1988).

Parents are active agents in their children's career development (Young & Friesen, 1992) and children often aspire to occupations that meet their parents' expectations (Helwig, 1998c). By providing support, attachment and other important relationship variables, parents are able to influence their child's career development, self-efficacy, decisiveness, commitment and exploration (Whiston & Keller, 2004). Research has proposed that a child's career development is better seen as a joint project between parent and child in a process that is greatly affected by the communication and relationship between parent and child (Young et al., 2006).

As stated previously, factors such as parental background, role modelling and family experiences have been found to impact on the way in which the child develops occupational gender-types, prestige rankings, occupational knowledge and attitudes (Hartung, Porfeli, & Vondracek, 2005; Seligman, Weinstock, & Owings, 1988). Children of the age of those in

the present study have been shown to possess considerable information about their parents' occupations, as well as about their own occupational aspirations (Seligman, Weinstock, & Heflin, 1991). Elementary school children were found more likely to be influenced by their parents' than other social influences such as teachers, peers and other family members (Whiston & Keller, 2004). This is probably due to the fact that parents are the child's greatest socialisation agent at this age. However, as the child enters Erikson's latency period parental influence tends to decrease as the child is exposed to an ever increasing array of influences from school, friends and the media. Studies have shown that parental influence on occupational aspirations tended to decrease as the child became older (Seligman, Weinstock, & Heflin, 1991).

Trice (1991) found that children's occupational aspirations tended to be strongly related to their parents' occupations, with 47% of the young children (of the age of 8 years) in the sample aspiring to the same occupation as one of their parents. This number dropped to 16% by the time the children turned 11 years of age. This indicates that parents' occupations tended to have less impact on their children's occupational aspirations as they became older. Children's occupational awareness tended to be most influenced by the father's occupation initially, but the mother's occupation became more influential in later childhood (Seligman, Weinstock, & Heflin, 1991). This has been confirmed in other studies which found that older children's occupational aspirations were more influenced by their mother's than their father's occupation (Trice et al., 1995; Trice & Knapp, 1992). On a national level, these findings were confirmed by Cox (2004) who found that the father's occupation became of less importance and the mother's of increasing importance in her study of 6 to 9 year old South African children's occupational aspirations and perceptions. This may be due to the more prestigious occupations women have started to enter in recent years and the fact that children

are typically more exposed to maternal occupations and thus have greater knowledge of their

mother's occupation (Trice & Knapp, 1992).

In a research review that examined the impact that family and family dynamics have

on children's occupational aspirations, Whiston and Keller (2004) observed that children with

mothers in non-traditional occupations tended to have less occupational stereotypes. Helwig

(1998c) has found that elementary school children tended to aspire to occupations at the same

level or status as their parent's occupational expectations for them. However, this study also

found that children tended to start aspiring to occupations of their own, often disregarding

parental expectations, as they became older (Helwig, 1998c).

South African research that examines the impact family has on a child's career

development has stemmed from the longitudinal project of which this study is a part. Dean

(2001) found that children's occupational aspirations were equally influenced by both

parents' occupational interest typologies. This is in contrast to Gottfredson's (1981, 1996,

2002, 2005) theory which proposes that the father's occupational typology is of greater

importance in early childhood. Cox (2004) found that the mother's occupation became of

increasing importance as the child became older. As previously indicated, this finding has

been supported by other international studies. Olivier (2004) found that South African

children tended not to aspire to the same occupations as their parents. This was confirmed by

Crause (2006). All of these studies support Super's (1990; Super, Savickas, & Super, 1996)

proposition that children in the Growth stage aspire to and gain information from influential

figures in their environment.

From the analysis of these studies, it would seem that both theory and empirical

research confirm that the family plays a key role in the development of a child's occupational

aspirations and perceptions. Parents have been seen as particularly important in the

socialisation and provision of support, guidance and information needed for the child's career development.

Media

Little research has been conducted on the effects of the media on career development (Stead & Watson, 2006; Watson & McMahon, 2005). Yet there has been widespread recognition of the influence that the mass media has on a child's career development and the development of occupational aspirations and occupational gender stereotypes (McMahon, Carroll, & Gillies, 2001). Hartung, Porfeli and Vondracek (2005) reported that the small body of research that does exist on this topic has found that the media, and television in particular, was a powerful context for career development that requires more attention.

Children in primary school reportedly saw occupations depicted on television as being more glamorous and stereotypical than those in real life, and they saw real life occupations as requiring more personal effort (Wright, Huston, Truglio, Fitch, Smith, & Piemyat, 1995). In addition, this study found that most children formed separate ideas for real-world based occupations and those they saw on television. However, for children who believed that the occupations they were exposed to on television were socially realistic, these impressions did influence their occupational aspirations (Wright et al., 1995).

Children's books, movies and television over the years have reiterated the role of men in positions of power and women in supportive roles (Raffaele Mendez & Crawford, 2002). These images have reinforced the idea that young girls should not aspire to occupations of high-power, high-status and high-pay, leading in turn to the under-representation of women in such careers (Raffaele Mendez & Crawford, 2002). Thus, the role of the media may impact particularly on the occupational aspirations of girls.

School

School in and of itself has been recognised as a major influence on the career development of children (McMahon, Gillies, & Carroll, 2000). While this has been studied by many authors, it is generally secondary schooling that is said to impact on career development. Yet McMahon, Gillies and Carroll (2000) found that, even at the primary educational level, school impacted on the occupational aspirations of children, and that career education programmes in this phase of schooling were effective. Programmes in the primary school years helped the child to make connections between school-based activities and the world of work (McMahon, Gillies, & Carroll, 2000). However, the school was not the only factor that shaped occupational aspiration advancement. Environmental-societal factors, such as socioeconomic status, have also been found to play an important role. These factors are discussed next.

Environmental-societal factors

Environmental-societal factors are another important sphere of influence that must be considered in the career development of an individual. As part of the Systems Theory Framework (Patton & McMahon, 1999, 2006) the environmental-societal system combines with the social system to contextualise the individual system, both of which have already been discussed. Although these factors may seem to have less impact on the individual directly, factors such as geographical location, socioeconomic status and globalisation can profoundly influence an individual's occupational aspirations (Stead & Watson, 2006). However, Watson and McMahon (2005) have found that these factors have been more implied than properly researched. Little research has focused on how children learn the information they know about occupations (Hartung, Porfeli, & Vondracek, 2005). Yet environmental-societal factors such as socioeconomic status, geographic location, and economic and political policies have been recognised as important variables in the

development of occupational aspirations and perceptions (Cox, 2004; Crause, 2006; Stockard & McGee, 1990). The factor of socioeconomic status is discussed in the next subsection.

Socioeconomic status

To date, little research has been conducted on socioeconomic status and its impact on children's occupational aspirations (Sellers, Satcher, & Comas, 1999). Yet Gottfredson (1981, 1996, 2002, 2005), Holland (1981) and Stroeher (1994), amongst others, have consistently found that socioeconomic status has influenced and is influenced by occupational aspirations and choices. Some career theorists and researchers have hypothesised that socioeconomic status is even more influential than culture in this regard (Bobo, Hildreth, & Durodoye, 1998). Others have contradicted such findings and identified culture as the more influential factor (Bandura et al., 2001; Phipps, 1995; Sellers, Satcher, & Comas, 1999). Research thus seems to be inconclusive on this topic.

While many studies have pointed to the close relationship between social class and occupational aspirations, socioeconomic status is not always directly studied, but rather used as an explanation for a study's results (Fouad & Brown, 2000; Furlong & Biggart, 1999; Watson & McMahon, 2005; Weiking Franken, 1983). However, socioeconomic status, prestige and the social class of children's occupational expectations and aspirations have all been found to be positively correlated (Hartung, Porfeli, & Vondracek, 2005). This relationship is thought to be due to the opportunities that higher socioeconomic status offers individuals (Furlong & Biggart, 1999; Jordan, 1976). Many studies have found that socioeconomic status impacts on a child's occupational aspirations as it circumscribes their occupational aspirations by matching occupations to their perceived social status (e.g., Holland, 1981; Miller, 1986; Stroeher, 1994). Poorer children perceived fewer occupational opportunities as being available to them (Weinger, 1998), while wealthier children have been found to aspire towards more prestigious occupations than their poorer classmates (Cook et

al., 1996). Children of lower socioeconomic status tended to hold more conservative and sex-typed views of occupations (Hageman & Gladding, 1983). Nationally, Dean (1998) found that lower socioeconomic status children tended to aspire towards more traditional careers, a finding that was confirmed by the results of Stroeher's (1994) study. This could explain why children of higher social class often aspire to occupations with professional status, which require higher levels of training and which are associated with higher income.

Studies have shown that children from a lower socioeconomic status tended to have lower levels of occupational knowledge and restricted occupational aspirations (Cook et al., 1996; Weinger, 1998). Pre-primary school girls of lower socioeconomic status tended to show greater traditionality in their occupational aspirations (Stroeher, 1994). However, Watson and McMahon (2005) noted that the influence of socioeconomic status can be mediated by the influence of parental beliefs and aspirations. In addition, Silbereisen (2002) commented that both occupational aspirations and educational attainment are thought to be influenced by social class; although not directly by parental aspirations or material possessions, which are thought to contribute to the child's occupational and educational aspirations.

The correlation between social class and occupational aspirations has been contradicted by the findings of Sellers, Satcher, and Comas (1999). This study found that children's socioeconomic status did not play a substantial role in their occupational aspirations as their aspirations did not seem to differentiate between traditional and non-traditional occupations. This would seem to contradict Gottfredson's (1981, 1996, 2002, 2005) theory of social valuation, as the children in this particular study were between the ages of 9 and 11 years. Yet perhaps this finding merely reflects a developmental difference in the subjects of this study and Gottfredson's theory, as the children in this study seemed to make choices that corresponded more closely to Gottfredson's (1981, 1996, 2002, 2005) second

stage of sex role orientation. Fouad and Brown (2000) emphasised social class and economic status as areas that need to addressed when working with clients from all populations. It appears that, as children age, they become more aware of racial and socioeconomic barriers to their occupational aspirations (Cook et al., 1996). This is further confirmation of Gottfredson's theory (1981, 1996, 2002, 2005). While socioeconomic status is considered important when conducting research on the career development of children, the current study has not examined it directly. Rather, it has controlled for it by ensuring that participants were homogenous in terms of socioeconomic variables.

Summary

Existing research seems to indicate that, while much has been done in determining the nature and determinants of the occupational aspirations of children, much still needs to be learnt about the precursors to occupational aspirations and how these aspirations develop. Intrapersonal factors such as self-esteem and self-efficacy, age and gender have been thought to play a role, as have social factors, including culture, media, school and socioeconomic status. Furthermore, interpersonal factors such as the family have also been recognized in the development of children's occupational aspirations.

Research has shown that children start to develop a self-concept early in life, an observation which has not been accepted until recently. If a career choice is regarded as the implementation of such a self-concept, as suggested by Super (1990; Super, Savickas & Super, 1996), this finding has important implications for career education programmes. Factors such as age and gender, which impact on the self-concept, have continuously been explored in this longitudinal study. This has been due, in part, to the need to advance our South African knowledge base on childhood career development and, particularly, gender differences in such development. These findings can be used to advise the career education programmes offered in schools.

Factors such as parental modelling, parental career choice and family experiences have all been found to impact on a child's career development. Studies have noted familial influence in the levels of a child's occupational gender stereotypes, occupational status ranking, occupational information levels, academic achievement and occupational attitudes. However, it has been found that the impact of family tends to decrease with age as other social forces become more prevalent in the child's immediate environment.

Social factors have been found to be perhaps the greatest influence on a child's occupational aspiration development. Research has demonstrated that children's occupational interests are greatly influenced by the status levels of the dominant culture's occupations. In addition, socioeconomic status and occupational status levels have been positively correlated to children's occupational aspirations. In the next subsection the research on occupational gender stereotypes is reviewed.

Overview of Occupational Gender Stereotype Research

The pervasive influence of gender role stereotyping on the occupational aspirations of children is well established and gender stereotypes remain the most researched area within childhood occupational aspiration development (Phipps, 1995; Sellers, Satcher, & Comas, 1999; Tracey, 2001). The prevailing research seems to indicate that children of all ages and school grades hold occupational gender stereotypes (Liben, Bigler, & Krogh, 2001; Riley, 1981; Sellers, Satcher, & Comas, 1999; Stroeher, 1994) and there is consensus that occupational gender stereotypes tend to follow traditional gender lines (Hartung, Porfeli, & Vondracek, 2005). Even young children show some level of gender stereotyping, with children as young as four years more likely to aspire to occupations typical for their own gender (Trice & Rush, 1995). Other research by Bobo, Hildreth and Durodoye (1998), Phipps, (1995) and Stroeher (1994) has further confirmed that occupational gender stereotypes are held by children of all ages. Early social factors and gender stereotypes have

also been found to influence a child's later occupational aspirations (Lapan & Jingeleski, 1992; Stockard & McGee, 1990).

These stereotypes seem to exist across cultures, as indicated by studies conducted on Australian (McMahon, Gillies, & Carroll, 1999; McMahon & Patton, 1997), British (Francis, 1996), and Kenyan (Arap-Maritim, 1984) children. Research indicates that children across the nations of America, Ireland and Kenya all show predictable patterns of gender differences in their occupational aspirations that are attributable to the social forces these children are exposed to (Arap-Maritim, 1984; Gregg & Dobson, 1980; Hammond & Dingley, 1989; Looft, 1971). Additionally, research has shown that cultural gender stereotypes, as well as the perceived status of a particular occupation, impacts on the child's occupational aspirations (Stockard & McGee, 1990). Links have also been established between gender stereotyping and occupational status levels, with a correlation between a particular culture's view of certain occupations as masculine, and the pay grades and status levels of such occupations (Liben, Bigler, & Krogh, 2001).

Studies examining age differences in occupational gender stereotyping have shown mixed results (Hartung, Porfeli, & Vondracek, 2005). Some earlier studies have found that older girls tended to aspire towards more typically male-dominated and non-traditional fields than younger ones (Hageman & Gladding, 1983). Interestingly, a recent study has found that certain types of occupations were more highly associated with one gender than the other (Turner & Lapan, 2005). In particular, this study found that more males were found in Realistic (practical), Investigative (scientific) and Enterprising (business) fields according to Holland's (1985) typology, while more women were found in Social (people), Artistic and Conventional (data) occupational fields.

However, some research studies have shown that children became more gender stereotyped with age and seemed to indicate that societal norms and expectations may have

had a greater influence on these children's career development as they became older (Liben, Bigler, & Krogh, 2001; Martin, Wood, & Little, 1990). This is contradicted by other research which showed that gender stereotypes tended to decrease over time (see Gottfredson, 1981, 1996, 2002, 2005; Stockard & McGee, 1990; Super, 1957; Watson & McMahon, 2005; Weiking Franken, 1983). Some studies have found that older children held gender stereotypes less rigidly than when they were younger (Meyer, 1980; Nelson, 1978; Weiking Franken, 1983). Another important aspect to consider is that research has found children in the preadolescent stage to be less rigid and gender stereotyped than children both younger and older (Seligman, Weinstock, & Heflin, 1991).

Studies reviewing children's occupational gender stereotyping over time have reported a decline in stereotypes over the decades (Bobo, Hildreth, & Durodoe, 1998; Helwig, 1998b). However, as Watson and McMahon (2005) pointed out, this decline may be due to changing social norms and the ensuing socialisation of children. These factors may have changed the nature of gender stereotypes and children may now hold more subtle stereotypes than those previously assessed.

Children have been found to ascribe higher status to traditionally masculine occupations than they do to traditionally female occupations (Liben, Bigler, & Krogh, 2001). This perception has been linked to gender stereotypes which tended to emerge early in childhood and increase as children became older (Liben, Bigler, & Krogh, 2001). This is predicted by Gottfredson's theory of circumscription and her stage of social valuation (Gottfredson, 1981, 1996, 2002, 2005). In addition, children of higher intellectual functioning tended to have lower occupational stereotyped attitudes (Hartung, Porfeli, & Vondracek, 2005), with intellectual level positively influencing occupational knowledge. This is also predicted by Gottfredson's theory.

Many studies have found that children's gender-stereotyped perceptions and knowledge of occupations have tended to show high degrees of sex-typing along traditional gender lines (Hartung, Porfeli, & Vondracek, 2005; Liben, Bigler, & Krogh, 2001; McMahon & Patton, 1997; Tremaine & Schau, 1979). Some studies have found that boys held greater levels of sex typing than girls (Weiking Franken, 1983). One example of this is a study that examined the gender-role stereotypes and occupational aspirations of gifted early adolescents and found that gifted girls circumscribed fewer occupations than their male counterparts (Raffaele Mendez & Crawford, 2002). This same study found that boys tended to aspire to higher prestige occupations, as well as occupations that required higher educational qualifications than girls (Raffaele Mendez & Crawford, 2002). It was hypothesised that these differences were due to occupational gender stereotypes held by both genders. Some studies have found that boys tended to be more gender stereotyped than girls (Liben, Bigler, & Krogh, 2001; McMahon & Patton, 1997) and that the range of stereotypes tended to be greater and more varied for boys (Arap-Maritim, 1984). This is confirmed by another study which attempted to test Gottfredson's theory and found that males were more rigidly sex-stereotyped than girls (Henderson, Hesketh, & Tuffin, 1988). However, this has been contradicted by other studies (Wigfield, Battle, Keller, & Eccles, 2001).

