

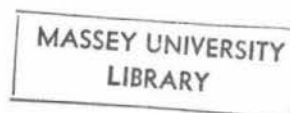
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THE INFLUENCE OF SEX-TYPING AND SOCIAL STATUS ON  
CHILDREN'S OCCUPATIONAL PREFERENCES AND OCCUPATIONAL STEREOTYPES:  
AN EXAMINATION OF GOTTFREDSON'S THEORY OF OCCUPATIONAL CHOICE

A thesis presented in partial fulfillment of the requirements  
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## CONTENTS

### CHAPTER 1 - INTRODUCTION

- THEORIES OF OCCUPATIONAL CHOICE	2
- GOTTFREDSON'S DEVELOPMENTAL THEORY	5
Stages of Development	7
Theory of Compromise	10
- CRITIQUE OF GOTTFREDSON'S THEORY	11
- EXAMINATION OF VOCATIONAL RESEARCH RELATING TO GOTTFREDSON'S THEORY	15
Developmental Issues (Orientation to Size and Power)	16
Emergence of Sex-Typing of Occupational Preferences and Occupational Stereotypes	20
Social Influence on Occupational Preferences and Occupational Stereotypes	27
Children's Perceptions of Occupational Status	28
Occupational Preferences and Social Background	30
Defining and Measuring "Social Class"	35
- SUMMARY AND AIMS	37
- HYPOTHESES	41

### CHAPTER 2 - THE PRESENT INVESTIGATION

- SUBJECTS	46
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- INSTRUMENTS	
Question Sheet	48
Occupational Card Sort	49
Consent Form and Letter	52
Biographic and Ability Data	53
- PILOT TESTING	54
- PROCEDURE	54
- DEPENDENT AND INDEPENDENT VARIABLES	59

### CHAPTER 3 - RESULTS

- SEX-TYPE OF OCCUPATIONAL PREFERENCES (FREE AND FORCED CHOICE)	60
Results of Supplementary Contingency Analyses for Sex-Type	70
- SOCIO-ECONOMIC STATUS LEVEL OF OCCUPATIONAL PREFERENCES (FREE AND FORCED CHOICE)	71
Results of Supplementary Contingency Analyses for Socio-Economic Status Level of Occupational Preferences	80
- OCCUPATIONAL STEREOTYPES	
Status level Occupational Stereotypes	84
Sex-Typed Occupational Stereotypes	88
Actual versus Perceived Status and Sex-Type of Each Occupation	94
- SELF-PERCEIVED SOCIAL CLASS	96

### CHAPTER 4 - DISCUSSION

Influence of Sex-Typing	98
Influence of Socio-Economic Status	104



Limitations and Suggestions for Future Research	111
Critique and Overview of Gottfredson's Theory in the Light of the Present Study	115
Implications of Gottfredson's Theory and the Present Study for Career Education and Awareness Programmes	120

## CHAPTER 5 - SUMMARY AND CONCLUSIONS

124

## APPENDICES

1. Glossary of Terms	126
2. Defining and Measuring "Social Class"	130
3. Question Sheet	136
4. Occupational Card Sort-Occupations	137
5. Groupings of Occupations for the Perceived Importance Card Sort	138
6. Pictorial Occupational Card Sort Used with Five Year Olds	139
7. Recording Sheet Used with Five Year Olds	141
8. Letter to Parents and Parental Consent Form	142
9. Ability Ratings Derived from P.A.T. Scores	143
10. Introduction Transcript	144
11. Job Descriptions for Occupations in the Occupational Card Sort	146
12. Feedback Letter to Parents	148
13. Rationale for Choice of Analyses	150
14. Correct and Incorrect Classification of Status Level of Occupational Preferences in Relation to Parental Socio- Economic Status for Selected and Unselected Cases in the Free Choice Condition	153
15. Correct and Incorrect Classification of Sex-Type of Occupational Preferences in Relation to Parental Socio- Economic Status for Selected and Unselected Cases in the Free Choice Condition	154

16. Perceived Status of Occupations at Each School Class Level	155
17. Perceived Sex-Type of Occupations at Each School Class Level	157

REFERENCES

159

## TABLES

1. Number of Participants at each School and each Class Level	47
2. Occupations at each Prestige Level and of each Sex-Type in the Occupational Card Sort	50
3. Canonical Correlations and Significance Levels for Sex-Type of Occupational Preferences in the Free and Forced Choice Conditions for Respondents Younger than Six	61
4. Canonical Correlations and Significance Levels for Sex-Type of Occupational Preferences in the Free and Forced Choice Conditions for Respondents Older than Six	62
5. Standardised and Structural Canonical Discriminant Coefficients for each of the variables entered for Free and Forced Choice Conditions for Respondents Younger than Six	63
6. Standardised and Structural Canonical Discriminant Coefficients for each of the Variables entered for Free and Forced Choice Conditions for Respondents Older than Six	64
7. Canonical Correlations and Significance Levels for Specified Order Stepwise Analysis of Sex-Type of Occupational Preferences in the Free and Forced Choice Conditions for Respondents Younger than Six	65
8. Canonical Correlations and Significance Levels for Specified Order Stepwise Analysis of Sex-Type of Occupational Preferences in the Free and Forced Choice Conditions for Respondents Older than Six	66
9. Significance of Differences between Pairs of Sex-Typed Occupational Preferences in the Free and Forced Choice Conditions for Respondents Younger than Six (Forced Order Stepwise Analysis)	68
10. Significance of Differences between Pairs of Sex-Typed Occupational Preferences in the Free and Forced Choice Conditions for Respondents Older than Six (Forced Order Stepwise Analysis)	69
11. Sex-Type of Occupational Preferences (Free Choice) for Males and Females, Collapsed across all Age Groups	71
12. Canonical Correlations and Significance Levels for Socio-Economic Status Level of Occupational Preferences in the Free and Forced Choice Conditions for Respondents Older	72

than Nine

13. Standardised and Structural Discriminant Function Coefficients for each of the Variables entered for Socio-Economic Status Level of Free and Forced Choice Occupational Preferences for Respondents Older than Nine	73
14. Canonical Correlations and Significance Levels for Forced Order Stepwise Analysis of Socio-Economic Status Level of Occupational Preferences in the Free and Forced Choice Conditions for Respondents Younger than Nine	74
15. Canonical Correlations and Significance Levels for Forced Order Stepwise Analysis of Socio-Economic Status Level of Occupational Preferences in the Free and Forced Choice Conditions for Respondents Older than Nine	75
16. Significance of the Difference in the Stepwise Discriminant Function between Pairs of Socio-Economic Status Levels of Occupational Preferences (High, Medium, Low) in the Free and Forced Choice Conditions for Respondents Younger than Nine	77
17. Significance of the Difference in the Stepwise Discriminant Function between Pairs of Socio-Economic Levels of Occupational Preferences (High, Medium, Low) in the Free and Forced Choice Conditions for Respondents Older than Nine	78
18. Number and Percentage of Respondents Older than Nine Selecting each Socio-Economic Status Level of Occupation (High, Medium, Low) at each Parental Socio-Economic Level (High, Medium, Low)	80
19. Actual Socio-Economic Level of Occupations versus Perceived Status of Occupations among Younger School Pupils (New Entrant/ Standard One) and Older School Pupils (Intermediate/Form Four)	86
20. Perceived Status Level of Female, Male and Androgynous Typed Occupations among Younger Pupils (New Entrant/ Standard One) and Older Pupils (Intermediate/Form Four)	87
21. Actual Female Participation in Occupations versus Perceived Female Participation in Occupations among Junior School Pupils (New Entrants) and Older School Pupils (Standard One to Form Four)	90
22. Sex -Type of Occupations (Female, Male, Androgynous) as Perceived by Females and Males	93
23. Self-Perceived "Social Class" of Respondents Older than Nine at each Level of Parental Socio-Economic Status (High, Medium, Low)	96

## FIGURES

1. Percentage of Respondents Older than Nine Selecting  
Each Socio- Economic Status Level of Occupation (High,  
Medium, Low) at each Ability Level in the Free Choice  
Condition 82
2. Actual versus Perceived Status Level and Sex-Type of  
Occupations, collapsed across all Age Groups 95