Summary

The current literature seems to indicate that children of all ages and school grades hold occupational gender stereotypes (Hartung, Porfeli, & Vondracek, 2005; Liben, Bigler, & Krogh, 2001; Riley, 1981; Sellers, Satcher, & Comas, 1999; Stroeher, 1994; Watson & McMahon, 2005). Consensus exists that these stereotypes tend to follow traditional gender lines (Hartung, Porfeli, & Vondracek, 2005). Furthermore, it appears that gender stereotypes exist across cultures. The presumed causal factors for such stereotypes include the socialisation and cultural forces that children are exposed to in their upbringing (Arap-

Maritim, 1984; Gregg & Dobson, 1980; Hammond & Dingley, 1989; Hartung, Porfeli, & Vondracek, 2005; Looft, 1971).

In reviewing the research in the field it became evident that studies have demonstrated mixed results, particularly with regard to age differences in occupational gender stereotypes (Hartung, Porfeli, & Vondracek, 2005). However, research has indicated that children become more gender stereotyped with age. In addition, the literature has indicated that societal norms and expectations may have a greater influence on children's career development as they become older (Liben, Bigler, & Krogh, 2001; Martin, Wood, & Little, 1990). This is contradicted by other research which has found that gender stereotypes tended to decrease over time (see Gottfredson, 1981, 1996, 2002, 2005; Stockard & McGee, 1990; Super, 1957; Watson & McMahon, 2005; Weiking Franken, 1983). Some studies have also found that older children held gender stereotypes less rigidly than when they were younger (Meyer, 1980; Nelson, 1978; Weiking Franken, 1983).

Studies reviewing children's occupational gender stereotyping over time have reported a decline in stereotypes over the decades (Bobo, Hildreth, & Durodoe, 1998; Helwig, 1998b). However, as Watson and McMahon (2005) pointed out, this decline may be due to changing social norms and the ensuing socialisation of children. This finding indicates the necessity for ongoing research in the area of occupational gender stereotypes in order to ascertain recent trends.

When reviewing specific aspects of occupational gender stereotypes, studies have shown that children have tended to ascribe higher status to traditionally masculine occupations than they do to traditionally female occupations (Liben, Bigler, & Krogh, 2001). This attitude tended to emerge early in childhood and increased as children became older (Liben, Bigler, & Krogh, 2001), which would confirm Gottfredson's (1981, 1996, 2002, 2005) theory of circumscription and her stage of social valuation. This finding has particular

relevance for the present study, as the children are currently in this stage of career development.

Many studies have found that children's gender-stereotyped beliefs and knowledge of occupations have tended to show high degrees of sex-typing along traditional gender lines (Hartung, Porfeli, & Vondracek, 2005; Liben, Bigler, & Krogh, 2001; McMahon & Patton, 1997; Tremaine & Schau, 1979). Some studies have found that boys have evidenced greater levels of sex typing than girls (Weiking Franken, 1983), while boys have also been found to aspire to higher prestige occupations, as well as occupations that require higher educational qualifications than girls (Raffaele Mendez & Crawford, 2002). Other studies have found that boys tended to be more gender stereotyped than girls (Liben, Bigler, & Krogh, 2001; McMahon & Patton, 1997) and that the range of stereotypes tended to be larger and more varied for boys (Arap-Maritim, 1984). However, this has been contradicted by other studies (Wigfield, Battle, Keller, & Eccles, 2001). As stated earlier, the research findings in the field of gender stereotypes has been contradictory.

Girls have tended to show greater gender-role flexibility, choosing male-dominated careers more often than males would choose female-dominated occupations (Raffaele Mendez & Crawford, 2002). This increase in flexibility with girls choosing more non-traditional occupations than boys may further indicate the influence of societal norms on the career development of children (Bobo, Hildreth, & Durodoye, 1998; Watson & McMahon, 2005).

This research review has discussed some of the relevant literature as a means of providing a framework for the results of this study. This has further built on the foundation of the theoretical base described in Chapter 2. In the next chapter, the research problem will be delineated and the research methodology employed will be discussed in order to provide a thorough explanation of how this study was conducted.

CHAPTER 4

Research Methodology

It is important to position the present study within the context of the ongoing longitudinal project which aims to track the development of the occupational aspirations and perceptions of a sample of South African children. Starting when the children were in preschool, this longitudinal study intends to follow the sample over a twelve year period when the children will finish their secondary school education. A number of studies have already been completed as part of this ongoing project including, in sequential order, Dean (2001), Cox (2004), Olivier (2004) and Crause (2006). These studies have afforded much insight into the development of occupational aspirations in South African children, providing awareness in an area of career development that has been inadequately researched to date (Dagly & Salter, 2004).

The present study has attempted to expand on and further explore the career development of these children by exploring and describing the occupational aspirations and occupational gender stereotypes of a sample of 9 to 13 year old South African children over a five year period. This chapter provides a description of the research problem before establishing the aims of the study. Furthermore it describes the research methodology employed in this study. This includes a description of the research design, the sampling technique used and an explanation of how the participants were selected. An overview of the measures used for data collection is also provided. Lastly, the research procedure is outlined, before the data analysis used is explained. Ethical considerations for the study also receive attention.

Problem Statement

While career development theories have historically ignored childhood, recent career literature has increasingly acknowledged the importance of childhood in the career

developmental process (Wahl & Blackhurst, 2000). Current career developmental theories recognize career development as a lifelong process, with individuals being influenced by personal and contextual factors throughout their lifespan, starting in childhood (Gottfredson, 2002, 2005; Sharf, 2002, 2006; Super, 1990). As a consequence, recent research has increasingly focused on certain aspects of child career development and behaviour (Sharf, 2002, 2006; Vondracek, 2001a). However, despite this renewed interest, the body of research on career development is still skewed towards adolescence and adult life stages and has failed to adequately link these findings to childhood career development tasks (Vondracek, 2001a, 2001b). This biased focus has been highlighted in a recent review of child career development research by Watson and McMahon (2005).

In addition, little attention has been given to the practical application of career development in childhood and adolescence, especially in school guidance and career awareness programmes. This is an important consideration as research based curricula in the areas of career development and awareness are vital to the education of our youth. Olivier (2004) has pointed out that international research in this area has proved valuable in developing successful career education programmes. For this reason it is necessary to develop the knowledge base on career development in order to better inform future career education programmes.

International studies on children's career development are still relatively few and the South African population has received even less attention (Olivier, 2004). The current longitudinal study aims to resolve this shortfall, in part by providing baseline information on the career development of South African school children. Previous studies in this longitudinal project have found support for child and career development theories and have found childhood to be a time of significant development in the occupational aspirations and perceptions of children.

Dean (2001) assessed the current sample when they were 4 to 8 years of age. Cox (2004) furthered the study by assessing the sample between the ages of 6 and 9 years; while Olivier (2004) focused on the sample when they were 8 to 10 years old. The latest study is that of Crause (2006), who assessed the children from 9 to 12 years old. The present study is the fifth study in the longitudinal project and assesses the stability and variability of occupational aspirations and perceptions of a sample of children over a five year period in terms of the children's occupational interest typology, occupational status levels, occupational gender stereotypes and occupational gender traditionality. In addition, while the present study focuses on the same quantitative aims as the other studies in this longitudinal project, it is the first to introduce a qualitative analysis of the children's aspirations.

Primary Aims of the Research

The primary aim of this study is to explore and describe the occupational aspirations and perceptions of a group of 9 to 13-year old children over a five-year period. In particular, this study aims to:

1. Explore and describe how children's occupational aspirations and perceptions (in terms of their Holland interest typology) may change over a five-year period for the sample as a whole, as well as for each gender group separately.

2. Explore and describe how children's occupational aspirations and perceptions (in terms of their occupational status level) may change over a five-year period for the sample as a whole, as well as for each gender group separately.

3. Explore and describe how children's occupational perceptions (in terms of gender stereotypes and traditional gender roles) may change over a five year period for the sample as a whole, as well as for each gender group separately.

4. Explore and describe how children have reflected on their career choices and development over the course of this longitudinal study.

Research Design

The purpose of a research design is to provide a structure for the answering of research questions and to provide a control for error in variance (Neuman, 2006). This study falls within the domain of a quantitative research method. Quantitative research uses numerical data to describe and explore a phenomenon (Neuman, 2006). This was the case in the present study as semi-structured interviews and biographical questionnaires were used to record verbal information and the data was transposed into nominal data for analysis.

An advantage of quantitative studies is that the range of the data is able to be presented in a coherent and functional way using numbers (Blaxter, Hughes, & Tight, 2003; Struwig & Stead, 2001). Quantifying abstract concepts allows one to discuss topics that might otherwise be difficult to analyse. Also, data can be precisely and exactly compared when it is in numerical and statistical form (Rubin, Rubin, & Piele, 2005). One of the disadvantages of the quantitative method is that detailed insight into the research problem may be compromised (Neuman, 2006). However, many investigators feel that by using quantitative research methods and statistical techniques, researchers bring greater precision and objectivity to the matter under investigation. For these reasons, it was felt that a quantitative method was best suited to the present study due to its longitudinal nature.

This study is also non-experimental as it has involved natural observation and no manipulation of variables (Gravetter & Forzano, 2006). Furthermore, this study is exploratory and descriptive as it attempts to gain familiarity and insight, while accurately depicting the characteristics of the phenomenon (Neuman, 2006; Struwig & Stead, 2001). Exploratory-descriptive research attempts to systematically examine, record and organise the observed behaviour or characteristics of interest (Gravetter & Forzano, 2006; Neuman, 2006), in this case the occupational aspirations and perceptions of children. Descriptive research,

furthermore, attempts to provide a more complete and accurate depiction of the situation under study (Struwig & Stead, 2001).

The purpose of exploratory research is the development and clarification of ideas, while formulating more precise questions for future studies to answer (Gravetter & Forzano, 2006; Neuman, 2006; Struwig & Stead, 2001). To date, most national career development research has focused on adolescents and students (Horn, 1995; Swartz, 2000) and research on pre- and primary school children's career development remains relatively unexplored (Dean, 2001). Thus, this study has aimed to explore this untapped area and encourage future research on the career development of children.

As stated previously, this study forms part of a larger longitudinal project that has been ongoing for the past seven years. Longitudinal research on life-span career development is limited and it has been called for by numerous international researchers (Betz, 2001; Savickas, 2002b; Silbereinsen, 2002) in order to expand the research concerning the career development of children. It is felt that it is only through longitudinal research that a better understanding of career development over the lifespan can be gained. Longitudinal research examines features of the same individuals at more than one point in time (Harris, 1998; Graziano & Raulin, 2000). According to Verdonik and Sherrod (1984), the criteria for a longitudinal research design stipulates that the information be collected during at least two time points over a span of at least one year; and that the attrition rate is low enough to maintain the longitudinal quality of the study. Both these criteria have been met in the present study as the same participants were evaluated on five occasions over a five-year period, and the number of participants was large enough for statistical analysis. Only those participants who were assessed in all five years covered by the present study were reported on.

Sample and Participants

Sampling techniques are a way of selecting a small number of individuals from a population in a way that allows the researcher to make conclusions about the phenomenon being researched (Gravetter & Forzano, 2006; Graziano & Raulin, 2000; Neuman, 2006). The sample for the present study consists of the previously selected participants from this longitudinal project. The sample for the initial study consisted of pre-primary school children in the Nelson Mandela Metropole who were selected using a two stage process. Firstly, schools in the metropole were selected according to a simple random sampling procedure, after which a sample of 130 children was drawn using a non-probability, purposive sampling technique.

Simple random sampling refers to a technique that selects participants (in this case, schools) according to a mathematically random procedure (Graziano & Raulin, 2000; Neuman, 2006). According to Dean (2001), the advantage of using such a technique is that no bias was present in the original selection of participating schools and thus all schools in the Nelson Mandela Metropole had an equal opportunity of being included in the sample.

Non-probability, purposive sampling means that the probability of an individual being selected is not known (Gravetter & Forzano, 2006; Struwig & Stead, 2001). Use of this technique means that the results of this study are not generalisable to the population at large (Graziano & Raulin, 2000; Struwig & Stead, 2001). However, this was not considered essential as the purpose of the study was descriptive in nature and generalisability was less important. A further advantage of this method is its convenience, practicality and economy of cost (Gravetter & Forzano, 2006; Graziano & Raulin, 2000; Neuman, 2006). This was particularly suited to the longitudinal study, where it was a matter of convenience to interview all children who attended a particular school at the same time. Purposive sampling is appropriate when a researcher wants to gain a deeper understanding, rather than

generalizing the findings to the larger population (Neuman, 2006). This method is thus suitable for use in an exploratory-descriptive study, where the aim is not to generalise findings to the larger population.

The longitudinal nature of this research project also affects the sampling technique and the number of participants. A possible pitfall of longitudinal research is the attrition rate of participants in later years of the study. This can be seen in the present study where the initial sample size of 130 children has decreased to 39 children over the course of the seven years of the study. This attrition rate is due partially to the decision, in the third year of the study, to continue assessing only the children who were 6 years of age in the initial assessment, and to no longer assess the other cohort which included children who were 5 years of age in the first year of the study. This decision was made to simplify the reporting of the results (Cox, 2004). Initially the selected participants were all attending pre-primary school, making it convenient in terms of time and financial reasons to conduct the semi-structured interviews.

The initial sample of 130 children (aged between 4 and 6 years) in the year 1999 decreased to 90 children in 2000, 82 in 2001, 70 in 2002, 59 in 2003, 57 in 2004, 42 in 2005 and 39 in 2006. It should also be noted that 50 children are currently being interviewed each year; however, a number of these children have not been able to be interviewed every single year of the study. As only children interviewed in all five years under investigation were included in the current sample, the total number of participants in the current study is 39.

The current sample consists of 39 children, of which 22 are boys and 17 girls. The participants turned 13 years old in the last year of the present study and are currently in grades 7 and 8 at their respective schools. These participants were drawn from the initial study and consist of those children still resident in the Nelson Mandela Metropole who were originally assessed at 6 years of age. To ensure an adequate sample size, all children who

were still resident in South Africa, contactable telephonically and who were willing to participate were interviewed in successive years (Cox, 2004; Crause, 2006). This was considered important as the size of a research sample affects the confidence that can be placed in the statistical significance of the data. A larger sample would provide statistics that are more representative of the actual values in the population (Gravetter & Forzano, 2006). It should be remembered, however, that this study does not intend to make generalisations to the population at large.

The sample is considered fairly homogenous in terms of socioeconomic status (Cox, 2004; Crause, 2006; Dean, 2001; Olivier, 2004). This was judged to be the case as the majority of pre-and primary schools originally participating in the study required school fees to be paid and catered chiefly for middle- to upper socioeconomic status families (Cox, 2004; Dean, 2001). The sample consists of predominantly white, English-speaking children. Although the sample is mostly white, other cultural groups were also 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; Olivier, 2004) or present studies.

Research Measures

Two measures were used for data collection in this study: a biographical questionnaire, and the Career Awareness Questionnaire (CAQ). Both measures were administered through a structured interview format. They were designed for use in this longitudinal study and can be found in Appendices A and D respectively.

Biographical Questionnaire

A short biographical questionnaire was constructed by the previous researchers in order to obtain 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). This questionnaire has been used throughout the duration of the longitudinal study and is combined with the consent form in which parents or guardians agreed to their children participating in the study. These biographical questionnaires were later matched to the child's corresponding interview schedule in order to collate all the information needed for the data capturing and for use in future studies. The biographical questionnaire and consent form can be found in Appendix A.

Career Awareness Questionnaire (CAQ)

A semi-structured interview schedule, called the Career Awareness Questionnaire (CAQ), was developed in order to elicit information from the participants about their occupational aspirations, the number of occupations the participant knows about and gender stereotypical perceptions. This CAQ, which has been used since the onset of this longitudinal project, has undergone some minor changes over the years in order to accommodate for the cognitive development of the participants. The CAQ schedule used initially can be found in Appendix C, while the CAQ used in subsequent studies is in Appendix D and the revision used by Crause (2006) and in the current study can be found in Appendix E.

Since the participants in the initial study were preschool children, Dean (2001) proposed that semi-structured interviews would be the most appropriate means for gathering information on occupational aspirations and perceptions. The advantages of a semi-structured interview include that it allows for open and frank responses if rapport has been established with the interviewer, the observation of non-verbal cues and the collection of personal information, attitudes, perceptions and beliefs (Gravetter & Forzano, 2006; Struwig & Stead, 2001). A further advantage is the flexibility in structure which enables the interview to be adjusted should the situation require it. Semi-structured interviews also allow for direct comparisons between the information provided by different participants (Shaffer, 1999). A disadvantage of this type of data collection is that the interviewee's responses may

be forced or inhibited and influenced by predetermined questions (Struwig & Stead, 2001).
As such, it is possible that answering the questions in the CAQ could impact on the
participant's future career awareness. In addition, the initial structuring of the interview
format may be time-consuming (Gravetter & Forzano, 2006; Shaffer, 1999). However, it was
still deemed the most appropriate method for this study as it is a versatile method of data
collection which can be used with all age groups (Cox, 2004; Dean, 2001).