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## ABSTRACT

The present study examined Gottfredson's theory (1981) of vocational development, which suggests that occupational preferences and occupational stereotypes are influenced firstly by sex-typing, between the ages of six and eight, and secondly by social background, between the ages of nine and thirteen. A large, heterogenous sample (396) of New Zealand school pupils, aged between five and fourteen were asked about the occupations they would like to do, using free and forced choice formats, and these responses were then tested for their relationship with gender, age, parental socio-economic status and ability. A forced choice Occupational Card Sort, comprising 15 occupations, was used to measure sex-type and status dimensions of occupational stereotypes and effects for age and gender were investigated. Data were analysed using discriminant analysis and contingency analysis. Results indicated that gender was a strong influence on the sex-typing of occupational preferences and occupational stereotypes from the age of five (younger than the age suggested by Gottfredson), with males demonstrating more rigid sex-typing than females. Consistent with Gottfredson's theory, socio-economic background and ability were significant influences on status level of occupational preferences for respondents aged over nine years, with results suggesting that ability had a more direct influence on the status level of occupational preferences than did parental socio-economic status. The developmental pattern for the formation of occupational stereotypes was not as predicted by Gottfredson's theory, as both the sex-type and status level elements of occupational stereotypes were evident from the age of five. Results further

suggested a weakening of sex-typing of occupational stereotypes with increasing age. The inconsistencies of present findings with Gottfredson's theory were discussed in the context of previous research and the developmental literature, and the usefulness of the theory in relation to occupational choice was evaluated. Implications of the present findings for careers awareness and education programmes were considered. It was concluded that Gottfredson's theory provides a useful framework for examining early vocational development, but that the failure of the theory to explain deviant developmental patterns limits the theory's explanatory power. It was suggested that the theory's usefulness would be enhanced by recognising the impact of environmental influences such as campaigns to encourage women into non-traditional careers and by incorporating more psychological influences such as self-cognitions.



## CHAPTER ONE

### INTRODUCTION

The present study falls within the domain of Vocational Psychology. One of the major concerns in this area is occupational choice. In viewing the occupational structure of the labour force, it is evident that there are limitations on the choices of women, both in terms of occupational status and the range of occupations entered. The research literature clearly indicates that the majority of women work in a narrow range of low paid, low status occupations which conform with traditional sex-role stereotypes (e.g. Fitzgerald & Crites, 1980; Hackett & Betz, 1983; London & Stumpf, 1980; Shann, 1983; Tittle, 1983).

Psychological theories within the vocational field have inadequately addressed explanations for sex differences in the occupational choices of men and women, focusing instead on individual factors such as personality (e.g. Holland, 1973) or the self-concept (e.g. Super, 1963). In contrast, sociological theories have generally focused on ways in which the social or economic structure restricts the access to educational and occupational opportunities for less advantaged members of society (for example, minority racial groups and women). Some sociological theorists reject the notion that there is occupational choice (e.g. Roberts, 1977), while others accept that there is choice within structural constraints (e.g. Watson, 1980). Given that the individual does not exist in isolation from society, an integration of psychological and sociological theories is probably a more useful approach to understanding the process of occupational choice for both

men and women.

The present study investigates a theory of occupational choice (Gottfredson, 1981), which attempts to show more specifically how sociological factors are incorporated into the developing self-concept. As the theory draws on both sociological and psychological concepts a glossary is provided (Appendix A) to clarify the use of relevant terms. Gottfredson's theory is influenced to some degree by other psychological theories seeking to explain occupational behaviour. A brief review of these theories will therefore be presented before examining the theory of interest to the present study.

#### THEORIES OF OCCUPATIONAL CHOICE

Psychological theories of occupational choice can be grouped in various ways. For the purposes of this brief review, theories will be grouped according to whether the focus is on psychological traits, social learning factors, decision-making skills or developmental progressions.

The notion that individuals have certain traits which make some occupations more suitable or likely than others is inherent in the theories of Holland (1973), Roe (1956) and Dawis and Lofquist (1983). Holland categorises personality and work environments into six types. The theory predicts that individuals will seek and enter occupations that are congruent with their personalities, provided they have self-knowledge and knowledge of occupations. More recently, (1976) Holland has incorporated influences of differential reinforcement and

modelling to explain the development of personality types.

Roe (1956) similarly presents an organisation of occupations and personality types, but uses a psychoanalytic framework to incorporate the underlying dynamics and processes involved in vocational choice. The theory suggests that genetic factors combine with an interplay between needs and child-rearing practices to mould a particular personality type which will be attracted to a particular type of occupation.

Dawis and Lofquist (1983) also use the idea of person-environment fit in their work adjustment model. An individual's satisfaction in a job depends on how well her/his needs and abilities correspond with the reinforcers and ability requirements of the work environment. The model is not a static one, however, and it incorporates ideas of individual and environmental change in order to increase job satisfaction.

A greater emphasis on the process and dynamic aspects of career choice can be found in the social learning theory put forward by Krumboltz, Mitchell and Jones (1978). This theory draws strongly from behavioural psychology, with learning experiences being a key factor in the formation of occupational preferences. Genetic factors and environmental factors are seen to interact with learning experiences to influence career decisions throughout an individual's life. Both sociological and psychological factors are identified as influences on the career decision-making process.

The concept of occupational choice as a decision-making process underlines the more recent application of decision theories to vocational behaviour. Some decision theories use mathematical, probability approaches (see Mitchell and Beach, 1976, for examples), while others are nested within developmental frameworks (e.g. Super, 1980; Tiedman, 1961). Decision theories view the individual as an active participant in the choice process, sorting and processing information from a variety of internal and external sources in order to make an occupational choice. The more effective a person's decision-making skills, the greater the likelihood of satisfactory career selections being made.

A more descriptive theoretical approach to occupational choice is used by the developmental theorists. The theories of Ginzberg, Ginzberg, Axelred and Herma (1951, 1972), Super (1957, 1963) and Havighurst (1964) describe occupational choice as an on-going lifelong process, which is marked by developmental stages. A number of vocational tasks must be mastered before a new stage is entered. Developmental theories recognise that the choice process begins in childhood and continues throughout life, although each describes slightly different tasks and ages at which stages are achieved. Each theory emphasises particular concepts. Ginzberg et al, for example, consider compromise (later termed optimisation) between wishes and possibilities to be an essential element of choice. Two related key concepts in Super's theory are the self-concept, formed by the dual on-going processes of self differentiation and identification with others, and the vocational self-concept. The latter is similar to the self-concept but develops more specifically through children's observations of and identification

with adults involved in work. According to Super, the process of vocational development is essentially an implementation of the vocational self-concept.

Gottfredson (1981) has put forward a more recent theory of vocational development which incorporates the structure from Holland (1972), the notion of self-concept from Super (1958,1963), the process of compromise from Ginzberg et al (1955, 1972), and the concept of decision making within a circumscribed range of alternatives. As Gottfredson's theory forms the basis of the present investigation it is described in detail below.

#### GOTTFREDSON'S DEVELOPMENTAL THEORY: CIRCUMSCRIPTION AND COMPROMISE

Gottfredson's (1981) theory describes how vocational aspirations are narrowed down in early childhood and adolescence by sex-role stereotypes and social background. The process of circumscription occurs in developmental stages and is closely aligned with cognitive development.

The central component of Gottfredson's (1981) theory is the vocational self-concept (also used in the theories of Super (1958, 1963) and Ginzberg et al (1955,1972)). At each successive stage of development, a new element is incorporated into the vocational self-concept. The first element to be incorporated is gender, followed by "social class" and intelligence, then competencies and values. Occupational preferences are accordingly influenced firstly by appropriateness of sex-type, secondly by appropriateness of status level and thirdly by an

internal reference to values and interests. The vocational self-concept and occupational preferences are viewed as interactive components of development. As awareness of each new aspect of the vocational self-concept emerges, the range of acceptable occupational alternatives is successively restricted. The development of occupational preferences is paralleled by the formation of occupational stereotypes. Initially, occupational stereotypes are coloured by sex-type and later by status level. These two dimensions, sex-type and status level, are the major components of what Gottfredson (1981) terms a cognitive map, which is described as a means of organising one's images of the occupational world.