As this research study forms part of a larger longitudinal project, the interview
schedules used since the onset of this longitudinal project formed the basis of the present
study. According to Cox (2004), the questions used in the semi-structured interview (or
CAQ) were modelled on research conducted by Nelson (1978) who demonstrated that asking
children open-ended questions aids the development of occupational thinking and allows for
questioning of the child's reasoning. As stated previously, the format of the initial semi-
structured interview (Dean, 2001) has undergone minor changes in subsequent studies (Cox,
2004; Olivier, 2004) in order to compensate for the participants' chronological development.
In addition to these changes, the previous researcher (Crause, 2006) made the decision to add
an additional question to the CAQ that asked the child to reflect on their occupational
aspirations and development across the years (see Appendix E). This question has been
retained in the ensuing years of interviewing to allow for further analysis of the child's career
development. These questions could provide valuable information for future research and
offer an indication of how participants have understood and experienced possible changes in
their occupational aspirations and perceptions over time.

In essence, the CAQ consists of five main questions, with supplementary questions
that follow on from these questions. These five main questions explore 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-role stereotypical

perceptions about certain occupations, and their personal reflections on their own career development. Because the participants for the present study are currently in Gottfredson's third stage of occupational development (i.e., orientation to social value and status), the children's responses to question 1 (c) of the CAQ were content analysed in terms of Gottfredson's criteria for the social evaluation stage of development.

In the initial study Dean (1998) found that many children answered questions regarding gender stereotypes (section 5) without properly understanding what the occupation entailed. In this regard, future years of the study asked participants if they knew what the occupation involves. Only if the child responded in the affirmative, would the interviewer continue with asking the specific question. However, the children in the current sample are 13 years of age and might find this questioning mundane. For this reason, it was decided from 2006 to no longer ask participants if they knew what a specific occupation involves, but simply to ask the child to respond to the gender stereotyped questions.

In order to ensure that children's answers would not be adversely affected by having to speak in their second language, interviews were conducted in Afrikaans for those participants who preferred to speak this as their mother tongue. This had been done in previous data collection in this longitudinal study (Cox, 2004; Dean, 2001) and typically involves two or three of the participants each year.

Research Procedure

As this study forms part of a longitudinal study, it is important to contextualise the research procedure for this study within the larger project. At the start of the present longitudinal study (in 1998) children at various pre-primary schools in the Nelson Mandela Metropole were contacted in order to determine their willingness to participate in the study (Cox, 2004; Dean, 2001). Both the parents and the schools of the participating children were offered feedback on the results of the research as an incentive to participate in the study.

Letters of confirmation with dates and times, as well as parental consent forms, and biographical questionnaires, were then sent to the participating schools. This elicited information about the child's age, gender, contact addresses and telephone numbers in order that the children could be contacted in subsequent years (Cox, 2004; Crause, 2006; Olivier, 2004).

Parents were required to complete both the consent form and the biographical questionnaire, and to return these to the school prior to the scheduled interviews. In addition, parents were asked not to prepare their children in any way regarding occupations as this might affect the validity of the results (Cox, 2004). A copy of the consent form can be found in Appendix A, while the original letter to the parents can be found in Appendix B. The schools who originally agreed to participate were contacted in subsequent years to confirm their continued willingness to participate in the study, as well as to establish which children were no longer attending these schools and where these children could be located (Cox, 2004; Crause, 2006).

This same procedure was followed in the present study with two minor alterations. Parental information letters and consent forms (Appendices A & B) were sent directly to parents or guardians in order to ensure a higher return rate of the biographical questionnaire. In addition, every parent or guardian of the 39 current participants was telephoned in order to gain telephonic consent and to ensure continued participation. In previous years, it was found that, while parents gave permission, they forgot to send biographical forms back to the school, resulting in a delay in the collection of this information. By allowing parents to fax the forms directly to the researcher, a higher compliance rate was achieved.

As in previous years, the fieldwork and data collection for the current study was carried out by B.Psych Registered Counsellor students and psychology masters students from the Nelson Mandela Metropolitan University (NMMU). Students were trained in both the

semi-structured interview procedure as well as the capturing of verbal data in order to ensure accuracy and consistency in the data collection. As in previous years of this study, each student initially interviewed children under supervision and once students were evaluated as competent, they were allowed to interview children on their own.

The CAQ interviews usually take between 10 and 15 minutes to complete and were conducted at the participating schools at a pre-determined time. These interviews took place individually and outside the classroom, in a place away from other children to avoid distraction. Where it was not possible to interview the child at school, a time was arranged with the parent or guardian of the child and the interview was conducted in the child's home. In the cases of participants who no longer resided in the Metropole, telephonic interviews were conducted in order to ensure a lower attrition rate. The CAQ semi-structured interview data was then captured, scored and linked to the assessment data from previous years. For the purpose of the present study only data pertaining to the 9 to 13-year old age period was coded and analyzed. After the completion of this research study, group feedback in the form of a general report was sent to participating schools and parents.

Ethical Considerations

Many researchers have outlined the importance of ethical practices when conducting research (Craig & Baucum, 2002; Graziano & Raulin, 2000; Oliver, 2003). Researchers have a duty to respect the rights and dignity of the participants and ensure that they come to no harm. This requires that researchers abide by certain ethical principles and codes of conduct in order to carry out research in a morally acceptable way (Oliver, 2003; Struwig & Stead, 2001). In psychology, ethical considerations in research are outlined in the psychology profession's ethical code (Professional Board for Psychology, 2002) and should be abided by at all times.

As this study forms part of an ongoing longitudinal study, the same ethical guidelines were used as had previously been used by researchers involved in the project (Cox, 2004; Crause, 2006; Dean, 2001; Olivier, 2004). Additionally, the procedures for seeking permission were conducted in accordance with the code of ethics for research of the Nelson Mandela Metropolitan University. These procedures have previously been approved by the university's Human Ethics Committee for this longitudinal research project.

Informed consent

The issue of informed consent may be the most important ethical consideration in research due in part to how much it is emphasised in the psychology profession's ethical code. Informed consent involves providing participants with an accurate perception of the process, possible risks of participation and what the information gained will be used for. Participants need to be able to make a free and informed choice about their participation in any given study (Oliver, 2003; Professional Board of Psychology, 2002).

All participants were adequately informed of the process of the study, what participation would involve and what would happen to the information they provided. Furthermore, participants were informed that participation was voluntary and they could withdraw at any time. Participants were provided with a contact telephone number for the researcher in case of any queries. Permission for the research study was obtained from the NMMU, schools, parents and children involved in the study and consent was obtained from the parents of each child participating in the study prior to the interview.

Coercion

Coercion in terms of ethical research refers to forcing or pressurising a member of the population under study to take part in the research. This is in direct contradiction to the freedom to participate and to withdraw at any point in the research process (Struwig & Stead, 2001). Participation in the present study was voluntary and no coercion was placed on

parents or children to participate. All prospective participants were treated with respect. They were thanked for their interest and time irrespective of whether or not they considered participating. No participant was harmed during this study.

Confidentiality

Confidentiality of information and participant details are of the utmost importance, particularly considering the nature of the information provided in psychological research. Confidentiality refers to data being kept safe, where others may not have access to it, and that the data be used only for the purposes of the study (Oliver, 2003; Professional Board for Psychology, 2002; Struwig & Stead, 2001).

This study did not provide for anonymity, as the researcher had the names and contact addresses of all participants in order to send the biographical questionnaires and to post off feedback. However, all data (both written and computerised) was kept locked up or password protected in order to ensure confidentiality. Also, only individuals directly involved with the research project had access to such information. Furthermore, while anonymity cannot be ensured for the participants, as one of the objectives of this research is to follow the same children longitudinally, confidentiality of all data has been maintained, and the results used solely for research purposes.

Feedback

Providing feedback to participants is a means of ensuring that participants remain informed and willing to participate in longitudinal research. This is a vital aspect of treating participants with dignity. Group feedback was provided to the participating schools and children's parents in the form of a general written report. Previous studies in this longitudinal research project have indicated the value of this feedback.

Data Coding

Data coding refers to how information is grouped together in themes for further analysis (Neuman, 2006; Struwig & Stead, 2001). In order to quantify the occupational aspirations of the children, their responses were coded according to Holland's (1985) classification system of occupational interest types (Cox, 2004; Crause, 2006; Dean, 2001; Olivier, 2004). The responses were coded by the researcher collecting the data each year. For the five years of the present study, the data coding was checked for accuracy by another researcher involved in the study.

Holland's theory forms part of the person-environment fit paradigm and proposes a match between a person's personality with a specific work environment that involves the same abilities and interests (Nel, 1999; Watson & Stead, 2006). These personality types and environments interact as individuals strive to find a compatible work environment that allows them to express their values, skills, competencies and attitudes (Carney & Wells, 1998). Three basic assumptions underlie Holland's entire theory: that people are capable of making rational decisions; that people and environments differ in reliable, meaningful and consistent ways; and that the greater the congruence between the personality and environment type, the greater the chances of success (Carney & Wells, 1998; Watson & Stead, 2006).

Holland (1985) identified six modal personality types and matching work environments, stating that most people can be fitted into one of these six types. The theory states that individuals develop a preference for a certain type as a result of their interests and competencies, which in turn stem from their interaction with peers, biological heredity, parents, social class, culture and the physical environment. Holland's types (Realistic, Investigative, Artistic, Social, Enterprising and Conventional) can be positioned on a hexagon in fixed positions, forming the acronym RIASEC in a clockwise manner (Nel, 1999; Watson

& Stead, 2006).   The six personality types and their matching work environments are described below.

Realistic type

Realistic people are technical and athletic people who tend to be practical, like working with their hands and prefer outdoor work, using tools and machinery. They often prefer working on their own, and are quite independent.

Investigative type

Investigative people are critical thinkers who are rational and logical. They prefer to work on their own and like careers where they can work with facts, solve problems and do research, often showing an interest in the sciences.

Artistic type

Artistic people are creative, artistic, spontaneous and intuitive. They prefer working with ideas and imagination and do not enjoy routine work. These people can usually communicate well, like being around people and have an appreciation for art in all forms.

Social type

Social people are co-operative, idealistic, caring and friendly. They tend to be sensitive and can communicate well with others. They enjoy being around people and building relationships and usually enjoy instructing, teaching and counselling.

Enterprising type

Enterprising people are ambitious, competitive and optimistic. They are energetic, good at achieving goals, have good interpersonal skills and are able to influence and lead others. They are usually involved in business and management fields.

Conventional type

Conventional people are conscientious, systematic, ordered and dependable. They like routine and structure and usually have an eye for detail. They often prefer computational and figure work and like an office setting.

Holland's typology of occupations was not originally developed for use with children. However, it is not the theory that is being applied to the children in this study, but rather the system for coding occupations of interest. In addition, this classification system has been used successfully in the previous years of this longitudinal study to classify and code the occupational aspirations and perceptions of children (Cox, 2004; Dean, 2001; Olivier, 2004). This model was first used in this study as most South African occupations have been coded in the South African Dictionary of Occupations (Taljaard & Von Mollendorf, 1987) according to Holland typological codes. The information obtained from the interview was coded using a three letter typology code, with the first letter in the code representing the major occupational type. It is this major type that was used for comparison with previous years of the study and it is only this first letter or major type that was reported on.

 In addition, the RIASEC model was used to code the status level of the children's chosen occupation, using the status levels provided in the South African Dictionary of Occupations (Taljaard & Von Mollendorf, 1987). These status codes ranged from five (an occupation requiring less than high school education) through to one (with an occupation requiring some form of post-secondary education) and can be found in Table 1. When children indicated that they were interested in more than one occupation, only their first choice was coded for the purposes of this study.

Table 1

Status codes for occupations

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

Data Analysis

As this study is exploratory-descriptive in nature, descriptive statistics were used in order to provide base line information on the occupational aspirations and gender stereotypes of a group of South African children. Descriptive statistics are used to organise, summarise, simplify and describe data (Gravetter & Forzano, 2006; Gravetter & Wallnau, 1999). Descriptive statistics summarize raw data in a more easily interpreted manner, often through the use of averages, graphs and tables (Gravetter & Wallnau, 1999; Neuman, 2006; Struwig & Stead, 2001). An independent statistical consultant was used to calculate the statistics in order to increase the objectivity of the results.

The aim of the statistical analysis was to provide a description of the occupational aspirations and perceptions of the 39 children in the study over a five year period, as well as how these aspirations and perceptions may have changed in terms of their occupational status levels over this time period. Additionally, descriptive statistics were employed to describe the extent to which the participants' gender perceptions of occupations, in terms of gender stereotyping and traditionality, may have changed over time.

As the data was categorical or nominal in nature, frequency counts were used to report on the coded typology and status level of the occupational aspirations according to

gender and age. These frequency counts were then converted into percentages to enhance the description and understanding of the data. The children's occupational aspirations and expectations over the five year period were further cross-tabulated with respect to Holland's typology (1985) for occupational and status levels. Thus the typology and status level of children's occupational aspirations were tracked over a five year period.

Frequency counts and percentages were used to determine if any changes had occurred in the occupational gender perceptions of the children, both in terms of gender stereotyping and gender traditionality. Furthermore, as the participants for the present study are currently in Gottfredson's third stage of occupational development (i.e., orientation to social value and status), content analysis was also used to identify themes and analyse the data gleaned from question 1 (c) of the CAQ in the last year of the study (at 13 years of age).

Content analysis is defined as a method of studying and analysing written and oral communications in a systematic, objective and quantitative way to assess certain psychological variables (Aiken, 2000). The content analysis was performed by the researcher. Having extracted the themes, they were reflected against Gottfredson's criteria for the social evaluation stage of development. This means that it was explored whether the reason for an occupational aspiration could be linked to increasing awareness of social class and prestige levels (Gottfredson, 1981, 1996, 2002, 2005).

Lastly, in order to report on the fourth aim of this study, the reflection question of the CAQ was content analysed for each child at 13 years of age. This provided a description of the themes and trends the children in the study have shown in terms of their career choices over the entire eight years of the longitudinal study. Descriptive statistics were also used to describe the reflections of the participants for this particular question.

Summary

This chapter has focused on the research methodology of the study in question. Specifically, the research design, sampling techniques, assessment measures, research procedure and methods for data analysis and coding were outlined and the demographics of the participants and the method used to obtain consent discussed. Ethical considerations used in the study were also examined. The findings of this present study and a discussion of these results is presented in the next chapter.

CHAPTER 5

Results

With a theoretical underpinning in place, having reviewed the extant literature in the field and having discussed the methodological considerations, the stage has been set to present the results of the current study. These results attempt to explore and describe possible changes in the occupational aspirations and perceptions of a sample of South African children over a five year period.

The purpose of this chapter is to describe the results of this study. This description is structured according to the specific aims, as discussed in the previous chapter. Specifically, the chapter initially reports the results of the occupational aspirations and perceptions of the total sample over the five year period under study. This is followed by a description of how these aspirations have developed over the five years in terms of their occupational typology. Furthermore, how the sample's occupational aspirations and perceptions have changed in terms of the occupational status level is also described. In addition, attention is also paid to how these children's gender perceptions, with specific reference to occupational gender stereotypes and gender traditionality, have changed over the five years under study. Lastly, this chapter provides the results of a qualitative analysis of the children's reflections on their own career development throughout the course of this research.

Occupational Aspiration Typology over Time

Total sample

The first aim of the current study was to explore and describe how the participants' occupational aspirations may have changed over the five-year period under study. In this section of the chapter, the findings of possible change in occupational aspirations over time for the entire sample as well as each gender separately are presented. Specifically, this section focuses on the trends that have emerged over the last five years of this longitudinal

research project. These results are described for the sample as a whole as well as for the intra-individual changes that may have occurred from year to year. The results for the total sample over the five years are described according to Holland's typological classification system of Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. In previous phases of this longitudinal project, a fantasy category was included in addition to Holland's typology (Dean, 2001; Olivier, 2004). However, in later studies the use of this category was discontinued as the children no longer selected fantasy-type occupations (Cox, 2004; Crause, 2006). The use of the fantasy category has again been excluded in the present research, although the use of a 'no choice' category has been retained.

Throughout the duration of the present study most children were able to articulate an aspiration to a particular occupation, with only a few participants unable to express an aspiration. A summary of the frequency counts for the occupational aspirations of the total sample of 39 participants over the five year period is presented in Table 2. Percentages are provided below the frequency counts.

In terms of Holland's typology, the Social type was consistently found to be the most common aspiration for the participants' occupational aspirations throughout the five year period. While the popularity of the Social type occupations seems to have declined in the first few years of the study, it appeared to increase in popularity over the last two years. This could be due to the high number of boys who have aspired to professional sports occupations (a Social typology) in recent years.

The second and third most popular aspirations were for the Investigative and Artistic typologies. This was followed by the Realistic, Enterprising and Conventional categories. It was interesting to note that, while the Investigative category remained higher than the Artistic category for the first four years of the present research, the Artistic category was higher than the Investigative category in the last year of the study. Furthermore, the Enterprising and

Conventional typologies showed the least difference in frequency counts across the five years and remained the least popular aspirations over the five years. It can also be seen from Table 2 that the number of children who were unable to name an aspiration to a specific occupation remained consistently low.