The four stages which Gottfredson (1981) uses to organise the development of self-concept and occupational preferences are based on Van den Daele's (1968) paper on cognitive development and the formation of the ego-ideal. Underlying the progressions from one stage to the next is the development of cognitive processes. Each new element of self-concept that emerges matches the ability to handle more complex cognitive operations. As each new stage of development is reached, more abstract concepts of self are incorporated into the overall self-concept, although awareness of new dimensions for perceiving self may emerge earlier. This is consistent with the particular model of development which perceives acquisition of stage tasks to be a gradual, as opposed to an abrupt, process (Flavell, 1975).

Each stage corresponds with an age range and a school level. Gottfredson (1981) states that the demarcation of ages is 'fuzzy' for stages two to four, but that the ages given represent the age at which

a "sizeable proportion" of children enter the stage (a "sizeable proportion" is not defined). All children, according to Gottfredson, pass through the stages in the prescribed order, but the rate of development varies with intelligence.

### Stages of Development

The first stage Gottfredson (1981) coins 'Orientation to Size and Power'. Children at this stage, aged between three and five years, begin to move away from fantasy preferences and become oriented toward adult roles. Thinking is intuitive and dichotomous: self is little, adults are big. Gottfredson contends that although occupational preferences at this stage may be sex-typed this reflects an awareness of sex differences, not sex roles. In addition, children in this stage have no abstract concept of male versus female and hence no coherent concept of male and female roles. Gottfredson states that it is not until age six that children obtain a constancy of objects which allows the child to see that male/female assignation is permanent. Children in the first stage regard all occupations favourably, regardless of whether they are sex-typed male or female.

By Stage Two (Orientation to Sex-Roles), ages six to eight, thought processes become concrete and simple grouping tasks can be performed. Children use concrete visual clues such as clothing and overt activities to differentiate sex roles. Hence, at this stage children become oriented to sex roles, with the concept of self and others primarily influenced by gender. Both boys and girls agree on what jobs

are appropriate for men and women (sex-typed occupational stereotypes) and expressed occupational preferences are heavily sex-typed. The most popular choices for boys are likely to be the least popular for girls and vice-versa. Each gender respectively believes her/his own sex to be best. Gottfredson (1981) states that no children at this stage will mention a clearly cross-sexed job as a most or least preferred option. In addition, children's own preferences are likely to be more sex-typed than judgements about what is appropriate for their sex (sex-typed occupational stereotypes).

The progression into Stage Three (Orientation to Social Valuation), between the ages of nine and thirteen, is underlined by an increasing ability to use abstract thought processes and to perform more complex grouping tasks. The development of these new abilities enable the child to deal with concepts of social stratification (Gottfredson, 1981, uses the term social class) and intelligence (ability). The awareness of "social class" begins with recognition of the more concrete cues to social position, such as material possessions, progressing to an appreciation of the economic dimensions of social class, and culminating in a complete adult concept of the term. The status of various occupations as an indicator of social position is also realised in Stage Three. As these concepts become internalised, children's own occupational preferences incorporate an awareness of and compatibility with their social background.

Prior to Stage Three, boys' occupational preferences tend to be at a low status level, whereas girls' occupational preferences start out relatively high. Gottfredson (1981) attributes these early sex



differences to "accidental sex-typing", but fails to explain exactly what this means. Early in Stage Three boys raise the status level of their occupational preferences, while girls' occupational preferences decrease in status, bringing the status level of boys' and girls' occupational preferences into the same range. Within this range, the status level of occupational preference reflects the "social class" reference group to which the child belongs. Hence, the higher the social background, the higher the status level of occupational preference, and the lower the social background, the lower the preference status level. Ability is also considered by Gottfredson to influence the level of occupational preferences, with increased ability raising the levels of preference. This effect, however, occurs only within each "social class" so that ability does not supercede the influence of social background.

By the end of Stage Three, the acceptable range of occupational alternatives for an individual has been defined by the appropriateness of an occupation for one's gender and for one's social background. The effect of this narrowing down, then, is to limit what might have been a broader field of work.

The selection of a particular occupation within the field of work is the task of Stage Four (Orientation to Internal and Unique Self), which describes development from the age of 14. During this stage, development encompasses the emergence of an internally-based definition of self, referenced to the unique capabilities, personality traits, values and interests of the individual. Such development is

facilitated by the ability to comprehend more abstract concepts. However, choices made in this stage tend to be unstable, reflecting a great deal of uncertainty about self-identity. The features of Stage Four development mirror Ginzberg et al's (1951) "Tentative Period" in which occupational preferences are successively moulded by a growing awareness of special skills, abilities and values.

### Theory of Compromise

Gottfredson (1981) complements the circumscription aspects of the theory with a description of how occupational choices are compromised. Only a brief outline of this aspect of the theory will be given because the major interest in the present study is the concept of circumscription. Compromise is often necessary in the choice process as the job wanted may not always be available. Changes to goals are then needed to accommodate these circumstances. In making this compromise, Gottfredson asserts that some aspects of self-concept will be more important than others. When people have to compromise between sex-type, prestige and field of work, they will most readily sacrifice field of work. Selecting a compromise of the 'wrong' sex-type is the most threatening and done the least often. Where the choice is between sex-type and prestige level, the latter may be compromised before the former.

### CRITIQUE OF GOTTFREDSON'S THEORY

Gottfredson's theory (1981) is yet to be empirically tested. The strength of the underlying theoretical constructs, however, can be

evaluated in the light of the existing knowledge base. It is on the issue of developmental concepts that Vondracek, Lerner and Schulesburg (1983 a, 1983,b) direct much criticism at Gottfredson's theory. Vondracek et al believe that Gottfredson has ignored well-established developmental data. The development of object constancy is used as an illustration. According to Gottfredson, object constancy is not stabilised until age six. Vondracek et al take issue with this view, pointing out that a six month old infant does know that an object hidden from sight still exists, indicative of object constancy. It is perhaps unfortunate that Gottfredson uses the term 'object constancy' rather than gender constancy, which better describes the concept referred to in the theory. Contrary to what Vondracek et al suggest, however, Gottfredson does have theoretical support from the cognitive-developmental literature. Piaget( cited Kohlberg, 1966) has found that it is not until age six that a child knows that a cat wearing a dog mask is still a cat. Similarly, with regard to gender constancy, Kohlberg suggests that a stabilised concept of gender emerges between the ages of three and five.

There is considerable research evidence to support the view that gender constancy develops in the period suggested by Kohlberg. (e.g. Kuhn, Nash & Brucken, 1978; Slaby & Frey, 1975; Smetana & Letourneau, 1984). Gottfredson's (1981) suggested ages (six to eight) for the acquisition of gender constancy are more consistent with the developmental theorists and the research literature than Vondracek et al (1983) propose. Contrary to the developmental literature, however,

Gottfredson has extended the ages of acquisition by several years. An additional oversight is the apparent disregard for the literature suggesting clear sex differences (e.g. Kohlberg, 1966; Riley, 1981; Slaby & Frey, 1975; Teglasi, 1981), with boys more rigidly adhering to the concept of sex-role irreversibility than girls.

Other theoretical concepts used in Gottfredson's (1981) theory appear to be more robust. The progressions in cognitive development, for example, are well supported by the theories of Piaget (Piaget & Inhelder, 1969) and Kohlberg (1966). The development of a vocational self-concept is supported by Super's (1958, 1963) theory, which has been rigorously researched. Gottfredson also relies quite extensively on the research of Van Den Daele (1968) in relation to the development of the self-concept and ego-ideal. One point of departure, however, is that Van Den Daele did not find social background to be significantly related to self-concept whereas Gottfredson believes that social background is one of the major components of vocational self-concept. Gottfredson may be correct in assuming different influences on the development of the vocational self-concept from those found in the development of the general self-concept, but this remains to be tested.

Apart from issues arising from the use of theoretical constructs, Vondracek et al (1983 a) also criticise Gottfredson's (1981) theory for its failure to pay sufficient attention to the dynamic interactive process between social, cultural, economic contexts and the individual's vocational development. Gottfredson (1983) responds to this criticism by pointing out that social background plays an important role in the theory. Social factors are, however, treated as

a given and are not conceptualised in the dynamic manner suggested by Vondracek et al. The path analysis model examined by Farmer (1985) highlights the need to take into account not only background variables such as sex and socio-economic status, but also personal variables such as self-attributions (e.g. competence, ability, self-esteem) and environmental factors such as parent or teacher support. Criticism has also been levelled at Gottfredson's failure to use a life-span perspective. While this is a valid criticism, the focus on early development in the theory is important, particularly in light of the relative neglect of child development in existing theories.

An additional criticism made of Gottfredson's (1981) theory is the use of a cross-sectional research data base. To obtain a clear understanding of developmental tasks and the stages of vocational behaviour, longitudinal research is required, as pointed out by Zytowski (1977). Many of the reviews of the occupational literature (e.g. Osipow, 1977; Walsh, 1978,) observe the paucity of well-designed longitudinal studies within the field. Given the limited availability of such data, Gottfredson's reliance on cross-sectional research findings is understandable, if less than ideal.

While the criticisms made by Vondracek et al (1983 a; 1983 b) merit consideration, there is insufficient substance in them to discount Gottfredson's (1981) theory entirely. The established developmental theories of Ginzberg et al (1955) and Super (1957) have been continually tested, revised and extended, making valuable contributions to the field, despite the fact that they fail to meet some of Vondracek et al's criteria for a good theory of vocational development. The

value of any theory is surely whether it provides enough explanation of a particular phenomenon to generate hypotheses. As Severinson (1973) says "Theories are only more or less useful, not more or less correct"(p.4). A "good" theory, in his view, generates testable hypotheses and is sufficiently open to allow modifications to be incorporated, if indicated by research results. Although a number of testable hypotheses can be elicited from Gottfredson's theory, a failure to operationalise some of the concepts used imposes restrictions on the hypotheses that can be tested. For example, "social class" is a key concept, but nowhere does Gottfredson attempt to operationalise what the term means for the purposes of the theory.

In a more positive vein, one of the major contributions of Gottfredson's (1981) work is the examination of vocational development in the early years of childhood. Vondracek and Kirchner (1974) point out that "contemporary theorists have tended to treat the early childhood period in a cursory fashion" (p.252). Theorists such as Krumboltz et al (1978), Super (1957,1963), Ginzberg et al (1955,1972) and Holland (1973) accept vocational development as a life-long process but few detail the role childhood plays in later occupational choice. Roe (1956) is one of the few theorists to attempt to explain how childhood experiences influence later career decisions. This lack of attention to childhood ignores findings that vocational preferences are stabilised quite early in life (Jordaan, 1974), as are work values and attitudes to occupations (Bergland, 1974). Matthews (1974) has found that early childhood behaviours have direct significance for vocational choice.

To summarise, Gottfredson's (1981) theory can be criticised for the confused use of developmental and theoretical constructs (e.g. object constancy and the age at which it is attained), for its failure to explain how developmental progressions occur interactively with the environmental context and for its reliance on a cross-sectional data base. On the other hand, the theory attends to the much neglected early years of development and is strengthened by the incorporation of cognitive development. It also addresses the variables of gender and social background, well-known for their influence on career development, as will be shown in subsequent sections.

#### EXAMINATION OF THE VOCATIONAL RESEARCH RELATING TO GOTTFREDSON'S THEORY OF CIRCUMSCRIPTION

Review of the relevant literature is organised around the developmental framework of Gottfredson's (1981) theory, excluding Stage Four and the theory of compromise, which were not of interest to the present study. Within each of the first three stages outlined in the theory there are key issues that need to be examined and validated in light of the research findings.

Within the first stage (Orientation to Size and Power, the major concern is whether children are in fact oriented to adult roles at the end of the pre-school years (i.e. ages three to five). A second key area to address is the support for Gottfredson's (1981) claim that children do not have gender constancy at this age, nor are they oriented to sex-roles. In relation to the second stage (Orientation to Sex-Roles, ages six to eight), the main interest is an examination of

the research pertaining to childrens' sex-typed occupational preferences and sex-typed occupational stereotypes. The third stage (Orientation to Social Valuation, ages nine to thirteen) is concerned with three issues: the age at which social concepts are learned, how social background influences the social level of occupational preferences and how ability influences the level of preferences. Because of its central role, the definition and measurement of "social class" will be included when examining the literature relevant to the third stage in Gottfredson's theory.

The major concerns for each of Gottfredson's (1981) stages will be discussed in turn, although in examining the relevant literature it will be obvious that the age bands vary from those given in the theory.

#### Developmental Issues (Orientation to Size and Power)

The tendency for theorists to gloss over vocational development in the early years is mirrored in the small number of research studies that have investigated vocational development in young children. The major theme of the few studies that have been carried out has been the content of young children's occupational preferences and the reasons given for those preferences. Vondracek and Kirchner (1974), for example, investigated the aspirations of pre-school children and found that it was not until age five that children named a specific occupation, reflecting an ability to project into a future role as an adult. Similarly, Nelson (1978) found a progression from fantasy choices, selected for excitement or glamour (three to four year olds)



to choices relating to adult role expectations and evaluations (eight and nine year olds). Using a forced choice method, as opposed to the free choice methods in the previously cited studies, Tremaine and Schau (1979) also found a fantasy-real world progression in their sample of three to ten year olds.

In addition to the progression from fantasy to adult-oriented preferences, a number of research studies have investigated the development of gender constancy, sex-typed preferences and sex role stereotypes. Such development falls within the broader rubric of sex-role development, as described in the theories of Kohlberg (1966) and Mischel (1966). Kohlberg's developmental framework provides a useful means of examining the research literature in this area.

According to Kohlberg's (1966) theory, the child first develops a sense of which gender she/he is (gender identity) at about age two years, followed by an understanding (between the ages of three to five) that gender does not change (gender constancy). Kohlberg posits that gender constancy precedes the acquisition of sex-role stereotypes, but several researchers have found that gender constancy is not a pre-requisite for the development of sex-role stereotypes (e.g. Macoby and Jacklin, 1974; Marcus and Overton, 1978; O'Keefe & Hyde, 1983; Smetana & Letourneau, 1984; Urberg, 1982). Interesting results were obtained by O'Keefe and Hyde (1983) who found that gender constancy was not a pre-requisite for sex-typing own of occupational preferences, but it was a pre-requisite for childrens' occupational stereotypes.

The second major step in Kohlberg's (1966) theory of sex-role

development is the formation of sex-typed preferences. These preferences conform with what is considered appropriate for one particular gender. Sex-typed preferences for objects, toys, activities and peers have been found in children as young as two (Smetana & Letourneau, 1984). Amongst young pre-school children, preferences are generally for objects, toys and peers of the same sex (Marcus & Overton, 1978; Riley, 1981; Teglasi, 1981; Tibbetts, 1975). According to Kohlberg, same-sex preferences peak at age five to six and remain particularly high for boys but for girls same-sex preferences, although present, decline in strength thereafter. Urberg's (1982) study of three to seven year old children revealed same-sex preferences were weak, but they did peak at age five, supporting Kohlberg's theory. Despite a general tendency for preferring same-sex activities, peers and objects, male sex-typed activities and objects may be valued more highly. Teglasi (1981), for example, found that kindergarten to sixth grade boys and girls chose sex-typed jobs and toys for hypothetical male and female stimuli, but toys and jobs sex-typed male were deemed "best" by both males and females.

The third stage in Kohlberg's theory of sex-role development is the acquisition of sex-role stereotypes. These are concepts of behaviour and characteristics associated with one gender but not the other. Kohlberg states that by the age of five or six children have developed a fairly universal set of sex-role stereotypes, which peak at six or seven and decrease thereafter. Initially, these are based on gross body differences in size: males are bigger and stronger and therefore more powerful than females. By the age of five to eight, both boys and girls associate greater prestige and power with men, which may explain

Teglasi's (1981) results described above. Kohlberg suggests that this stereotype reflects an increasing awareness of occupational structure and the economic realms of the real world.