Table 2

Frequency counts for occupational aspiration typology over five years: Total sample

Holland's typology	Age				
	9 years	10 years	11 years	12 years	13 years
Realistic	2 (5.1%)	4 (10.3%)	5 (12.8%)	4 (10.3%)	3 (7.7%)
Investigative	10 (25.6%)	7 (17.9%)	10 (25.6%)	10 (25.6%)	6 (15.4%)
Artistic	6 (15.4%)	5 (12.8%)	4 (10.3%)	5 (12.8%)	8 (20.5%)
Social	17 (43.6%)	16 (41.0%)	12 (30.8%)	14 (35.9%)	15 (38.5%)
Enterprising	1 (2.6%)	3 (7.7%)	3 (7.7%)	2 (5.1%)	2 (5.1%)
Conventional	1 (2.6%)	3 (7.7%)	3 (7.7%)	1 (2.6%)	3 (7.7%)
No Choice	2 (5.1%)	1 (2.6%)	2 (5.1%)	3 (7.7%)	2 (5.1%)

The majority of participants were found in the Social, Investigative and Artistic typologies and the combined number of participants in these three typologies represented 84.6% of the total sample at age 9 years, 71.7% at age 10 years, 66.7% at age 11 years, 74.5% at age 12 years and 74.4% at age 13 years. The popularity of these typologies implies that participants were most interested in fields that concerned people, art and science. It is

worth noting that over 50% of the 39 participants consistently fell into the top two categories of Social and Investigative types over the five years.

In this section of the chapter the intra-individual changes in occupational aspirations over the five years under study are reviewed. These changes are summated in Table 3. As this study has focused specifically on participant data between the ages of 9 and 13 years, the 9 year old data was used as a baseline. The occupational typology the child aspired to at age 9 years is indicated in the left column of the table. The stability of these occupational aspirations was tracked by indicating possible changes in ensuing years of the study in the columns moving, by year, to the far right hand column of the table. For example, two participants were unable to express an aspiration at age 9 years. At age 10, one of these children aspired to a Social type occupation, while the other expressed a desire to enter an Enterprising type occupation. At age 11, the first child had changed aspirations to a Realistic type occupation, while the child who had previously aspired to an Enterprising type occupation now aspired to a Social type occupation. By age 12, one participant continued to aspire to a Realistic type occupation, while the other child expressed an aspiration to an Investigative type career. In the final year of the study, both these participants changed occupational aspiration types again, this time to Social and Artistic type occupations. The other columns can be read in a similar fashion.

Table 3

Frequency counts for intra-individual occupational aspiration typology over five years: Total sample

Age									
9 years		**10 years**		**11 years**		**12 years**		**13 years**	
Typology	**n**	**Typology**	**n**	**Typology**	**n**	**Typology**	**n**	**Typology**	**n**
Realistic	2	Realistic	1	Investigative	1	Investigative	1	Investigative	1
		Social	1	Investigative	1	Social	1	Investigative	1
Investigative	10	Realistic	3	Realistic	2	Realistic	1	Realistic	1
						Investigative	1	Investigative	1
				Social	1	Social	1	Social	1
		Investigative	4	Investigative	2	Investigative	2	Social	2
				Social	1	Social	1	Social	1
				Artistic	1	Realistic	1	Artistic	1
		Artistic	1	No Choice	1	No Choice	1	Social	1
		Enterprising	1	Artistic	1	Social	1	Social	1
		Conventional	1	Conventional	1	Social	1	Conventional	1
Artistic	6	Artistic	4	Artistic	1	Artistic	1	Artistic	1
				Investigative	2	Investigative	1	Social	1
						Enterprising	1	Social	1
				Conventional	1	No Choice	1	No Choice	1
		Social	1	Investigative	1	Artistic	1	Artistic	1
		Investigative	1	Artistic	1	Artistic	1	Investigative	1
Social	17	Investigative	2	Social	2	Social	2	Social	2
		Social	13	Social	7	Social	6	Social	3
								Artistic	1
								Enterprising	2
						Artistic	1	Artistic	1
				No Choice	1	Artistic	1	Artistic	1
				Realistic	1	No Choice	1	Realistic	1
				Investigative	3	Investigative	3	Investigative	2
								Artistic	1
				Enterprising	1	Social	1	Conventional	1
		Conventional	1	Enterprising	1	Realistic	1	No Choice	1
		No Choice	1	Enterprising	1	Enterprising	1	Realistic	1
Enterprising	1	Enterprising	1	Investigative	1	Investigative	1	Investigative	1
Conventional	1	Conventional	1	Conventional	1	Conventional	1	Conventional	1
No Choice	2	Social	1	Realistic	1	Realistic	1	Social	1
		Enterprising	1	Social	1	Investigative	1	Artistic	1

Due to the small sample size it was not possible to perform inferential statistics. However, several interesting trends were noted. Only 5 of the 39 (i.e., 12.8%) children aspired to the same typology across the five years of the study. This suggests that there is little stability in terms of participants consistently aspiring to the same typology over the five year period. This observation is further underlined by the fact that while 17 participants initially aspired to Social occupations at age 9 years, approximately half (i.e., 7) of these participants still aspired to Social occupations at age 11 years. This number further dropped to 3 participants by age 13 years. However, some stability was seen in the Social and, to a lesser extent, in the Investigative typologies if the last three years of the study are considered. Children aspiring to these two typologies at age 11 years seemed to largely continue aspiring to these same typologies at ages 12 and 13 years. In addition, it is of interest to note that the only child to aspire to a Conventional occupation at age 9 years continued to aspire to this Conventional typology in successive years of the research. These trends suggest that the occupational aspirations of the children may have begun to stabilize around age 11 or 12 years.

In summary, as indicated in the results presented in Table 2 previously, the combined number of children who aspired to Social, Artistic and Investigative type careers remained relatively stable across the five years under study, with the Social typology consistently being the most popular typology aspired to. However, when the intra-individual aspirations of each child were examined in Table 3 it became clear that little consistency in aspirational typology existed. In other words, participants tended to show inconsistent patterns of aspirations when compared to their first occupational aspiration typology at age 9 years.

While there appears to be little intra-individual stability in occupational aspiration typology across the five year period, some stability in the last three years has been noted. These findings suggest that the children in this study have begun to stabilize the occupational

typology of their aspirations as they grow older. The next section describes changes in occupational aspiration typology in terms of gender differences.

Girls

The changes in occupational typology over the five years under study for the 17 girls is summarised in Table 4.   These frequency counts are divided according to Holland's typologies, with the additional category of 'no choice' for those participants expressing no aspiration. Percentages are included below the frequency counts. While intra-individual changes were tracked for the sample as a whole, the researcher did not track individual changes for each gender because of the smaller sample sizes. This is consistent with the previous phase of this longitudinal research (Crause, 2006).

Table 4

Frequency counts for occupational aspiration typology over five years: Girls

Holland's typology	Age				
	9 years	10 years	11 years	12 years	13 years
Realistic	0 (0.0%)	1 (5.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Investigative	2 (11.8%)	3 (17.6%)	6 (35.3%)	5 (29.4%)	4 (23.5%)
Artistic	5 (29.4%)	4 (23.5%)	2 (11.8%)	4 (23.5%)	5 (29.4%)
Social	8 (47.1%)	7 (41.2%)	6 (35.3%)	5 (29.4%)	6 (35.3%)
Enterprising	1 (5.9%)	1 (5.9%)	0 (0.0%)	1 (5.9%)	0 (0.0%)
Conventional	1 (5.9%)	1 (5.56%)	2 (11.8%)	1 (5.9%)	1 (5.9%)
No Choice	0 (0.0%)	0 (0.0%)	1 (5.9%)	1 (5.9%)	1 (5.9%)

While all the girls were able to express an occupational aspiration at age 9 and 10 years, there was one girl who was unable to do so in each of the latter three years of the current study. The Social typology was consistently the most popular aspiration across all five years, while the Investigative and Artistic typologies were also continuously aspired to. Girls aspiring to Enterprising and Conventional occupations remained consistently low over the five years, while the Realistic category was the least popular aspiration over the five years.

Another trend in the occupational aspirations of the girls is the decline in the popularity of the Social typology, even though it remains the most prevalent aspiration. This may be linked to the increase in aspirations towards more Investigative and Artistic type occupations. On the whole, it appears as if the girls in this study have begun to aspire to a greater variety of occupations with increasing age, as indicated by the greater spread of occupational aspiration typologies between ages 9 and 13 years. With the results of the girls having been described, attention now shifts to a description of how the occupational aspiration typology of the boys has changed over time.

Boys

A summary of the frequency counts of the occupational aspirations, as indicated by Holland's typology, for the 22 boys can be found in Table 5. Percentages are indicated below the frequency count for each year. As with the girls, the additional category of 'no choice' has been included. Furthermore, intra-individual changes for each boy were not tracked due to the small sample size; thus only the male gender as a whole is discussed.

As can be seen in Table 5, not all the boys were able to express an occupational aspiration in each year of the study. In each year there was one boy who was unable to express an occupational aspiration. Similar to the girls, the most popular occupational typology for the boys in the present study was the Social type category across the five years.

In fact, more boys than girls aspired to Social typologies over time. The Investigative and Realistic typologies were the second and third most popular categories. Few boys aspired to occupations in the Enterprising and Conventional typologies throughout the five years under study and the Conventional typology was consistently the least aspired to.

Table 5

Frequency counts for occupational aspiration typology over five years: Boys

Holland's typology	Age				
	9 years	10 years	11 years	12 years	13 years
Realistic	2 (9.1%)	3 (13.6%)	5 (22.7%)	4 (18.2%)	3 (13.6%)
Investigative	8 (36.4%)	4 (18.2%)	4 (18.2%)	5 (22.7%)	2 (9.1%)
Artistic	1 (4.5%)	1 (4.5%)	2 (9.1%)	1 (4.5%)	3 (13.6%)
Social	9 (40.9%)	9 (40.9%)	6 (27.3%)	9 (40.9%)	9 (40.9%)
Enterprising	0 (0.0%)	2 (9.1%)	3 (13.6%)	1 (4.5%)	2 (9.1%)
Conventional	0 (0.0%)	2 (9.1%)	1 (4.5%)	0 (0.0%)	2 (9.1%)
No Choice	2 (9.1%)	1 (4.5%)	1 (5.9%)	2 (9.1%)	1 (4.5%)

The Investigative type category demonstrated the greatest variability across the years and seemed to decrease in popularity over time. Furthermore, the Artistic typology increased in popularity over time. These varied results could be further evidence that the boys in this study have begun to aspire to a greater variety of occupations with increasing age. The

results of the participants' occupational aspirations with reference to their status levels are presented in the next section.

Occupational Aspiration Status Level over Time

Total sample

The second aim of the current study was to explore and describe how the participants' occupational aspirations and perceptions may have changed in terms of their status levels over the five year period. These are presented for the sample as a whole, as well as for each gender separately. Occupational aspiration status levels were coded according to Holland's (1985) status level classification system. These status levels were described in the Methodology chapter. Categories used included 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. A 'no choice' category was also included for those participants who were unable to express an aspiration and who, for this reason, could not be assigned an occupational status level.

Specifically, this section of the results focuses on trends that have emerged over the last five years of this longitudinal research project in relation to the sample as a whole as well as intra-individual changes. Table 6 provides a summary of the frequency counts for occupational aspiration status levels over the five years for the total sample of 39 participants.

Status levels were scored on a five point scale, ranging from unskilled (requiring less than secondary school education) to highly skilled (requiring some form of tertiary education). As is evident in Table 6, most children in the present study have consistently aspired to high status or professional occupations in all five years. In addition, the number of children aspiring to high status occupations has remained relatively constant, except for the drop observed in the status levels for 12 year olds. This decrease corresponded to an increase in popularity in middle status occupations in that year. Skilled, semi-skilled and unskilled

occupations have continuously been unpopular with the children across all five years under study. This was true particularly of unskilled occupations, which have been the least popular aspiration status level as no child aspired to an unskilled occupation in any of the five years of this study.

Table 6

Frequency counts for occupational aspiration status levels over five years: Total sample

	Age				
Status Level	9 years	10 years	11 years	12 years	13 years
Unskilled	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Semi-skilled	1 (2.6%)	2 (5.1%)	0 (0.0%)	1 (2.6%)	0 (0.0%)
Skilled	0 (0.0%)	0 (0.0%)	1 (2.6%)	1 (2.6%)	1 (2.6%)
Middle-level	3 (7.7%)	2 (5.1%)	1 (2.6%)	6 (15.4%)	3 (7.7%)
High-level	33 (84.6%)	34 (87.2%)	35 (89.7%)	28 (71.8%)	33 (84.6%)
No Choice	2 (5.1%)	1 (2.6%)	2 (5.1%)	3 (7.7%)	2 (5.1%)

As previously mentioned, the vast majority of the sample aspired to a high status or professional category throughout the five years under study. There has consistently been a considerable difference between this status level category and the next most popular status level of middle-level status occupations. In the final year of this study, this difference was 77%. These findings suggest relative stability in terms of the children's occupational aspirations towards high status and professional occupations. Furthermore, the second most popular category has continuously been the middle-level status or semi-professional level.

Together, the high and middle status level categories accounted for approximately 92% of aspirations in the first, second and third year of the study, 87% in the fourth year and 92% of the aspirations in the fifth year of the present study. This suggests that the children in this study have consistently aspired to higher skill level occupations and that their occupational status levels have remained constant across the five years under study.

The participants' intra-individual changes in occupational aspiration status levels over the five years under study will now be reported. These changes are summated in Table 7 which provides the frequency counts for the intra-individual changes in occupational aspiration status level for the total sample over the five years under study.

Table 7

Frequency counts for intra-individual occupational aspiration status levels over five years: Total sample

Age									
9 years		**10 years**		**11 years**		**12 years**		**13 years**	
Status Level	**n**	**Status Level**	**n**	**Status Level**	**n**	**Status Level**	**n**	**Status Level**	**n**
High	33	High	31	High	28	High	22	High	22
						Middle	3	High	1
								Middle	2
						Skilled	1	No Choice	1
						Semi-skilled	1	High	1
						No Choice	1	High	1
				No Choice	2	No Choice	1	High	1
						High	1	High	1
				Skilled	1	Middle	1	Middle	1
				High Middle	1	High	1	High	1
		Semi-skilled	1			Middle	1	High	1
		No Choice	1		1			Skilled	1
Middle	3	High	2	High	2	High	2	High	2
		Middle	1	High	1	No Choice	1	High	1
Semi-skilled	1	Semi-skilled	1	High	1	High	1	High	1
No Choice	2	High	1	High	1	Middle	1	High	1
		Middle	1	High	1	High	1	High	1

Twenty-two (i.e., 56.4%) of the children aspired to the same occupational status level over the five years of the study. This suggests a reasonable degree of stability of the status level of occupations aspired to over time. At age 9 years, two children were unable to express an occupational aspiration and thus no status level code could be assigned to them. However, over the course of the last three years, these two children have consistently aspired to high status occupations. None of the children participating in the current study have aspired to unskilled occupations in the five years under review. Similarly, none of the children have aspired to skilled occupations in the five years. One child in the study aspired to a semi-skilled occupation at age 9 and 10 years and subsequently aspired to high level occupations in years three, four and five of the study.

Two children initially aspired to middle status level occupations at age 9 years. By age 10 years, one of these children aspired to a high status occupation and has continued to do so in the last three years of the study. The other child again expressed an aspiration in the middle status level at age 10 years, but aspired to a high status level occupation at age 11 years and was unable to express an aspiration at age 12 years. At age 13 years, this child again expressed an interest in a high status occupation. This suggests limited stability of the middle and semi-skilled occupations.

High status occupations have consistently been the most popular aspiration over the course of the five years of this study. At age 9 years, 33 of the 39 participants aspired to occupations in the high status level category. This accounted for 84.6% of the total sample. In the following year 31 of these participants (79.5%) continued to express a preference for professional occupations and by age 11 years this number had dropped to 28 (71.8%). In the last two years of this study, the number of children who continued to aspire to high status occupations was 22. This accounted for 56.4% of the total sample. It is important to note that these figures are only for participants that first aspired to professional occupations at age

9 years and continued to do so across all five years under study. Some children who initially aspired to high status occupations expressed an aspiration to a different status level in ensuing years, but later aspired to high status occupations again. This suggests that the children's aspirations towards high status or professional occupations remained stable throughout the five years under study. Fewer children aspired to lower status level occupations with increasing age. The discussion now turns to a description of the occupational aspiration status levels for girls and boys separately.

Girls

A summary of the frequency counts for the occupational aspiration status levels over the five years of this study for the 17 girls is found in Table 8. A 'no choice' category was again included in order to reflect the number of girls who were unable to express an occupational aspiration. The aspirations of these participants could not be coded according to Holland's (1985) classification of status levels.