In contrast to Kohlberg's view, social learning theorists (e.g. Mischel, 1966) believe that children are conditioned into sex-role appropriate behaviour through a process of modelling and differential reinforcement. Girls and boys are reinforced for sex-typed appropriate behaviours that confirm a gender identity. To behave in a manner that is not sex-role appropriate threatens gender identity. Females are reinforced for expressivity, passivity, helpfulness and nurturance whereas males are reinforced for instrumentality and independence.

Whichever perspective is used to explain the development of sex-role stereotypes, there is a wealth of research literature to support the fact that such stereotypes are formed very early in life and exert considerable influence on young children's attitudes, beliefs and behaviour (e.g. Williams, Bennett & Best, 1975; Kuhn et al, 1978; O'Keefe and Hyde, 1983). There is some suggestion in the literature that the awareness of stereotypes differs for males and females. Etaugh and Riley (1977) found in their study of pre-school children that boys were more aware of male stereotypes than female stereotypes, whereas girls had equal knowledge of both. The Etaugh and Riley study is one of the few investigations to report that three to five year olds have little knowledge of adult stereotypes, although five year olds were reported to have greater awareness than the younger children.

To summarise, the developmental literature partially supports the

progressions outlined in the stage Gottfredson (1981) coins Orientation to Size and Power. Five year olds do appear to have moved away from fantasy occupational aspirations to a more realistic occupational preference. Contrary to Gottfredson's view, however, it would seem that many five year olds have developed gender constancy, but even if they have not, the formation of sex-typed preferences and sex-role stereotypes is still likely. Another shortcoming in Gottfredson's theory is the failure to acknowledge sex differences in the development and influence of gender constancy and sex-role stereotypes, despite the clear indication of sex differences in the developmental literature (e.g. Kohlberg, 1966).

#### The Emergence of Sex-Typing of Occupational Preferences and Occupational Stereotypes (Orientation to Sex Roles)

There are two major issues to examine in relation to this developmental stage. First is the age at which childrens' occupational preferences become sex-typed and second is the age at which childrens' perceptions of occupational stereotypes are sex-typed.

Consistent with the early formation of sex-typed preferences for toys, activities and peers, both boys and girls tend to select occupations that are of the appropriate sex-type from as early as age three (Papalia & Tennent, 1975; Riley, 1981; Tremaine & Schau, 1979). Preferences appear to remain sex-typed across all ages for both males and females (Frost & Diamond, 1979; Goldstein & Oldham, 1979; Nelson, 1978; O'Keefe & Hyde, 1983; Stark, 1980; Teglasi, 1981,).

Despite the findings that both males and females typically prefer sex-typed occupations, sex differences have been identified in the research literature. Many studies have shown that boys are considerably more rigidly sex-typed in their occupational preferences than girls (e.g. Frost and Diamond, 1979; O'Keefe & Hyde, 1983; Payne, 1981; Tremaine & Schau, 1979). Girls demonstrate greater role flexibility, selecting jobs from female, male and neutral categories. It has been suggested that cross-sex role behaviour is evaluated more negatively in males, which leads to greater stereotypic behaviour and preferences (Feinman, 1981; Kohlberg, 1966). This rejection of cross-sex role behaviour is reflected in the tendency for boys to react adversely to being asked to make choices from the perspective of a female. Nelson (1978) and Riley (1981), for example, observed nervous, anxious and distressed reactions in boys asked to imagine they were females in order to indicate occupational preferences.

Although female choices demonstrate greater role flexibility than male choices, most females still select traditionally female sex-typed occupations drawn from a very narrow range. Looft (1971) found that boys' preferences covered 18 different occupations, whereas girls' choices were drawn from only eight. Most of the girls chose to be either nurses or teachers. Looft's findings were replicated by Siegel (1973) and Riley (1981). Among a slightly older age group (eight year olds) Nelson (1978) similarly found that boys selected a significantly greater variety of occupations than girls, with most girls choosing to be housewives or mothers. The findings from a longitudinal study undertaken by Kenkel and Gage (1983) indicate that the restriction of range for females persists from the early school years through until

high school.

Choices for self appear to be more sex-typed than occupational stereotypes. Schlossberg and Goodman (1972) found that a high percentage of boys and girls chose sex-typed occupations despite having previously decided that jobs such as nurse or doctor could be performed by either men or women. Stating preferred jobs from a given list, however, may achieve different results from using a free choice format. In the study undertaken by Tremaine and Schau (1979), the preferences of both boys and girls were sex-typed in the free choice task but when asked to make selections from a list of nine occupations, girls were as likely as boys to choose any of the listed jobs.

The literature further suggests that children perceive occupations in general in terms of traditional sex-role stereotypes, although sex-typing of their own occupational preferences is stronger. Few of the children (aged five to twelve) in Goldstein and Oldham's (1979) study, for example, accepted that women could work in traditionally male occupations such as doctors and pilots. Garrett, Ein and Tremaine (1977) found that childrens' (aged five to ten) sex-typing of various occupations closely resembled the distribution pattern of men and women in the workforce, indicating the accurate basis of childrens' occupational stereotypes. A major effect related to the sex-typing of occupations is to restrict the range of occupations that are perceived as being suitable for women (as occurs with the sex-typing of occupational preferences). The finding that children generally perceive few occupations as suited to women and many as suited to men

is widely reported in the research literature (e.g. Garrett et al, 1977; Schlossberg & Goodman, 1972; Tibbetts, 1975; Tremaine and Schau, 1979).

A key issue arising from the research relating to the sex-typing of occupational stereotypes is whether such stereotypes decrease or increase with age. Kohlberg (1966) suggests that general sex-role stereotypes decrease in adolescence because of a new focus on interests. Although several studies support the view that sex-typing of occupational stereotypes decreases with age (e.g. Garrett et al, 1979; O'Keefe & Hyde, 1983; Payne, 1981; Shephard & Hess, 1975), a number of other studies indicate that occupational sex-typing increases with age (e.g. Teglasi, 1981; Tremaine & Schau, 1979). Differences between studies possibly reflect design limitations (cross-sectional versus longitudinal), sample variations and the use of different measures.

In addition to inconsistencies regarding the increase or decrease in sex-typing of occupational preferences, there is also disagreement in relation to sex differences. Some results indicate that males view more occupations as sex-typed male (e.g. Garrett et al, 1977), while other studies have found no sex differences (e.g. Schlossberg & Goodman, 1972; Tibbetts, 1975; Tremaine & Schau, 1979).

From the literature on children's sex-typed occupational preferences and stereotypic perceptions of occupations, a number of trends are clearly apparent. Firstly, sex-typed preferences and stereotypes relating to which jobs can or should be done by men and women are well

in place by the time a child enters school. Second, children's own preferences and perceptions of occupations do, in fact, mirror the actual occupational patterns for men and women (Garrett et al, 1977). Third, compared with females, males are more strongly sex-typed in their occupational preferences at all ages. The research data is inconsistent in relation to whether sex-typed occupational preferences and stereotypes increase or decrease with advancing age. Hence, there is support for Gottfredson's (1981) theory of circumscription by gender, but the sex-typing of occupational preferences and stereotypes is likely to occur earlier than the suggested ages of six to eight years.) Gottfredson's theory also ignores the literature regarding sex differences in the strength of sex-typed preferences and occupational stereotypes.

Although Gottfredson's (1981) contention that gender plays a significant role in the process of narrowing down the range of occupations from which selections are made is clearly supported in the research literature, there is a failure in the theory to explain how such a restriction occurs. Among the major explanations for the development of sex-typed preferences and sex-role stereotypes is the effect of modelling, drawn from social learning theory. Hence the research pertaining to the effects of role models on childrens' sex-typing and sex-role stereotypes will be examined.

There are several sources of sex-role models which may influence childrens' perceptions of what is or is not sex-role appropriate. First, there are the role models of people with whom the child has direct contact: family members, neighbours, family friends, school



personnel, shop assistants, doctors, dentists, school nurses and so on. The influence of direct models on the child's preferences has not been researched, but retrospective data does suggest that role models in the school years can exert some influence on later career choice (e.g. Lunneborg, 1982, Weishaar, 1981).

A second source of role models is television. Macoby and Jacklin (1974) suggest that childrens' initial concepts of the adult world and the different roles played in it by males and females are likely to come from television. Male and female roles in television programmes and commercials tend to be rigidly sex-typed in domestic and occupational fields. A New Zealand study by Chudatemiya (1976) revealed that females were portrayed in a markedly narrow range of traditional sex-typed female roles in contrast to males who were shown in a much greater range of roles. More recently a study by De Mello, Hirst and Mazza- Allison (1981) replicated Chudatemiya's work to assess whether any changes had taken place. The results were little different. Males were shown in 30 different working roles, whereas females were portrayed in only seven. In addition, men were consistently more often shown in professions and positions of authority, while women were seen as assistants or housewives.

A direct measure of the influence of these sex-typed portrayals on young children was undertaken in a study by O'Bryant and Corder-Bolz (1978), who examined the effect of viewing sex-typed and non-sex-typed role models in specially produced television commercials. Results indicated that children not only learn about occupations from television content but they also learn to sex-type various occupations

on the basis of the sex of the television model. In addition, it was found that girls may change their preferences for various occupations as a result of viewing women in particular roles.

The power of models shown on film to influence childrens' sex-typed choices and behaviour has also been examined by Barry and Barry (1976) and Dileo, Moely and Sulzer (1979). Both studies found a decrease in childrens' sex-typed behaviour and selections after watching cross-sex models on film. Sex differences were evident in each study. In the Dileo et al study males and older children made more sex-typed choices both before and after the exposure to cross-sex models. Barry and Barry found girls to be more influenced by cross-sex models than boys. However, the latter investigation indicated that the influence of watching cross-sex models was not lasting.

A third source of role-model influence is children's literature. Knell and Winer (1979) investigated the influence of reading stories portraying men and women in traditional sex-typed occupational roles and non-traditional occupational roles. Among the sample of young pre-school children, young girls stated more sex-stereotyped occupational preferences when read stories depicting traditional female worker roles. However, non-traditional stories did not have an impact on boys or girls. O'Neal Weeks and Porter (1983) similarly found that exposure to non sex-typed vocational roles failed to influence kindergarten children's traditional sex-role occupation stereotypes.

Although much more well-controlled research is needed to investigate the influence of role models and the media on the development of

occupational preferences, there are clear indications that both are potentially powerful sources of influence. Gottfredson's (1981) theory does not deal with the influence of role models and the media. This reflects the deterministic perspective of the theory, which ignores the dynamic interaction between the individual and the environment.

### Social Influence on Occupational Preferences and Occupational Stereotypes (Orientation to Social Valuation)

The third stage in the narrowing down of the range of occupational alternatives occurs between the ages of nine and thirteen and involves the influence of social background. Gottfredson (1981) suggests that the ability to deal with social concepts promotes awareness of social position that is reflected in the level of occupational preference. To ascertain support for this view, the research relating to the development of social class awareness and how such awareness influences children's occupational preferences and perceptions of occupational status will be examined.

The development of the awareness of social differences and related social concepts has been documented by Connell (1970), Davies (1965) and Goldstein and Oldham (1979). Cognitive development clearly underlines the ability of the child to comprehend various social concepts. Initially, children (aged five to eight) develop concepts of rich and poor, based on concrete cues, such as material possessions. As the ability to deal with more abstract concepts increases with age

(from about the age of nine), more subtle cues are used, such as occupational status. In adolescence the abstract concept of "social class" in a Marxist sense (economic and power relationships and class consciousness) begins to emerge (Connell, 1970; Davies, 1965; Simmons & Rosenberg, 1971). Connell found that adolescents, in contrast to younger children, considered differences in wealth to be fair, based on the belief that reward is proportionate to effort. Such a view is consistent with the "just-world hypothesis" (Lerner, Miller & Holmes, 1975), to which the Protestant Work Ethic appears to be closely related (Rubin & Peplau (1975)).

While concepts of "class" in the Marxist sense may be developed in adolescence, the accuracy of the adolescent's self-perceived "social class" membership is questionable. Both Connell (1970) and Simmons and Rosenberg (1971) found that adolescents had a tendency to overselect the "middle class" as their social locale. However, Connell's results indicated that those from lower socio-economic areas had a more accurate perception of "class" membership, whereas in the Simmons and Rosenberg study adolescents from "privileged" backgrounds had a more accurate view of their place in the stratification system.

#### Childrens' Perceptions of Occupational Status

An integral component of developing awareness of social differences is the perception of some occupations as "better" or "more important" than others. Goldstein and Oldham (1979) found that a high percentage of children at all ages (five to twelve) agreed that some jobs were better

than others and this trend increased with age. These perceptions were common to both boys and girls at all socio-economic levels. The main reason given for the relative importance of particular occupations was related to salary, with most children age eight and over offering this explanation. Younger children, although similarly mentioning salary, were more inclined to base importance on social contribution. Perceptions of absolute salary values were also more accurate from the age of eight, but even the youngest children (five year olds) were able to accurately rank occupations in terms of relative salary. In contrast, Lauer (1974) found that the functional nature of the work was the major explanation for rankings of job importance amongst children aged between seven and twelve.

Whereas Goldstein and Oldham (1979) used income assessment to measure childrens' ability to rank order occupations, Simmons and Rosenberg (1971) and Lauer (1974) asked children directly to rank a list of occupations according to their relative importance. Both studies found that even the youngest children ( eight and seven respectively) ranked occupations accurately in accord with adult samples. Simmons and Rosenberg report a .94 correlation with adult rankings at age eight while Lauer reports a .90 correlation at age 11. In the former study the high correlation of childrens' ratings with adult ratings was independent of socio-economic status and race. Although accuracy was already high at the younger ages in both studies, it continued to further increase with advancing age. Simmons and Rosenberg (1971) also found that primary school children were overall more favourable in their absolute rankings of occupations than high school students.

From this review of studies investigating the developing awareness of social differences, there are several key points to note. First, it is clear that children have an awareness of social differences from the earliest age assessed( age five). Second, the early perception of social differences is operational i.e. the child actively uses it to rank order occupations and differentiate social classes. Third, there is a developmental pattern in the acquisition of "class" concepts, with perceptions of social class becoming more accurate and realistic with increasing age.

Gottfredson (1981) acknowledges that social awareness precedes entry into Stage Three (Orientation to Social Values), but proposes that awareness is not operationalised until ages nine to thirteen. This contrasts with the literature, which suggests a much earlier operationalisation of social awareness and concomitant ability to differentiate occupational status. Similarly, the developmental progressions outlined by Gottfredson prior to and within Stage Three are supported, but have been found to occur at earlier ages than proposed in the theory.

#### Occupational Preferences and Social Background

The main question of interest related to the acquisition of social concepts is how awareness of social position influences occupational preferences or choice. The relationship between social background and occupational choice has been investigated in several studies. Clarke's

(1980) review of the British literature indicates that social background has a strong influence on the level of occupation chosen, but a weaker influence on the type of occupation selected. Generally, social background has been measured by father's occupation, although a few studies are reported by Clarke to have used less reliable measures. While the influence of social background on choice has been supported, the relative importance of social background has been less easy to investigate. Other factors such as ability and education are linked to social background, confounding its relative influence.

The inter-relationship of social background and other variables such as achievement or education is depicted in path models of vocational choice ( e.g Danziger, 1983; Farmer, 1985; Vellekoop-Baldock, 1971). Farmer (1985) found that background factors such as sex, social status, school location, race, age and ability had greater influence on aspirations than personal factors such as motivation or career orientation. However, the influence of the social status variable was mediated through ability, personal and environmental factors. Danziger (1983) reports that the influence of social origin on educational and occupational aspirations is independent of its effects on cognitive skills and achievement. Similarly, Vellekoop-Baldock (1971) found social background to be the strongest influence on vocational choice.