Table 8

Frequency counts for occupational aspiration status levels over five years: Girls

Status Level	Age				
	9 years	10 years	11 years	12 years	13 years
Unskilled	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Semi-skilled	0 (0.0%)	1 (5.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Skilled	0 (0.0%)	0 (0.0%)	1 (5.9%)	0 (0.0%)	0 (0.0%)
Middle-level	1 (5.9%)	0 (0.0%)	0 (0.0%)	3 (17.7%)	2 (11.8%)
High-level	16 (94.1%)	16 (94.1%)	15 (88.2%)	13 (76.5%)	14 (82.4%)
No Choice	0 (0.0%)	0 (0.0%)	1 (5.9%)	1 (5.9%)	1 (5.9%)

At ages 9 and 10 years, all girls expressed aspirations to a specific occupation. However, at ages 11, 12 and 13 years one of the girls was unable to express an occupational aspiration. Most girls have consistently aspired to high status level or professional occupations throughout the five year period and the percentage of participants aspiring to this category was more than 75% for all five years under study. However, it should be noted that the numbers of girls in the high status category dropped in the last two years of the present study. This has corresponded to an increase in the number of girls who aspired to middle status occupations or who were unable to express an occupational aspiration. Similar trends were noted in the total sample and for the boys. None of the girls aspired to unskilled occupations across the five year period, and only one girl aspired to a semi-skilled or skilled occupation. Again, these findings correlate to trends noted in the total sample and for the boys.

Boys

The frequency counts for the occupational aspiration status levels for the 22 boys over the five year period can be found in Table 9. A 'no choice' category was included in addition to the five categories of Holland's (1985) occupational status levels. These participants could not be coded according to the status level classification system.

Throughout the five years under study there have consistently been one or two boys who have not aspired to a specific occupation and whose status level could consequently not be coded. The most popular status level aspired to across all five years under study was the high status level or professional category. High status occupations were consistently aspired to by more than 75% of the boys, except for 12-year-old boys, where the number who aspired to high status level occupations dropped. This corresponded to an increase in the number of boys who aspired to middle-level status occupations. Similar trends were found for the total sample and the girls.

Table 9

Frequency counts for occupational aspiration status levels over five years: Boys

Status Level	Age				
	9 years	10 years	11 years	12 years	13 years
Unskilled	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Semi-skilled	1 (4.5%)	1 (4.5%)	0 (0.0%)	1 (4.5%)	0 (0.0%)
Skilled	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (4.5%)	1 (4.5%)
Middle-level	2 (9.1%)	2 (9.1%)	1 (4.5%)	3 (13.6%)	1 (4.5%)
High-level	17 (77.3%)	18 (81.8%)	20 (90.9%)	15 (68.2%)	19 (86.4%)
No Choice	2 (9.1%)	1 (4.5%)	1 (4.5%)	2 (9.1%)	1 (4.5%)

The middle-level status category was the second most popular aspiration and the number of boys who aspired to this category tended to be higher than the number of girls who aspired to middle-level status occupations. Unlike the girls, no marked increase in the number of boys who aspired to the middle-level status category was noted. Furthermore, in all five years no boy aspired to an occupation in the unskilled category. The skilled category appeared equally unpopular, with no boys aspiring to this category in the first three years of the present study, and only one boy who indicated an aspiration at this status level at ages 12 and 13 years.

These results indicate a considerable level of occupational status level consistency for the boys. Similar trends were found for the girls and for the sample as a whole. Our attention now turns to a review of the children's occupational aspirations with regards to Gottfredson's stage of social valuation.

Occupational Aspirations according to Gottfredson's Stage of Social Valuation

Content analysis was used to identify themes and to analyse the data gleaned from question 1(c) of the CAQ in the last year of the study (at 13 years old). It was decided to only analyse the results of the 13 year olds as this data was the most recent and it was expected that all participants would have moved into Gottfredson's third stage known as *orientation of social value and status*, by this age. The content analysis was performed by the researcher and the themes extracted were reflected against Gottfredson's criteria for the social evaluation stage of development. This enabled the researcher to explore whether the reason forwarded for the choice of occupational aspiration could be linked to increasing awareness of social class and prestige levels (Gottfredson, 1981, 1996, 2002, 2005).

A number of themes were evident in the analysis of the 13 year olds' data, with some participants naming reasons for their aspirations that fell into more than one category. For this reason, total frequency counts add up to more than the 39 participants. Frequency counts of the major themes are provided in Table 10.

From Table 10, it is clear that the most frequently named reasons for a particular occupational aspiration were because the aspiration reflected the child's interests and abilities. Other popular reasons for occupational aspirations included enjoyment, the value of helping others and the desire to travel. These reasons would all seem to fall more within Gottfredson's fourth stage (ages 14 years and older), known as *orientation to the internal, unique self*. At this stage adolescents start to incorporate more personal attributes such as interests, capacities, values and abilities as further considerations in their career choices (Gottfredson, 2002, 2005; Helwig, 2004; Sharf, 2006). These results can be understood if one considers that the participants, at age 13 years, would theoretically be moving out of Gottfredson's third stage and should therefore start to display elements consistent with Gottfredson's fourth stage of cognitive maturity.

Table 10

Frequency counts of content themed reasons for occupational aspirations

Content Themes	Number of Responses
Interests and Likes	14
Abilities	8
Financial and Status Reasons	7
Enjoyment and Fun	7
Plays and Enjoys Sport	6
Wanting to Help People	5
Wanting to Travel	4

A number of children listed financial or status reasons for their occupational aspiration, although this frequency count was not high overall. Considering Gottfredson's theory, which states that children in the social valuation stage would be expected to aspire to occupations based on social status, one might have expected more children to have stated money or status as reasons for their occupational aspirations. However, if one considers that the majority of children consistently aspired to high status occupations throughout this stage, and seemed to be using their interests and abilities to circumscribe their aspirations within this status level, support for Gottfredson's theory can be found. In addition, a number of children named enjoyment and ability in sport as their reason for aspiring to an occupation as a professional sportsman. This is a highly prestigious occupation in South Africa and would thus indicate that the participants in this study do fall into Gottfredson's third stage. Similarly, the desire to help people was consistently linked to the occupational aspiration of becoming a doctor, another highly prestigious occupation. In the following section the occupational gender stereotyped perceptions of the boys and girls are reported.

Gender Stereotyping of Occupations

The third aim of the present study was to explore and describe how children's occupational perceptions in terms of gender stereotypes and traditional gender roles may have changed over a five year period for the sample as a whole, as well as for each gender group separately. Thus, this section of the chapter reports on whether or not the participants in the sample hold gender-stereotyped views regarding occupations and how these views may have changed over time. This was researched using question 5 of the CAQ in which participants were asked whether or not they thought girls and boys could become any of fourteen different occupations. These responses were recorded on the interview schedule and analysed using percentages. The results can be found in Tables 11, 12, 13 and 14.

Table 11 summarises the data on the gender-stereotyped views girls hold regarding occupations for girls. This table provides frequency counts for the girls' responses as to whether or not girls could become any of fourteen occupations. Table 12 presents the frequency counts for the girls' responses to whether or not boys could undertake these same occupations.

Thereafter, the focus shifts to the gender-stereotyped views boys hold regarding suitable occupations for boys and girls. Table 13 portrays the frequency counts for the boys' responses as to whether or not boys could become any of the fourteen occupations listed in the interview schedule, while Table 14 presents the frequency counts of the boys' responses to whether or not girls could be any of these same occupations. All these tables present data for all five years under study. Occupations are listed in the order presented on the interview schedule in the far left column. Participants' responses were recorded as "yes", "no", or "unsure" (if they were undecided) at the time of the interview. Percentages that were indicative of the majority of responses for a particular occupation are boldfaced within the tables.

As discussed previously, the interview format was changed after Dean's (1998) study to ensure that participants knew what each occupation entailed (Cox, 2004). This was done as Dean (1998) had found that some children were responding to questions without an accurate idea of what the different occupations were. This might have negatively affected the validity of the results. The category of "no occupational information" (NOI) was selected in ensuing years of this study if the child did not know what the occupation entailed. However, in the present study the researcher found that the participants at age 13 years became bored when asked what certain occupations entailed and had been able to explain these occupations for a number of years. Thus the interview format has been changed again and in future years of the study, the category of "no occupational information" will be excluded.

Extent to which girls stereotype occupations

Table 11 provides frequency counts (represented as percentages) indicating the extent to which girls gender stereotype occupations for other girls over the five year period. Table 12 presents the frequency counts (represented as percentages) indicating the extent to which girls gender stereotype occupations for boys over the five year period. It should be noted that not all years add up to 100% due to rounding off.

From the results presented in Table 11 it can be seen that the majority of girls throughout the five years of this study thought that all listed occupations were suitable for girls to do, with percentages consistently over 50%. In general, the girls appeared to become less gender stereotyped in successive years as the percentages of 'yes' responses increased for most occupations. However, some variance in occupations was observed.

At age 9 years, the majority of girls reported that the occupations of Hairdresser, Pop Singer, Author, Doctor, Chemist, Nurse, Police Officer, Teacher and Secretary were suitable for girls, with percentages measuring over 80%.

Table 11

Extent to which Girls stereotype occupations for Girls over five years

Occupation	9yr				10 yr				11 yr				12 yr				13 yr			
	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI
Fire Fighter	**58.8**	41.2	0	0	**70.6**	11.8	11.8	5.9	**70.6**	29.4	0	0	**82.4**	17.6	0	0	**82.4**	17.6	0	0
Hairdresser	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Pop Singer	**88.2**	0	0	11.8	**88.2**	5.9	0	5.9	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Author	**88.2**	0	0	11.8	**94.1**	0	0	5.9	**88.2**	5.9	0	5.9	**100**	0	0	0	**100**	0	0	0
Doctor	**88.2**	11.8	0	0	**88.2**	11.8	0	0	**94.1**	5.9	0	0	**94.1**	5.9	0	0	**100**	0	0	0
Chemist	**94.1**	5.8	0	0	**100**	0	0	0	**100**	0	0	0	**94.1**	5.9	0	0	**100**	0	0	0
Nurse	**100**	0	0	0	**100**	0	0	0	**94.1**	5.9	0	0	**100**	0	0	0	**100**	0	0	0
Police Officer	**94.1**	5.8	0	0	**94.1**	5.9	0	0	**88.2**	5.9	5.9	0	**94.1**	5.9	0	0	**100**	0	0	0
Teacher	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
TV Announcer	**76.5**	5.9	5.9	11.8	**94.1**	5.9	0	0	**94.1**	0	0	5.9	**100**	0	0	0	**100**	0	0	0
Lawyer	**70.6**	17.6	0	11.8	**82.4**	11.8	0	5.9	**94.1**	5.9	0	0	**100**	0	0	0	**100**	0	0	0
Secretary	**94.1**	0	0	5.9	**94.1**	0	0	5.9	**88.2**	0	0	11.8	**100**	0	0	0	**100**	0	0	0
Bank Teller	**76.5**	5.9	0	17.6	**94.1**	0	0	5.9	**94.1**	0	0	5.9	**100**	0	0	0	**100**	0	0	0
President	**58.8**	35.3	0	5.9	**58.8**	35.3	0	5.9	**70.6**	29.4	0	0	**82.4**	17.6	0	0	**88.2**	11.8	0	0

Conversely, the participants seemed less certain that the occupations of Fire Fighter, TV Announcer, Lawyer, Bank Teller and President were suitable for girls. These results may indicate more gender-stereotypical perceptions of these occupations. However, girls at this age demonstrated a lack of occupational information for the occupations of Pop Singer, Author, TV Announcer, Lawyer and Bank Teller, with between 11.8% and 17.6% of the participants lacking information for these occupations, as indicated by the no occupational information responses. The results or these occupations should thus be interpreted with caution.

By age 10 years the girls showed a decrease in gender stereotypical perceptions of what a girl could do, with only the occupations of Fire Fighter (70.6%) and President (58.8%) measuring below 80%. The largest decrease in stereotypical perceptions was for the occupations of TV Announcer and Bank Teller which increased from 76.5% of girls believing these were suitable occupations for other girls to a percentage of 94.1%. This increase seemed to correlate to an increase in occupational information, as the number of 'no occupational information' responses fell at age 10 years. Similar results were reported for girls at age 11 years and, although both the occupations of Fire Fighter and President were below 80%, the number of girls believing that these occupations were suitable for other girls rose to 70.6%. This particular year also saw a continued decrease in 'no occupational information' responses.

At age 12 years, all fourteen occupations were measured above the 80% mark in terms of their suitability for girls. However, the occupations of Fire Fighter and President were both at 82.4% and thus remained considerably below the twelve other occupations, all of which were 94% or higher. Furthermore, this was the first year of the present study in which no girl indicated a lack of occupational information, nor uncertainty about the suitability of any of the fourteen occupations for girls.

In the final year of this study, twelve of the fourteen occupations were found to be at the 100% level. This indicates that the girls were more certain that these occupations were suitable for girls by age 13 years. Only the occupations of Fire Fighter and President failed to reach the 100% level, although both of these occupations were now above the 80% mark. Again, no girl at age 13 years reported a lack of occupational information or any uncertainty about the listed occupations. These results demonstrate that the majority of girls believed that these occupations were suitable for other girls, with a consistent decrease in gender stereotypical perceptions about occupations over the five years of the present study.

The extent to which girls stereotype occupations for boys over the five year period is summarised in Table 12. Girls reported that the occupations of Doctor, Chemist, Police Officer, and Teacher were suitable for boys in all five years of the study. In the final year under study, girls regarded ten of the fourteen occupations as 100% suitable for boys. However, girls held gender stereotypical perceptions regarding the occupations of Nurse and Secretary, believing these occupations to be more unsuitable for boys over the five years of the study.

At age 9 years, results indicated that girls perceived the occupation of Nurse as being particularly unsuitable for boys with the percentage of 'yes' responses reaching only 52.9%. Other occupations below the 80% mark were for TV Announcer, Secretary, and Bank Teller, indicating that girls were less certain about the suitability of these careers for boys. Girls seemed particularly uncertain about the occupation of Secretary, with 17.6% of girls believing this to be unsuitable for boys at age 9 years. However, these results should be interpreted with caution as girls expressed a lack of occupational information with regards to the occupations of Pop Singer, Author, TV Announcer, Lawyer and Bank Teller.

Table 12

Extent to which Girls stereotype occupations for Boys over five years

Occupation	9yr				10 yr				11 yr				12 yr				13 yr			
	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI
Fire Fighter	**100**	0	0	0	**94.1**	0	0	5.9	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Hairdresser	**100**	0	0	0	**100**	0	0	0	**94.1**	5.9	0	0	**94.1**	0	5.9	0	**88.2**	11.8	0	0
Pop Singer	**88.2**	0	0	11.8	**94.1**	0	0	5.9	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Author	**88.2**	0	0	11.8	**94.1**	0	0	5.9	**94.1**	0	0	5.9	**100**	0	0	0	**100**	0	0	0
Doctor	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Chemist	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Nurse	**52.9**	47.1	0	0	**52.9**	41.2	5.9	0	**52.9**	47.1	0	0	**64.7**	29.4	5.9	0	**76.5**	23.5	0	0
Police Officer	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Teacher	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
TV Announcer	**76.5**	5.9	5.9	11.8	**100**	0	0	0	**94.1**	0	0	5.9	**100**	0	0	0	**100**	0	0	0
Lawyer	**82.4**	5.9	0	11.8	**94.1**	0	0	5.9	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Secretary	**70.6**	17.6	5.9	5.9	**76.5**	17.6	0	5.9	41.1	**47.1**	0	11.8	**70.6**	29.4	0	0	**76.5**	23.5	0	0
Bank Teller	**76.5**	0	0	23.5	**94.1**	0	0	5.9	**94.1**	0	0	5.9	**94.1**	5.9	0	0	**88.2**	11.8	0	0
President	**94.1**	0	0	5.9	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0

In the following year of the study, at age 10 years, girls expressed a slight decrease in gender stereotyped occupational views with only the occupations of Nurse and Secretary found to be below the 80% mark. In addition, occupational information levels were found to have increased for occupations that were previously lacking in this regard. Girls seemed particularly gender stereotyped regarding the suitability of Nurse as an occupation for boys, with only 52.9% of the girls reporting a 'yes' response at age 10 years.

Similar results were reported at age 11 years, when the occupations of Nurse and Secretary were still perceived as not suitable for boys. In addition, these were the only two occupations below the 94.1% level at age 11 years. This particular year showed an increase in gender stereotypical perceptions with the percentage of girls reporting that Nurse was a suitable occupation for boys not increasing, and the percentage of girls reporting on the suitability of Secretary as an occupation for boys decreasing from 76.5% to 41.1%. This was the only occupation in all five years in which the majority of responses fell in the 'no' category.

At age 12 years, girls showed a reduction in gender stereotypical perceptions with regard to suitable occupations for boys. Once again, the occupations of Nurse and Secretary were thought to be mostly unsuitable for boys, but percentages of 'yes' responses had risen to 64.7% for Nurse and 70.6% for Secretary. Levels of occupational information were also reported to be high at this age, with none of the girls unable to explain each of the occupations listed.

In the final year of the study, the general trends noted above continued and, although the occupations of Nurse and Secretary were still below the 80% mark, both these occupations showed an increase in perceived suitability for boys from earlier years of the study. Furthermore, no girl at age 13 years reported a lack of occupational information or any uncertainty about the listed occupations. These results generally show that the girls

perceived most occupations as suitable for boys, although some uncertainty about the occupations of Nurse and Secretary existed. These trends also reveal an overall reduction in gender stereotypical perceptions over the five years under study.

Extent to which boys stereotype occupations

Table 13 provides frequency counts (represented as percentages) indicating the extent to which boys (n=22) gender stereotype occupations for other boys over a five year period. Table 14 presents the frequency counts (represented as percentages) indicating the extent to which boys gender stereotype occupations for girls over the same five year period. From the results presented in Table 13, it can be seen that boys reported that most occupations were suitable for boys, with the occupations of Doctor, Police Officer and President at the 100% level across all five years under study. However, similar to the girls, boys expressed doubt about the suitability of the occupations of Nurse and Secretary for boys in all five years of the study.

At age 9 years, boys viewed most occupations as suitable for other boys. Occupations with 'yes' responses below 80% included Hairdresser, Nurse, TV Announcer, Lawyer, Secretary and Bank Teller, indicating that most boys did not find these occupations as suitable for other boys. At this age level, the occupations of Nurse and Secretary were more noticeably gender stereotypical, with 59.1% of the boys reporting that boys could not become nurses, and 31.8% reporting that boys could not become secretaries. However, these results should be viewed with caution as the occupations of TV Announcer, Lawyer and Bank Teller showed a higher degree of lack of occupational information (ranging between 22.7% and 36.4%) which may have impacted on these findings.

At age 10 years, the boys showed a slight decrease in gender stereotypical perceptions of occupations, with only the occupations of Nurse and Secretary reported at below the 80% level of 'yes' responses.

Table 13

Extent to which Boys stereotype occupations for Boys over five years

Occupation	9yr				10 yr				11 yr				12 yr				13 yr			
	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI
Fire Fighter	**95.5**	4.5	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Hairdresser	**77.3**	22.7	0	0	**95.5**	4.5	0	0	**95.5**	4.5	0	0	**100**	0	0	0	**90.9**	9.1	0	0
Pop Singer	**81.8**	9.1	0	9.1	**95.5**	4.5	4	0	**95.5**	4.5	0	0	**100**	0	0	0	**100**	0	0	0
Author	**90.9**	4.5	0	4.5	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Doctor	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Chemist	**90.1**	0	4.5	4.5	**100**	0	0	0	**95.5**	4.5	0	0	**95.5**	0	0	4.5	**100**	0	0	0
Nurse	36.4	**59.1**	4.5	0	36.4	**59.1**	4.5	0	40.9	**59.1**	0	0	**59.1**	31.8	9.1	0	**77.3**	22.7	0	0
Police Officer	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Teacher	**100**	0	0	0	**95.5**	0	0	4.5	**100**	0	0	0	**100**	0	0	0	**95.5**	4.5	0	0
TV Announcer	**77.3**	0	0	22.7	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Lawyer	**72.7**	0	4.5	22.7	**95.5**	0	0	4.5	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Secretary	**54.5**	31.8	4.5	9.1	**50**	40.9	4.5	4.5	**63.6**	27.3	4.5	4.5	**81.8**	9.1	9.1	0	**68.2**	27.3	4.5	0
Bank Teller	**63.6**	0	0	36.4	**86.4**	0	0	13.6	**90.9**	0	0	9.1	**100**	0	0	0	**95.5**	4.5	0	0
President	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0

However, the percentage of boys who reported that Secretary and Nurse were unsuitable occupations for boys remained unchanged or increased from the preceding year. Boys also showed an increase in occupational information at this age level, with only the occupation of Bank Teller showing a marked level of 'no occupational information'.

Results at age 11 years established that the occupations of Nurse and Secretary were still below the 80% level. The occupation of Secretary showed a slight decrease in gender stereotypical perceptions with 63.6% of boys reporting that this was a suitable occupation for other boys. However, little change in the gender stereotypical perceptions for the occupation of Nurse was observed, with 59.1% of boys still reporting this to be unsuitable for other boys. There were increasingly high levels of occupational information recorded for this year level.

At age 12 years, boys showed a further reduction in gender stereotypical perceptions with only one occupation, that of Nurse, reported at below the 80% mark. Yet this occupation, too, showed a decrease in gender stereotypical perceptions and, for the first time, the majority of participants (59.1%) reported that boys could be nurses. Levels of occupational information were also high at this age, with only one boy reporting 'no occupational information' for one specific occupation.

In the final year of the study, nine of the fourteen occupations were recorded as being 100% suitable for other boys. Only the occupations of Nurse and Secretary were still found to be moderately gender stereotypical, with 77.3% and 68.2% of boys respectively who reported that these occupations were suitable for other boys. In addition, this was the first year that no boy reported a lack of occupational information. These results show a higher level of gender suitability and limited gender stereotyped views regarding the suitability of most occupations for boys. However, boys have consistently reported doubt as to the suitability of the occupations of Nurse and Secretary for other boys across all five years under study. Similar results were reported for girls.

Table 14 presents the results of the extent to which boys (n=22) hold gender stereotypical perceptions regarding occupations for girls. This table reveals that boys regarded the majority of occupations as suitable for girls in all five years of the study. While no career was consistently recorded at the 100% level, the results indicate an overall decrease in gender stereotypical perceptions over time. Furthermore, an overall increase in the level of occupational information held by the boys was observed.

At age 9 years, most boys felt that the occupations of Hairdresser, Pop Singer, Author, Doctor, Chemist, Nurse, Police Officer, Teacher and Secretary were all suitable occupations for girls, with all frequencies above the 80% level. Occupations below the 80% level included Fire Fighter, TV Announcer, Lawyer, Bank Teller and President, indicating that boys at this age level perceived these as less suitable occupations for girls, although all fourteen careers were above the 50% level. In addition, the occupations of TV Announcer, Lawyer and Bank Teller were reported to have a higher lack of occupational information (ranging between 22.7% and 36.4%). Thus results for these occupations should be interpreted with caution.

Results from the following year of the study showed an overall decrease in gender stereotypical perceptions and an increase in occupational information. Eleven occupations were reportedly viewed as highly suitable for girls with percentages ranging between 81.8% and 100%. The occupations of Fire Fighter and President were, however, again below the 80% level. The occupation of Doctor saw a slight increase in gender stereotypical perceptions as it fell from 81.8% at age 9 years, to 68.2% at age 10 years.

At age 11 years, thirteen of the fourteen occupations were above the 80% mark, indicating that boys perceived these occupations as suitable aspirations for girls.

Table 14

Extent to which Boys stereotype occupations for Girls over five years

Occupation	9yr				10 yr				11 yr				12 yr				13 yr			
	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI	Yes	No	Unsure	NOI
Fire Fighter	**68.2**	31.8	0	0	**72.7**	22.7	4.5	0	**90.9**	4.5	4.5	0	**81.8**	13.6	4.5	0	**81.8**	18.2	0	0
Hairdresser	**95.5**	4.5	0	0	**95.5**	4.5	0	0	**95.5**	4.5	0	0	**95.5**	4.5	0	0	**100**	0	0	0
Pop Singer	**90.9**	0	0	9.1	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Author	**90.9**	4.5	0	4.5	**95.5**	4.5	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Doctor	**81.8**	18.2	0	0	**68.2**	27.3	4.5	0	**81.8**	18.2	0	0	**100**	0	0	0	**95.5**	4.5	0	0
Chemist	**95.5**	0	0	4.5	**100**	0	0	0	**95.5**	4.5	0	0	**95.5**	0	0	4.5	**100**	0	0	0
Nurse	**95.5**	4.5	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Police Officer	**95.5**	4.5	0	4	**90.9**	9.1	0	0	**95.5**	4.5	0	0	**100**	0	0	0	**100**	0	0	0
Teacher	**100**	0	0	0	**95.5**	0	0	4.5	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
TV Announcer	**77.3**	0	0	22.7	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0	**100**	0	0	0
Lawyer	**63.6**	22.7	4.5	22.7	**90.9**	0	4.5	4.5	**90.9**	9.1	0	0	**100**	0	0	0	**95.5**	0	4.5	0
Secretary	**86.4**	0	4.5	9.1	**95.5**	0	0	4.5	**95.5**	0	0	4.5	**100**	0	0	0	**100**	0	0	0
Bank Teller	**59.1**	4.5	0	36.4	**81.8**	4.5	0	13.6	**86.4**	4.5	0	9.1	**100**	0	0	0	**100**	0	0	0
President	**63.6**	36.4	0	0	**63.6**	31.8	4.5	0	**77.3**	22.7	0	0	**86.4**	13.6	0	0	**81.8**	13.6	4.5	0

Only the occupation of President fell below the 80% mark, indicating some doubt as to the boys' perceptions of the suitability of this occupation for girls. In addition, the level of occupational information continued to increase at this age level.

At age 12 years, the majority of boys reported that all fourteen occupations were suitable for girls. While twelve of the occupation ranged between 92% and 100% at this age level, the lowest percentages were reported for the occupations of Fire Fighter (81.8%) and President (86.4%). These results show a continued decrease in gender stereotypical perceptions of occupations over time. The number of 'no occupational information' responses also continued to decrease. Similar results were reported in the final year of the study with no occupations falling below the 80% level and the lowest percentages being reported for the occupations of Fire Fighter and President. In addition, this was the first year when none of the participants reported a lack of occupational information. From these results it is evident that there was an overall reduction in the gender stereotypical perceptions boys held about occupations for girls. There was also an increase in the levels of occupational information over the five years under study. In the next section of the chapter, the participants' reflections on their own career development are explored.

Children's Reflections on their own Career Development

The fourth and final aim of this study was to explore and describe the participants' reflections on their own career development throughout the course of the longitudinal study, starting when the children were 5 years old. Reflecting on their past development at this point was thought relevant as the participants were at the end of the developmental stage of middle childhood and about to enter adolescence. Not only would the participants be capable of such reflection at this stage, but useful information about this qualitative information for middle childhood is largely lacking in the South African context. The exploration was done by content analysing the responses from the last question of the CAQ. In this question, the

children were asked to reflect on their occupational aspirations from the time they were 5 years old and to provide reasons for their occupational aspirations. In addition, the children were questioned about how they thought their aspirations had changed over the years. Finally, the interviewer tried to identify themes in the interviewee's occupational aspirations and to clarify these themes with the individual child. Only the reflections from the participants at age 13 years were analysed. This allowed participants to reflect on the entire length of the study to date and ensured that participants could reflect on their career development throughout Gottfredson's *orientation to social value and status* stage, which they are currently in. The results are presented in Tables 15, 16 and 17.

Table 15

Frequency counts of themed reasons for occupational aspirations

	Total Sample	Boys	Girls
Exposure to Occupation through Media	10	5	5
Family Members Influence	9	5	4
Childhood Dreams	4	2	2
Personal Abilities	12	6	6
Wanting to Help People	9	4	5
Personal Interests	32	20	12
Economic Security and Wealth	4	3	1

Table 15 provides a summary of the themes from the children's reflections on their own career development regarding their reasons for their occupational aspirations. These themes are presented for the total sample as well as for boys and girls separately. Totals may add up to more than the total number of participants as some participants fell into more than one theme for each question that was content analysed.

The most common reason children reported for their occupational aspirations were because of personal interests. This was evident for the total sample and boys and girls separately. While not reported in Table 15, the researcher noted that the participants tended to name family members and parental influence as prevalent reasons for their choices when they were younger. Furthermore, it was observed that the children's reasons for occupational aspirations were more likely to be accorded to childhood dreams when the children were under the age of 8 years.

Table 16 reports on the themes from the children's reflections on how their occupational aspirations have changed over the last eight years. Again, themes are presented for the total sample as well as for boys and girls separately. Totals may add up to more than the total number of participants as some participants fell into more than one theme.

Table 16

Frequency counts of themes for changed occupational aspirations

	Total Sample	Boys Only	Girls Only
Gained Knowledge or Experience	7	4	3
Interests Changed	14	9	5
Increase in Self Awareness	7	3	4
Unsure or Could Not Explain	10	3	7
No Change in Career Thoughts	5	4	1

Most children reported that they felt their occupational aspirations had changed over the eight years of the study and were able to provide a description of this change. However, a number of children (n=10) were not able to explain this change or replied in a way that gave reasons for their occupational aspirations rather than an explanation of how their aspirations had changed. This could imply that the children did not properly understand this question

and results should be interpreted with caution. In addition, five of the participants believed that their occupational thoughts had not changed over the course of the study. In many cases this was corroborated by the fact that they continued to aspire to the same occupations across all eight years. Another trend was noted in that several of children (n=14) reported that their occupational aspirations had changed mostly due to changes in their interests.

When examining each gender group separately, it can be seen that seven girls seemed unable to explain changes in their occupational aspirations. Furthermore, few girls expressed no change in their occupational thinking over the eight years. A number of the boys (n=9) believed that their occupational aspirations had changed because their interests had changed.

The results of the themes for the sample's occupational aspirations are provided in Table 17. These themes are presented for the total sample as well as for boys and girls separately. Once again, some participants fell into more than one theme and thus the totals may add up to more than the total number of participants.

Table 17

Frequency counts of themes for occupational aspirations

	Total Sample	Boys	Girls
Helping people & Medical	17	9	8
Sports	10	7	3
Business & Service	6	3	3
Science, Engineering and IT	4	4	0
Building and Construction	1	1	0
Wildlife and Animals	5	2	3
Music and Art	7	1	6
No Theme	4	3	1

Themes could be identified for the majority (89.7%) of the children. However, four of the participants expressed such varied occupational aspirations across the years under study that no theme could be observed. Most children aspired to occupations that involved helping people, or occupations in the medical field (n =17). The second most popular occupational theme was for sporting occupations (n =10). It is interesting to note that both helping people and sporting occupations fall into Holland's Social type occupations, which was also found to be the most popular occupational typology over time. The least popular occupational theme was for building and construction occupations. These occupations fall into Holland's Realistic typology, which was also found to be an unpopular choice in the analysis of occupational typology.

When looking at each gender group separately other trends were observed. While the majority of both boys and girls aspired to occupations in the helping people and medical theme, the second most popular theme differed for each gender group. More boys tended to aspire to sporting occupations, while girls expressed interests in music and artistic occupations. Similar trends were noted in the analysis of occupational typologies, in that more girls than boys were reported to aspire to Artistic typologies. Another trend that was observed by the researcher, although not reflected in the table, was that boys between the ages of 12 and 13 years tended to aspire more towards business occupations. A number of participants' occupational aspirations were found to have no theme over time as their aspirations changed completely from year to year.

Summary

This chapter has explored the results of the data from this study over a five year period. Specifically, the results for the total sample and 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 views of the participants were

also reviewed. Lastly, the children's reflections of their own career development were

reported. These results are discussed in the next chapter, which also provides a discussion of

the limitations of this study and recommendations for future research.

CHAPTER 6

Discussion

This chapter provides a discussion of the results described in the previous chapter. The findings are discussed with reference to the theories of child development and child career development presented in Chapter 2, as well as the major research findings reviewed in Chapter 3. In addition, this chapter discusses the limitations of the present research as well as recommendations for future research in this field.

The discussion is structured according to the overall aims of this study. Firstly, the discussion focuses on the interest typology of the children's occupational aspirations over time before then discussing the status level of the children's occupational aspirations over time. The third section of this chapter discusses the children's gender stereotypes of occupations. Finally, the discussion focuses on the children's reflections of the development of their own occupational aspirations.

Occupation Aspiration Typology over Time

The first aim of this study was to explore and describe the occupational aspirations of the participants by researching the interest typology of their aspirations over time. These results will be compared to relevant child and career development theories, as well as international and national research. The results of the present study appear to provide some support for both child development and career development theories. Childhood can be seen as a period of critical development in social, emotional, cognitive, and physical skills and as a time of rapid growth (Craig & Baucum, 2002). This growth includes changes in the development of occupational aspirations and perceptions. These changes in occupational aspirations are predicted by child development theories.

As previously discussed, Piaget (1971, 1977) proposed that children move through a sequence of distinct but interrelated stages of cognitive development. According to this

theory, the participants have moved through the *concrete operational* stage (7 to 11 years of age) and entered the *formal operations* stage (12 years of age and older) during the course of the present study. Piaget's theory proposes that the concrete operational child starts to think logically and to make use of a trial and error approach in problem solving (Sigelman & Rider, 2003). Children in this stage also become aware that others have a perspective different from their own (Craig & Baucum, 2002; Wadsworth, 2004) and that their thinking is no longer purely intuitive or egocentric. The formal operations child is able to explore logical solutions to both concrete and abstract problems, to think realistically about the future, and to form ideals (Cockcroft, 2002; Wood, 1998). This stage is characterised by an ability to think of possibilities and to compare reality with how things might or might not be (Craig & Baucum, 2002; Sigelman & Rider, 2003).

The findings of this study would confirm the propositions of these two stages of cognitive development as the children were able to aspire to adult occupations (and not fantasy occupations), reason and explore logical conclusions about this choice, and reflect on previous choices. The participants also increasingly showed the ability to provide realistic reasons for their occupational aspirations and to aspire to ideals. International studies have similarly found that children's occupational aspirations become more realistic and less fantasized as children grow older (for example, Helwig, 1998c, 2001). The present findings would seem to offer some support for the validity of Piaget's theory of cognitive development in this sample of South African children.