The influence of social background, however, may be different for males and females. In Danziger's (1983) investigation of career aspirations among high school students, clear sex differences for effect of social origin and ability were found. For females, educational and occupational aspirations were directly influenced by social origin and

by their level of academic achievement:high performing girls from a high social background had high occupational aspirations, with the reverse applying to low performing, low social background girls. In contrast, males were less directly influenced by social origin and more influenced by ability:able, successful males perceived less social economic constraint on educational and occupational opportunities. Despite sex differences regarding the relative contribution of ability and social origin to the status of occupational preferences, both males and females aspired to similar status level occupations.

Simmons and Rosenberg (1971), have examined the relationship between socio-economic status and occupational aspirations in conjunction with the perceived prestige level of occupations. Despite an accurate perception of the occupational prestige structure and concomitant socio-economic blocks to opportunity, respondents (aged eight to fourteen)did not believe that they personally were blocked. Consequently," working class" children of all ages desired" middle-class" occupations above the clerical-sales level. Children from this socio-economic background strongly wished to exceed their fathers' occupational/social position and this striving increased with advancing age." Middle-class" students were even more likely to aspire to high-ranking occupations, but were not as desirous of upward mobility as their" working class" counterparts.

MacKay and Miller (1982) found similar socio-economic differences in occupational aspirations. Children from middle and upper socio-economic backgrounds chose white collar and professional occupations as goals more often than children from lower socio-economic



backgrounds. This outcome was found for both the third graders (aged eight) and the fifth graders (aged 10). In a New Zealand study (Stark, 1980) professional career aspirations were held by a majority of 12-14 year old students, regardless of socio-economic background. Another New Zealand study (Tuck, Ashby & Blum, 1985) found that adolescents from the families of unskilled and semi-skilled manual wage workers were more likely to be gender stereotyped in their attitudes to artistic job activities. Contrary to expectations, however, "social class" (operationally defined in Marxist terms) did not appear to influence attitudes to the division of labour.

A major study that was concerned with the influence of social background on occupational aspirations of New Zealand secondary school students was undertaken by Vellekoop-Baldock (1971). In this study many social variables were measured for their influence on the expressed vocational choices of a large sample of 14 year old male college students. The most important variable influencing vocational choice was found to be parental social rank, as measured by father's occupation, but within each socio-economic level, scholastic ability and educational aspirations were important influences. Vellekoop-Baldock summarises: "This survey, then, has established beyond doubt that the occupation choices of young people in New Zealand are affected by their social background" (p145).

According to Vellekoop-Baldock (1971), the effects of parental social rank are both direct and indirect. The direct influence is to define the opportunities and life chances available within each social strata, whereas indirect effects arise from the impact of socio-economic status

on scholastic ability, which in turn influences educational and occupational aspirations. For example, students whose parents were in professional or high-ranking occupations and had high levels of education were more likely to have high vocational aspirations. Support for Vellekoop-Baldock's findings is evident in a comparable New Zealand study investigating the occupational aspirations of adolescent females, undertaken by Prenter and Stewart (1976).

In summary, the literature lends support to Gottfredson's (1981) view that occupational preferences are influenced by social background. There are, however, some inconsistencies in the relevant research. Some studies suggest the status levels of children's choices are higher than social background at all "class" levels, while other studies indicate that choices closely correlate with actual socio-economic status. Most of the studies use older children and adolescents, providing no data on the influence of social background on preferences at earlier ages. This makes it difficult to establish the validity of the ages used in Gottfredson's theory.

Comparisons across the various research studies are impaired by the different concepts and measures used relating to social background. Some studies use the term "social class" in a generic way, while others use specific measures, such as income, education or socio-economic status. A major criticism of Gottfredson's theory from a research perspective is the failure to operationally define what is meant by "social class". Preferences are linked to "upper class", "middle class" and "lower/working class" backgrounds, but it is not stated

whether these classes are based on the Marxist consciousness concept of class or socio-economic level. Given the important and central role ascribed to social class in Gottfredson's theory, ways of defining and measuring social class is discussed in Appendix Two. The next section examines the most salient points from this discussion.

### Defining and measuring "social class"

Despite wide use of the term "social class" there is considerable disagreement in the sociological literature regarding the definition of "social class" (Carter, 1973). Given the confusion and lack of consistency in definitions of "social class", Carter (1973) suggests that "for the individual investigator using social class as a variable, the specific aspect of social class he is concerned with should be operationalised, measured and labelled as such, rather than using the broader rubric of social class for a more specific phenomenon e.g. occupational prestige " (p. 23). Relevant aspects of "social class" identified in Carter's review include the following: occupational prestige, global prestige, demographic characteristics such as occupation, income, education, residence and self-perceived class or status. Occupation is often a major component of objective measurement scales, as it captures much of the variance in income and education.

A number of New Zealand scales have been developed to measure the various aspects of social stratification. Currently, the Elley-Irving Socio-Economic Index (1976), an objective scale based on median income and median education level, appears to be one of the most useful scales (Knowles, 1980). The index has been shown to correlate highly with

individual measures of socio-economic status, such as income, education, savings and assets, home ownership, housing quality and standards of living (Ferguson & Horwood, 1979). The index also correlates well with the Stewart-Gorringe (1977) subjective occupational prestige scale, which updated the earlier Congalton-Havighurst (1954) scale (Stewart & Gorringe, 1977). In addition, the Elley-Irving scale is one of the few to provide an index for female workers (Elley & Irving, 1977).

An alternative to the use of existing scales was used in a recent New Zealand study undertaken by Tuck et al (1985), who used a Marxist approach to the assessment of "social class". The measurement of social class was based on the degree to which respondent's parents exercised power and authority through ownership and management of capital. Seven social classes emerged using this criteria. However, in drawing conclusions about their results, Tuck et al comment: "it is possible that the model of social class adopted for this study is inappropriate for New Zealand" (p. 19).

In light of the uncertainty of using a Marxist approach to the measurement of social class and given the high correlation of the Elley-Irving index with a number of components of social class, the latter appears, at present, to be the most appropriate means of assessing social background. It is however, a measure of socio-economic status, rather than a measure of social class per se.

### SUMMARY AND AIMS

From the research literature reviewed, it is clear that sex-role stereotypes and perceptions of social stratification develop early in childhood. Occupational preferences and occupational stereotypes are considerably influenced by these developments. Gottfredson's (1981) theory, on this basis, makes a valuable contribution to an examination of early vocational development. There are, however, a number of discrepancies between aspects of the theory and relevant findings in the literature reviewed.

First, there is some confusion over the age at which sex-role stereotypes influence childrens' occupational preferences and occupational stereotypes. Much of the literature suggests sex-typed preferences for activities emerge between the ages of two and three, with sex-role stereotypes developing between the ages of four and seven. Gottfredson (1981), however, contends that it is not until ages six to eight that the perception of appropriate sex-roles narrows down children's occupational preferences. An additional age-related inconsistency relates to whether sex-typed occupational preferences and occupational stereotypes increase or decrease with advancing age. Findings in the literature vary, which may be attributed to the type of measure used. Gottfredson suggests that occupational preferences and occupational stereotypes are highly sex-typed from the age of six and remain so through to adulthood.

Another area of discrepancy relating to sex-typed occupational preferences and stereotypes is sex differences. The research

literature strongly suggests that males are more rigidly sex-typed in their occupational preferences and occupational stereotypes than females, who demonstrate greater role flexibility. Although Kohlberg's (1966) work has been frequently cited in Gottfredson's (1981) theory, such referencing appears to be selective, as Kohlberg's comprehensive coverage of sex differences in sex role development has been ignored.

The present study aims to clarify these areas of confusion and inconsistency. To investigate whether occupational preferences are sex-typed at a younger than age six, five year old children will be included in the sample. To assess whether sex-typed occupational preferences and stereotypes increase or decrease with age, the sample age range will include five to fourteen year olds. Measures will include open-ended and forced choice items to overcome the bias introduced by using a single method of inquiry. Gender differences in degree of sex-typing will be investigated in relation to occupational preferences and occupational stereotypes.

In addition to clarifying the discrepancies between Gottfredson's (1981) theory and findings in the research literature, the present study will provide a much needed New Zealand update on sex-typed occupational stereotypes. A decade of womens' rights has recently been celebrated and it is possible that attitudes to females' occupational roles have become less traditional. Such changes might be evident in childrens' occupational preferences and stereotypes.