Furthermore, the results of this study offer support for Erikson's theory (1963, 1993), a child development theory which provides additional theoretical insight into the development of the occupational aspirations and perceptions of children. A discussion of Erikson's theory in Chapter 2 indicated that two of his stages are particularly relevant for the children participating in this study. Children in the present study fall into the *latency* (6 to 11

years) and *adolescent* stages (12 to 18 years). The *latency* stage is discussed in a later section of this chapter.

Erikson's fifth stage occurs during adolescence and is concerned with the search for identity (Craig & Baucum, 2002). Adolescents achieve this sense of identity by defining who they are in terms of career, religion, sexual identity and values, deciding how they fit into society and looking to what lies ahead (Hook, 2002; Sigelman & Rider, 2003). Prior to this stage, the child is involved in a number of different life roles but it is during adolescence that the child starts to sort out and integrate these various roles into a consistent identity (Hook, 2002). Participants in this study were entering this stage, which makes it difficult to comment on the relevance of Erikson's theoretical assumptions when reporting on this study's results. However, the observation that participants were increasingly able to state reasons for their occupational aspirations based on their interests and abilities, from early in childhood, can be seen to be demonstrative of a growing self-concept. This is an integral aspect of career development that will continue in adolescence (Sharf, 2006; Super, Savickas, & Super, 1996). The results of this study thus support the notion that children start to develop a self-concept during the early years of childhood. This is acknowledged by both national (Cox, 2004; Crause, 2006) and international authors (Hartung, Porfeli, & Vondracek, 2005; Zunker, 2006).

The finding that the children participating in this study seem to follow predictable patterns of development according to child development theories has interesting implications for research in South Africa. It seems clear that the child development theories described in this study can be applied to the present participants and thus may be relevant in describing the general development of South African children. However, further research with more diverse cultural groups is necessary before this can be stated with any degree of certainty. In addition, the result implying that the participants tend to start developing a self-concept early

in childhood can be used in developing effective career education programmes in our schools. A growing sense of who one is, is an important task in the career development process and should be fostered in any school-based career programme. This should aid learners in making appropriate and more realistic choices in the future.

The occupational awareness displayed by the participants in this study also validates the theories of Super (Super, 1957, 1990; Super, Savickas, & Super, 1996) and Gottfredson (1981, 1996, 2002, 2005). Both these theorists propose that career development begins in childhood. While Super's theory is more suited to understanding how children select certain types of careers, Gottfredson's theory is more concerned with the status and prestige of occupational aspirations (for this particular age group) and is discussed further on in this section.

In the context of Super's theory, the present participants fall into the Growth stage (0 to 13 years of age) during the course of this study. This stage is characterised by becoming concerned with the future, increasing personal control over one's life, convincing oneself to achieve in school and work, and developing competent work attitudes and habits. This is also a stage in which a child's self-concept is developed by interacting with adult role models around them (Sharf, 2006; Super, 1957, 1990). Support for Super's theory is provided by reviewing each participant's occupational aspiration development throughout the study. Each participant was able to aspire to and be concerned about their future and most participants recognised the need to achieve well in school in order to follow their chosen careers. In addition, most participants named significant others (such as parents, siblings, uncles and aunts or teachers) as those individuals who had introduced them to their occupational aspiration. This is further evidence of the participants' developing self-concept and their occupational aspirations being influenced by role models (Super, 1957, 1990; Super, Savickas, & Super, 1996).

Besides the implications for self-concept development discussed above, these findings are significant in how they relate to the need to develop awareness of the important role parents and adults may play in the career development of children. Many authors have noted the importance of incorporating appropriate role models and of educating parents concerning their influence on their children's occupational aspirations in any effective career education programme (McMahon, Carroll, & Gillies, 2001; McMahon, Gillies, & Carroll, 2000; Sharf, 2006; Wahl & Blackhurst, 2000). The present findings would seem to indicate the importance of educating parents and role models as part of the career curricula delivered in South African schools. However, this may not be an easy task considering the many obstacles schools face in South Africa today and the difficulty in actively involving parents who may, themselves, lack adequate career development knowledge.

Perhaps the most significant finding of this study was the popularity of Social type occupations throughout the five years under study. Unfortunately, the developmental and career developmental theories used to contextualise the results of this study do not provide a basis from which this finding can be compared, confirmed or refuted. However, international and national research studies do comment on the popularity of certain occupational typologies. These are discussed later in this section of the chapter.

In addition to providing support for developmental and career developmental theories, the findings of this study also provide support for international and national research trends. The results from the present study seem to indicate that the participants in this study are similar to their international counterparts and that they seem to follow similar career development paths. However, it should be noted that the sample of this study is not representative of the broader South African population. Some of the relevant international and national research is discussed below, starting with international studies and then moving on to a discussion of national studies.

In one study, Trice and King (1991) found that children as young as pre-primary school level were able to aspire to adult occupations and that these aspirations tended to remain stable over time. The findings of the present study support this research as the children in the sample were all able to aspire to adult-type occupations and, although some variation was evident, these occupational aspirations tended to remain stable across all five years under review. These findings are further supported by other studies which have found stability of occupational aspirations from a young age (Furlong & Biggart, 1999; Hartung, Porfeli, & Vondracek, 2005). This is further evidence of similarities between children cross-nationally.

International research has demonstrated that children tend to choose occupations consistent with their gender (Helwig, 2004). The present study also noted the presence of subtle gender differences in the occupational aspiration typology of participants. The presence of these gender differences between boys and girls has been found in many studies (for example, Furlong & Biggart, 1999; Harris & Satter, 1981; Hartung, Porfeli, & Vondracek, 2005; Hewitt, 1975; Johnson Riley, 1981; McMahon & Patton, 1997; Watson & McMahon, 2005) and the results from this study would thus provide further support for extant findings.

While the majority of both boys and girls consistently aspired to Social type occupations, boys showed a greater variation in their occupational aspirations in this study. In addition, girls increasingly aspired to more Investigative occupations across the five years, while boys increasingly aspired to more Realistic type occupations. Differences in gender group occupational aspirations have been found to persist over time (Turner & Lapan, 2005). Furthermore, international studies have found that girls tend to aspire towards and work in Artistic, Social and Conventional occupations, while boys aspire towards and work in more Realistic, Investigative and Enterprising occupations (Hartung, Porfeli, & Vondracek, 2005;

Helwig, 1998a; Lapan, Adams, Turner, & Hinkelman, 2000; Turner & Lapan, 2005; Watson & McMahon, 2005). This study provides partial support for these trends in that the girls tended to aspire to Social and Artistic type occupations more than other typologies, while the boys increasingly aspired to Realistic type occupations. It thus seems that participants in the present study are comparable to international samples, at least in terms of their preferences for gender specific occupational typologies. Differences in occupational aspirations according to gender may imply that gender groups need to be exposed to different types of occupational information in order to broaden their career exploration and ensure that children do not foreclose on their career decision too early. Our attention now turns to a discussion of national research and how it pertains to the results of the present study.

To date, little national research exists that examines the occupational aspirations and perceptions of South African children. However, the longitudinal project of which this study is a part does provide some findings in this regard. A major finding of the present study was that most participants were able to consistently aspire to an adult occupation across the five years under study. Other studies in this longitudinal project have reported similar findings, with results from all four preceding studies reporting that children were able to aspire to adult occupations and that these occupations remained stable over time (Cox, 2004; Crause, 2006; Dean, 2001; Olivier, 2004). These results support the notion that career development begins early in childhood.

In addition, Dean (2001) found that most pre-school children aspired to Social types of occupations and that, while girls continued to aspire to more Social occupations as they became older, boys tended to aspire to more Realistic occupations with increasing age. Varying degrees of support for this trend were found by the other studies in this project (Cox, 2004; Crause, 2006; Olivier, 2004). The present study found partial support for this trend, with the Social typology continuing to be the most popular aspiration for the entire sample

across all five years under study. Similarly, girls continued to aspire to Social occupations across all five years. However, while Dean (2001) found the Realistic typology to be increasingly popular with boys, the present study found that Social occupations were the most popular across all five years under study. It should be noted, however, that despite the majority of participants aspiring to this typology, the Social type is declining in popularity and a greater variety of interest types became increasingly evident in the children in the present study. A similar trend was found by Crause (2006). Enterprising and Conventional occupational types continued to be the least popular aspirations in the present study. These two typologies were also found to be the least popular in the four preceding studies in this longitudinal project (Cox, 2004; Crause, 2006; Dean, 2001; Olivier, 2004). The consistent trends found throughout the studies in this longitudinal project provide support for the validity of the findings and provide a solid research base for future studies to utilise.

Although the present study showed relative stability in terms of occupational aspiration typology, in that the Social typology was consistently the most popular occupational aspiration, an intra-individual analysis of the results showed variability in the occupational typologies over the five years under study. This variability took two forms: change within a single typology (such as aspiring to be a singer and later a photographer which are both Artistic type occupations), and changing typologies completely (such as aspiring to be an accountant, which is a Conventional occupation, and then a teacher, which is a Social occupation). This can be seen as an important part of career exploration and children should not be encouraged to foreclose on an occupational aspiration at too young an age. Varying degrees of change present in the participants' occupational aspirations provide further evidence of the need for career education programmes in our schools. In the next section the occupational aspiration status levels of the participants are discussed.

Occupational Aspiration Status Level over Time

The second aim of this study was to explore and describe the occupational aspirations of the participants with reference to the status level of their aspirations. Gottfredson's (1981, 1996, 2002, 2005) theory of circumscription and compromise was found to be the most relevant career development theory in this regard as it is concerned with both the content of occupational aspirations and the course of occupational aspiration development. Gottfredson's theory emphasises the importance that sex-roles and social prestige play in making career choices, as well as the barriers that individuals face (Gottfredson, 2002; Sharf, 2002, 2006). Essential to this theory is Gottfredson's four stages of cognitive development during which individuals become more self-aware and begin to circumscribe the occupational aspirations they no longer view as acceptable. In terms of this theory, the present participants are in the stage of social valuation in which they start to become aware of the social class and status of different occupations. Prestige also becomes important in career choice at this stage and careers are placed in a hierarchy (Gottfredson, 2002, 2005).

The responses of the participants clearly demonstrate that they are currently in the social valuation stage of Gottfredson's theory. This is evident in the results which showed that most participants increasingly aspired to occupations requiring tertiary level of education. These careers tend to earn more money, fall into the category of professions and are seen as prestigious by the majority of people. In addition, many of the reasons participants named for wanting to follow such high status occupations included the desire to make money and to be considered important. These reasons clearly show the importance participants place on social status and prestige. Furthermore, the number of children in the present study that aspired to sport-based occupations is further evidence of the social valuation stage of occupations as sport in South Africa is considered particularly prestigious. These results would seem to echo findings internationally and provide support for the

applicability of Gottfredson's theory to the South African population. However, high status occupations typically require tertiary education which may be beyond the reach of many South African learners financially. Although the participants in this study do not come from a disadvantaged background and should be able to afford university, the majority of learners in South Africa are not able to obtain a tertiary education due to the high costs associated with such studies. It may thus be important to equip learners with skills that help them overcome these barriers so that they may more realistically pursue their occupational aspirations.

When examining the results for occupational status level across the five year period, the participants' aspirations towards high status level occupations remained stable. This finding was supported by Crause (2006) and Olivier (2004), but only partially supported by Cox (2004) and Dean (2001) who found some variability in the status levels of their participants in the early years of the longitudinal study. However, both Cox (2004) and Dean (2001) found that the participants' occupational aspiration status levels tended to stabilize as they grew older. This stability of status levels implies that children may begin to stabilise their occupational aspirations at an early age.

From the results of the participants' occupational aspiration status levels, it would appear that older children are more readily influenced by social values and status than younger children. Evidence for this is provided by the finding that children tended to aspire increasingly to high status occupations as they grew older and were able to reflect on the role money and prestige played in their aspirations. This provides further support for Gottfredson's theory which states that children start to circumscribe their occupational aspirations based on social status and prestige between the ages of 9 and 13 years. Interestingly, Cox (2004) found that children seemed to aspire to high status occupations at an earlier age than predicted by Gottfredson's theory, and that children as young as six years

old were already beginning to aspire to high status occupations. This may be due in part to the number of children who have consistently aspired to professional sporting occupations which are considered high status. This is not surprising in South Africa's sport-mad culture which encourages children to participate in sport. Another factor leading children to aspire to professional sport is their tendency to aspire to childhood dreams, such as being a professional sportsman, which may be unrelated to their actual abilities.

No noticeable differences were observed between the gender groups in terms of their occupational aspiration status levels, with both genders aspiring to high status and professional occupations. This is in contrast to an international study which found that girls tend to aspire to higher status occupations than boys (Phipps, 1995). Still other studies found that both boys and girls tended to aspire towards occupations requiring more complex functions and higher educational levels as they become older (Helwig, 1998a). Some support was found for this in the present study in that both genders tended to aspire more to high status occupations as they became older. Furthermore, the findings of the present study confirm international research on the occupational status level of girls. Studies such as that of Trice et al. (1995) have reported that girls in a similar age group to the participants in the present study aspired mostly to high status occupations. This highlights the similarities between the participants in this study and international samples.

In summary, current research findings, both nationally and internationally, highlight the fact that children are acutely aware of high and low status occupations from an early age and begin to discard (or circumscribe) what they perceive to be low status occupations (Cox, 2004; Crause, 2006; Dean, 2001; Gottfredson, 2002, 2005; Helwig, 1998a, 2001; Lapan & Jingeleski, 1992; Phipps, 1995). Liben, Bigler and Krogh (2001) also found that children were aware of status differences amongst occupations and aspired to higher prestige occupations. The results of the present study confirm most previous findings in the field and

provide clear evidence for the role social class and prestige play in the participants' selection of occupational aspirations. The importance of incorporating these findings into career education programmes in order to help children make more appropriate career choices is evident. In the next section the role of gender stereotypes and gender traditionality and their impact on occupational aspirations is discussed.

Gender Stereotyping of Occupations

The third aim of the present study was to explore and describe the occupational gender stereotypes of the participants over time. The results from this study, as well as other studies in the longitudinal project, demonstrate that South African children have an awareness of gender differences that may influence the development of their occupational aspirations in the future. However, it was found that the influence of gender stereotyping on occupational aspirations becomes less significant as the participants increase in age. In addition, the children in this study seem to regard most occupations as suitable for both girls and boys. These results would be supported by Gottfredson's theory, which proposes that prestige and social valuation are of greater importance in circumscribing the occupational aspirations of preadolescents and adolescents than gender stereotyping. It thus seems that Gottfredson's theory may adequately describe the career development of this sample of South African children.

In addition, the results of the present study provide some support for the influence of gender traditionality in children's gender stereotyping of certain occupations. Such gender traditionality is suggested by international studies including Hartung, Porfeli and Vondracek (2005), Liben, Bigler and Krogh (2001), McMahon and Patton (1997), and Tremaine and Schau (1979). This study found that both girls and boys tended to hold gender traditional views in that both genders tended to regard typically female occupations (such as Nurse and Secretary) as being more suitable career choices for girls than boys. Similarly, both genders

viewed typically male occupations (such as Fire Fighter and President) as more suitable for boys than girls. However, both girls and boys seemed more willing to accept non-traditional gender roles for members of their gender group with increasing age.

A further examination of the results of this study reveal a decrease in the overall gender stereotypical views for both genders as the participants increased in age. These findings would be supported by the overall longitudinal project, in that other studies in this longitudinal project have consistently found that children do hold gender stereotyped occupational perceptions from an early age, but that these stereotypes decrease as they grow older (Cox, 2004; Crause, 2006; Dean, 2001). This has important implications for the job market as increasing numbers of men and women enter the labour force, compete for the same jobs and have to work together.

The decrease in the overall gender stereotypes of participants over time is in contrast to some international studies (Liben, Bigler, & Krogh, 2001; Martin, Wood, & Little, 1990), but confirms the results of others (Bobo, Hildreth, & Durodoye, 1998; Gottfredson, 1981, 1996, 2002, 2005; Gregg & Dobson, 1980; Helwig, 1998b; Stockard & McGee, 1990; Super, 1957; Watson & McMahon, 2005; Weiking Franken, 1983; Zunker, 2006). Zunker (2006) states that this continuing process of decreasing gender stereotypes with increasing age is adapted by contextual and situational factors. The results of the present study would seem to provide support for this statement. This is also an important finding in the context of South Africa, with its varying social and cultural milieus. It is likely that the gender traditionality and level of gender stereotypes in this country have been influenced by South Africa's political history as the role models, teachers and parents of the children participating in this study have likely been influenced in their thinking by the past and current political, social and economic climate of the country.

Furthermore, while it was found that overall occupational stereotypes for both genders tended to decrease over time, girls tended to hold stronger occupational gender stereotypes regarding the suitability of occupations for other girls than the boys held for girls. This trend for girls to be more gender stereotyped than boys would seem to provide some support for international research conducted by McMahon and Patton (1997) who found that preadolescent girls are more likely to aspire to a restricted range of occupations than their male counterparts. Similarly, other international studies have reported high degrees of gender stereotyping along gender traditional lines (Furlong & Biggart, 1999; Harris & Satter, 1981; Hartung, Porfeli, & Vondracek, 2005; Hewitt, 1975; Johnson Riley, 1981; Watson & McMahon, 2005). Conversely, some international studies have found that girls tend to have greater gender flexibility than boys and are more willing to accept non-traditional gender roles (Bobo, Hildreth, & Durodoye, 1998; Raffaele Mendez & Crawford, 2002; Watson & McMahon, 2005).

While international studies appear to provide mixed evidence regarding the flexibility of girls towards non-traditional occupational gender roles, the present study as well as earlier studies in this longitudinal research project have found girls to be more gender stereotyped than boys (Cox, 2004; Crause, 2006; Dean, 2001). This trend is of concern as it would imply that girls tend to prescribe their own occupational limitations and may be circumscribing occupations from their list of suitable options at an early age. It is a world wide trend that fewer girls than boys enter scientific and technology related fields and international drives to encourage girls to pursue such occupations are prevalent (for example, Häussler & Hoffmann, 2002; Jones, Howe, & Rua, 2000; National Science Foundation, 2005). However, if girls impose limitations on themselves it may prove more difficult to encourage them to enter such fields. This again highlights the need for career education programmes in

schools from an early age, programmes which are aimed, in part, at reducing levels of

occupational gender stereotypes, particularly in girls.

The results from the present study also indicate that children tended to increase the

amount of occupational information they held as they grew older. This is supported in part

by the decision to exclude the occupational information question in subsequent years of the

study as no child reported a lack of occupational information in the last year of the present

study. This is to be expected considering the children's growing intellectual skills and the

varied experiences they are increasingly being exposed to through school, the media and

widening circles of social influence. Increasing levels of occupational information is also a

necessary step in appropriate career development (Sharf, 2006; Super, Savickas, & Super,

1996) and this development should be incorporated in career education programmes offered

at the primary and secondary school level. In the next section the discussion of the results

focuses on the children's own reflections of their career development.

Children's Reflections on their own Career Development

The fourth aim of this study was to explore and describe how children have reflected

on the development of their occupational aspirations over the course of this longitudinal

study. This reflection question was introduced as part of the Career Awareness Questionnaire

in 2004 and has allowed for much insight into the developing cognitive skills of the children

participating in the study. The themes gleaned from this reflection question seem to support

the growing mastery of social and cognitive skills in the participants, which is in line with

Erikson's (1963, 1993) psychosocial stage of *latency*.

The stage of *latency* (6 to 11 years) is concerned chiefly with developing the ego

strength of competence and is the age when the attainment of appropriate social and cognitive

skills becomes paramount (Erikson, 1993). At this stage the individual's sense of self is

enhanced by the development of these competencies and comparison with peers becomes

progressively more important (Craig & Baucum, 2002). In the present study an example of this thinking is evident in how the children consistently reflected that they were aspiring to specific occupations based on their interests and knowledge at the time of their choices. This would seem to support Erikson's (1963, 1993) view that the skills children develop in early childhood impact on their future occupational aspirations. These are essential skills to develop and their emergence heralds a new approach to learning in which children are able to begin to reason and compare and apply principles, rather than just rote learn information. The use of reason and ability to compare and apply principles are important skills which can be utilised in developing appropriate career education programmes.

However, participants were not only able to reflect on the development of their occupational aspirations, but they were also able to reason that their occupational thoughts had changed, often attributing this change to their increasing levels of self awareness or because they had gained in occupational knowledge or experience. The level of cognitive reflection these answers reveal would seem to imply that children, at age 13 years, have started to move into Piaget's (1971, 1977) final stage of cognitive development known as *formal operational thought*. This, once again, would allow for more sophisticated activities, experiences and skills to be built into career education programmes at this developmental age and should be taken into account when developing career curricula for schools.

The content analysis of the reflection question regarding the reasons for their occupational aspirations revealed that children were more likely to be influenced by their families and parents at a younger age. This is consistent with Erikson's (1963, 1993) theory which purports that, although familial influence is strong in early childhood, as a child moves through the stage of *latency* (which the participants are currently in) and into the stage of *adolescence*, the peer group becomes more influential. Erikson's theory as it pertains to career development is also supported by an international study which found that the family

becomes less influential as a child grows older and other role models or peers become more significant in terms of the influence they play on a child's occupational aspirations (Seligman, Weinstock, & Heflin, 1991). The results from the present study similarly found that familial influence became less prominent as the participants grew older.

Further confirmation of the decreasing importance of family with increasing age is supplied by the finding that a great number of the participants believed that exposure to the media contributed to their occupational aspirations. This again supports both Erikson and Super's theories which argue that the media, as part of a wider circle of influences, can impact on a child's development. The implication of these findings suggests that using appropriate role models as active learning tools and making use of media and technology in the classroom may be useful ways to bring across occupational information and encourage appropriate levels of career development.

In an earlier chapter of this treatise it was reported that a recent research review had found that children's occupational aspirations became more consistent with their own abilities, values and interests as they mature. This same review reported that with increasing age children develop a growing awareness of environmental obstructions and available opportunities to their occupational aspirations (Hartung, Porfeli, & Vondracek, 2005). Support was found for these observations in the results of the reflection questions of the present study in which it was found that the participants were able to reflect back on their occupational aspirations and were increasingly aware that they were making choices consistent with their interests and abilities. It is interesting to note that most children attributed the reason for particular occupational aspirations to be because of their personal abilities and interests. In addition, the most frequently listed reason the children gave for changes in occupational aspirations over the years was because of changing interests. Taking these results into consideration, it would seem that encouraging children to experiment with

different activities and building their competence in a wider variety of skills may be useful in broadening children's exposure to different occupations and possible fields of interest. Children should thus be encouraged to try different sports, hobbies and extra-murals as a means to aiding their career development. Our attention now turns to the limitations of the present study and recommendations for future research.

Limitations and Recommendations

While the primary aim of exploring and describing possible changes in the occupational aspirations and perceptions of a sample of 9 to 13 year old South African children was achieved in this study, there are some limitations which need to be considered. Methodologically, the use of an exploratory-descriptive research design does not allow for the collection of definitive answers. Furthermore, the use of this design does not allow for the controlling of extraneous variables (Neuman, 2006). In the present study, the researcher could not control for the influence of parental guidance or preparation for the interviews, nor for the ability of different interviewers to establish rapport with the child being interviewed. Both of these variables have consistently been noted in other studies within this longitudinal project (Cox, 2004; Crause, 2006; Dean, 2001; Olivier, 2004). However, the research did attempt to minimise the effect of these variables by asking parents not to prepare their children and by training and observing the interviewers.

In addition, it is noted that the very act of asking the participants about their occupational aspirations may influence their answers over time. This is even more noteworthy when one considers that participants were asked to reflect on their own occupational aspiration development. This reflection may also alter the participants' occupational aspirations and allow the participants greater opportunity to consider their decisions when contrasted with the general population. While this limitation could not be

controlled for due to the nature of the study, it was not thought to be a major limitation as the purpose of the study was not to generalise the findings to the larger population.

This raises another methodological limitation of the study. The use of non-probability, purposive sampling is a constraint as it restricts the study's ability to generalise its findings to the larger population of South African children. The use of this sampling technique has reduced the external validity of the study. Furthermore, the generalisibility of this study was compromised as the sample consisted of mostly middle and upper income socioeconomic status families. While this was done in order to control for extraneous variables, it does mean that these results may not be reflective of the wider range of socioeconomic conditions in South Africa and of the greater population of 9 to 13 year old children in this country. Although this particular limitation is not able to be addressed by future studies in this longitudinal project due to the nature of the sample, other future South African studies on the career development of children would do well to attempt to redress this limitation.

While longitudinal research has consistently been called for in order to reinvigorate the career psychology field (Betz, 2001; Savickas, 2002b), this type of research is not without its limitations. Limitations such as high expenses and the complexity of conducting such research have been noted by the other researchers in the larger study (Cox, 2004; Crause, 2006; Dean, 2001; Olivier, 2004) and were similarly found to be limitations in the present study. However, another limitation of longitudinal research, which could have far greater impact, is the attrition rate of participants. This attrition rate is discussed in more detail in the methodology chapter. Although the attrition rate for this study has not been sizeable, once the two age cohorts were separated early in the project, a few participants have declined to participate each year. If this trend continues it could have considerable consequences for the quantitative research methodology currently being employed with this study, and a more

qualitative approach may become necessary in the interpretation of results. It is hypothesised that the attrition rate may continue to drop as the children become older and are able to make decisions about their participation themselves. This could be exacerbated by the adolescent effect of peer pressure, with participants not wanting to be called out of class or appear different from their peers. They may also start to find participation boring, which could further reduce their interest in participating. Future researchers may need to address some of these concerns. Crause (2006) has suggested that future researchers consider altering the data collection process and incorporate unstructured interviews in the gathering of information. It is further suggested that this method of data collection may be more in line with Super's life-span life-space theory and the recognition of the client as actively involved in their own career development. This can be restated in terms of Savickas's (1997, 2002b, 2005) career construction theory which is a more recent theoretical revision of Super's theory. Savickas proposes that clients construct their own career identity and thus should play an integral role in their own career development.

As previously discussed, the present study was limited in its consideration of factors such as race and socioeconomic status. The exploration of these factors was not possible within the scope of this longitudinal study. However, it is recommended that future studies in the field of child career development attempt to include such variables in an attempt to make their results more generalisable to the wider South African population. In particular, it is recommended that the occupational aspirations and perceptions of South African children of lower socioeconomic status, as well as black, coloured and indian racial groups be studied. This will go a long way in providing indications of how the career development of the wider population of South African children progresses. This is thought important in order to provide a description of child career development which is relevant to the South African context and which strives to move the field of South African career psychology forward.

Lastly, the recent changes in the South African education system and the introduction of a compulsory Life Orientation subject, which includes career education programmes, have already been discussed. Cox (2004) has commented on the unsatisfactory implementation and the questionable validity of these programmes due to the lack of research in this field. The current longitudinal project, which includes this study, hopes to provide baseline information that can be used to prepare appropriate career awareness and education programmes for primary, middle and high school learners in the South African context. It is recommended that other future studies focus on providing this information for diverse South African population groups. This would allow for more relevant findings to be established on which unique South African career education programmes can be built in the future.

Conclusion

While few would deny the relevance and importance of studying careers and work related issues, there has been a consistent lack of focus on studying the process of career development (Watson & McMahon, 2005). This makes the use of a longitudinal design in this study all the more relevant. Longitudinal research has consistently been called for by other international researchers (Betz, 2001; Helwig, 2004; Savickas, 2001) and the results of the various studies from this longitudinal project may help in developing career development in this country. With this in mind, the use of longitudinal designs should be encouraged in the exploration of other uniquely South African traditions, life phases and subjects, particularly within the career field.

Although the results of this study cannot be generalised to the wider population, these findings are nevertheless important. This longitudinal study is unique in that it consists of a homogenous sample of boys and girls which has been followed for over eight years. It is the intention of the researchers involved in this longitudinal project that these participants be followed throughout their secondary schooling. With this in mind, and provided that the

attrition rate does not drop drastically in years to come, this study should provide a rich database from which much can be learnt, particularly from a qualitative research paradigm. This should provide a useful resource for future studies that may come from this database and for the field of career psychology in South Africa.

The results of the present study help add to the volume of research on career development but, more importantly, they help to fill the void that exists in the career literature on South African children. This is vitally important considering the lack of research in this regard and the consequent application of Western (i.e., typically American) theories and research results in this country in the past (Stead & Watson, 2006). The longitudinal project, of which this study is a part, can provide the platform for future research in the area of South African child career development and to inform the career development programmes being offered in South African schools. The introduction of these programmes has increasingly been recognised as enhancing the overall quality of education being offered (Crause, 2006) and has exciting implications for future South African employment and labour market trends. The importance of basing these career education programmes on relevant and scientifically based research has already been emphasised and the present study goes some way in providing such useful research findings.

This study was an endeavour to explore and describe the occupational aspirations and perceptions of a sample of 9 to 13 year old South African children and it forms part of a longitudinal research project which is aimed at exploring career development in South African children. The purpose of these studies is to provide important baseline information that can be used to build a foundation for research in this field. Furthermore, these results have exciting implications for the development of relevant career education programmes for South African schools. It is hoped that this study will motivate other career researchers in the

field in order to further facilitate the development of appropriate career interventions across

South African population and age groups.

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Appendix A

Biographical Information & Consent Form

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

<u>Parent's Letter</u>

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.

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 their 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

<u>Robyn Hargreaves</u>

<u>Prof. M. B. Watson</u>   **<u>Prof. C. D. Foxcroft</u>**
SUPERVISOR   **CO-SUPERVISOR**

Appendix C

<u>Career Awareness Questionnaire For Children</u>

(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)

………………………………………………………………………………………………

PLEASE TURN OVER

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

	Knows what it is. Yes/No	Yes	No	Don't Know
Could a boy be a soldier when he is big?				
Could a girl be a soldier when she is big?				
Could a boy be a president when he is big?				
Could a girl be a president when she is big?				
Could a boy be a nurse when he is big?				
Could a girl be a nurse when she is big?				
Could a boy be a fireman when he is big?				
Could a girl be a fireman when she is big?				
Could a boy drive a truck when he is big?				
Could a girl drive a truck when she is big?				
Could a boy be a teacher when he is big?				
Could a girl be a teacher when she is big?				
Could a boy be a policeman when he is big?				
Could a girl be a policeman when she is big?				
Could a boy be a vet when he is big?				
Could a girl be a vet when she is big?				
Could a boy be a singer when he is big?				
Could a girl be a singer when she is big?				

Appendix D

<u>Career Awareness Questionnaire For Children</u>

(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 <u>easy</u> for you to become a ……………….?

   …...…………………………………………………………………………………………

   h) What would make it <u>difficult</u> 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 <u>**can**</u> do?

   …………………………………………………………………………………………………

   …………………………………………………………………………………………………

b) What are some jobs you think women **<u>cannot</u>** do?

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

c) What are some jobs you think men **<u>can</u>** do?

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

d) What are some jobs you think men **<u>cannot</u>** do?

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

e) What are some jobs you think **<u>both</u>** men and women **<u>can</u>** do?

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

PLEASE TURN OVER

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

	Knows what it is. Yes/No	Yes	No	Don't Know
Could a boy be a fire-fighter when he is big?				
Could a girl be a fire-fighter when she is big?				
Could a boy be a hairdresser when he is big?				
Could a girl be a hairdresser when she is big?				
Could a boy be a pop singer when he is big?				
Could a girl be a pop singer when she is big?				
Could a boy be an author (write stories / books) when he is big?				
Could a girl be an author (write stories / books) when she is big?				
Could a boy be a doctor when he is big?				
Could a girl be a doctor when she is big?				
Could a boy be a chemist when he is big?				
Could a girl be a chemist when she is big?				
Could a boy be a nurse when he is big?				
Could a girl be a nurse when she is big?				
Could a boy be a police officer when he is big?				
Could a girl be a police officer when she is big?				
Could a boy be a teacher when he is big?				
Could a girl be a teacher when she is big?				
Could a boy be a TV announcer when he is big?				
Could a girl be a TV announcer when she is big?				
Could a boy be a lawyer when he is big?				
Could a girl be a lawyer when she is big?				
Could a boy be a secretary when he is big?				
Could a girl be a secretary when she is big?				
Could a boy be a bank teller when she is big?				
Could a girl be a bank teller when she is big?				
Could a boy be a president when he is big?				
Could a girl be a president when she is big?				

Appendix E

<u>Career Awareness Questionnaire For Children</u>

(Present 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 <u>easy</u> for you to become a ……………….?

   …...…………………………………………………………………………………

   h) What would make it <u>difficult</u> 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 **<u>can</u>** do?

   ……………………………………………………………………………………

   ……………………………………………………………………………………

b)   What are some jobs you think women **<u>cannot</u>** do?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

c)   What are some jobs you think men **<u>can</u>** do?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

d)   What are some jobs you think men **<u>cannot</u>** do?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

e)   What are some jobs you think **<u>both</u>** men and women **<u>can</u>** do?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

PLEASE TURN OVER

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

	Knows what it is. Yes/No	Yes	No	Don't Know
Could a boy be a fire-fighter when he is big?				
Could a girl be a fire-fighter when she is big?				
Could a boy be a hairdresser when he is big?				
Could a girl be a hairdresser when she is big?				
Could a boy be a pop singer when he is big?				
Could a girl be a pop singer when she is big?				
Could a boy be an author (write stories / books) when he is big?				
Could a girl be an author (write stories / books) when she is big?				
Could a boy be a doctor when he is big?				
Could a girl be a doctor when she is big?				
Could a boy be a chemist when he is big?				
Could a girl be a chemist when she is big?				
Could a boy be a nurse when he is big?				
Could a girl be a nurse when she is big?				
Could a boy be a police officer when he is big?				
Could a girl be a police officer when she is big?				
Could a boy be a teacher when he is big?				
Could a girl be a teacher when she is big?				
Could a boy be a TV announcer when he is big?				
Could a girl be a TV announcer when she is big?				
Could a boy be a lawyer when he is big?				
Could a girl be a lawyer when she is big?				
Could a boy be a secretary when he is big?				
Could a girl be a secretary when she is big?				
Could a boy be a bank teller when she is big?				
Could a girl be a bank teller when she is big?				
Could a boy be a president when he is big?				
Could a girl be a president when she is big?				

Occupational Choice								
1998	1999	2000	2001	2002	2003	2004	2005	2006

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 |