Discrepancies regarding the development of stratification concepts and perception of occupational prestige also need to be clarified.

Gottfredson states that these sociological concepts are not operational until the ages of nine to thirteen, but it is strongly suggested in the research literature that awareness develops as early as age five, an age at which most children can accurately rank order occupations in terms of relative importance or prestige.

The findings are less clear in relation to how social background and awareness influence preferences. According to Gottfredson (1981), the status levels of preferences match the "social class" background. Some studies support this view but others suggest that children of all ages select occupations that are higher in status regardless of socio-economic background. Nor is it clear whether males and females aspire to similar status levels of occupations at all ages or if there are developmental trends. However, not all of these studies have controlled for the effects of ability, which may have a mediating influence. All of these studies have used adolescent samples: the effect of social background on choices of younger children has not been investigated to date.

The present study aims to find out more precisely at which age children accurately perceive occupational status and their position in the social order. In addition, the age at which the status level of childrens' occupational preferences matches parental status level will be investigated. Following Carter's (1973) recommendations, the present study avoids the term "social class" using instead socio-economic status, measured by a scale developed for the New Zealand context. Although previous research has been done in New

Zealand on the influence of social background on vocational choice, there is a need to update the findings and to use samples that cover a wider age range. The present study will use both males and females, encompassing an age range of five to fourteen years. The sample will also be heterogenous, using children from diverse socio-economic backgrounds.

In addition to clarifying the influences of sex-typing and socio-economic background on childrens' expressed occupational preferences and occupational stereotypes, the present study is also interested in the existence of developmental trends. By using a large sample size and a broad age range, differences in responding according to age can be assessed. It is realised that the use of a cross-sectional design limits the ability to detect true developmental trends and, because of this provision was made for follow-up longitudinal data to be collected.

While the status variables of gender, social background and age are central to the present study, the issue to which they are related should not be overlooked. One of the key questions addressed in the present investigation is how these status variables influence the occupational preferences of children. Throughout the research literature the terms preference, aspiration and choice are used, often interchangeably. They are, however, quite distinct terms that can be conceptualised on a reality continuum. Aspirations are the expression of what one would like to be if one could be anything she or he wished to be. Preferences are more realistic and indicate what one would



reasonably like to be. Choices are the most realistic and are made with due consideration for social or educational constraints. For the purposes of the present study the term preference is the most appropriate.

Clearly, there is a need for further investigation of early vocational development and the part that sex-role stereotyping and social background play in the development of occupational preference. Such research has considerable implication for vocational counselling and, more particularly, careers education programmes. If, in fact, vocational choices are narrowed down at an early age by sex-role stereotypes and socio-economic background then it may be necessary to begin careers education programmes before children reach secondary school. The range of occupations entered by the majority of women is narrow and reflects traditional sex-role stereotypes. Recent campaigns (e.g. "Girls Can Do Anything") have been designed to encourage women and girls into non-traditional careers. More information about when sex stereotypes restrict womens' careers can be used to plan optimum timing of such campaigns.

#### HYPOTHESES

From Gottfredson's theory and the review of literature related to the theory, a number of hypotheses pertaining to the influence of age, gender, ability and social background on childrens' occupational preferences can be derived.

### Hypothesis One

the occupational preferences of males and females (both free choice and forced choice) will be sex-typed from the age of six, but the preferences of males will be more strongly sex-typed than those of females

According to Gottfredson's theory occupational preferences for males and females will reflect sex-role stereotypes from the age of six. The research literature (Frost and Diamond, 1979; Payne, 1981; Tremaine et al, 1979) also suggests that males are more strongly sex-typed in their occupational preferences than females.

### Hypothesis Two

both males and females at all ages will hold similar occupational sex stereotypes from the age of six, but these will become weaker (more androgynous) with age

The sex-type of occupational stereotypes perceived by children appear from the literature to be similar for males and females (Goldstein & Oldham, 1979; Gottfredson, 1981), but these have been found to become weaker with age (Garrett et al, 1977). Although Gottfredson suggests that such stereotypes do not emerge until Stage Two (ages six to eight), some researchers have found sex-typing of occupational stereotypes at younger ages (e.g. Goldstein & Oldham, 1979).

### Hypothesis Three

the status level of occupational preferences for both males and females aged nine and over will correspond with parental status level primarily, although ability will also contribute to the status level of occupational preference

Occupational preferences are considered by Gottfredson (1981) to be influenced by social background. A review of studies by Clarke (1980) lends support to this view. In particular, Gottfredson states that the status level of childrens' occupational preferences from the age of nine will closely parallel actual social position. Ability further influences the status level of occupational preferences, but its effect is secondary to that of social background.

### Hypothesis Four

the status level of female occupational preferences will be higher than the status level of male occupational preferences at ages less than nine but there will be no sex differences in children aged older than nine

In relation to the status level of occupations, Gottfredson (1981) claims that the status level of female preferences starts out higher than for males up to age nine, but decreases after this age. The status level of male preferences, on the other hand, increases from the

age of nine. Hence, there are sex differences in the status level of occupational preferences prior to age nine but beyond this age, there are no sex differences.

#### Hypothesis Five

the accuracy of perceived status (importance) of occupations (forced choice) will be evident from age nine, increasing in accuracy with age

The development of an awareness of social differences influences not only occupational preferences from the age of nine, but also the perceived status of occupations. Contrary to Gottfredson's (1981) theory, the findings of Goldstein and Oldham (1979), Lauer (1974) and Simmons and Rosenberg (1971) suggest that children from a very young age (five to eight) are able to rank the status of occupations in accordance with actual status levels, with the degree of accuracy increasing with age.

#### Hypothesis Six

the accuracy of perceived social position ("social class") will be evident from the age of nine

A further effect of the development of awareness of social differences is the ability to recognise ones own social position. Gottfredson's

(1981) theory predicts that the accuracy of social position will emerge between the ages of nine and thirteen. The research findings are somewhat inconsistent regarding the age at which an accurate awareness of social position occurs, but there is general agreement that accuracy of self-perceived social position increases with age (e.g. Simmons and Rosenberg, 1971).

## CHAPTER TWO

### METHOD

#### SUBJECTS

The subjects participating in this study were 396 pupils ( 50.3% female, 49.7% male) attending schools in an urban region of the North Island. Of these pupils, 80 (20.2%) were New Entrants aged between five and five and a half, 77 (19.4%) were Standard One pupils aged seven and a half to eight years, 109 ( 27.5%) were Intermediate students aged 11 to 13, and 130 ( 32.8%) were in Form Four, aged 13 to 15 years.

Eight schools participated in the study. Three of the schools were Primary Schools, two were Intermediate Schools, two were Secondary Schools and one was a combined Intermediate/Secondary School. All schools except one were State schools. Schools were selected to represent a cross-section of socio- economic groups. This selection was assisted by school principals and University Department of Education staff. Of the schools approached, two primary schools declined participation. A summary of the number of participants in each class level at each school is presented in Table One. The selection of pupils within each school was discussed with each school principal. In the primary schools no sorting process was necessary as all pupils at the stipulated age were needed to obtain the required number of participants. In the secondary schools care was taken to use core subject classes. Two of the secondary schools were unstreamed and presented a range of abilities within the selected fourth form classes.

In the one streamed secondary school, a fourth form class at each ability level was used.

TABLE ONE

Number of Participants by School and Class Level

School	School Class Level			
	New	Standard	Inter-	Form
	Entrant	One	Mediate	Four
A	26	24	-	-
B	29	28	-	-
C	25	25	-	-
D	-	-	32	-
E	-	-	48	-
F	-	-	29	27
G	-	-	-	76
H	-	-	-	27

Pupil participation was voluntary and subject to parental consent. At New Entrant level there was one withdrawal. In addition, one New Entrant pupil was omitted from the sample on the basis of an inability to follow instructions. Among Standard One pupils there was one non-participant, while at Intermediate level there were six

non-participants. In this Intermediate school an alternative procedure was required by the principal ( see Procedure section) accounting for the slightly higher non-participant rate. There were no withdrawals among secondary school pupils.

### INSTRUMENTS

In order to measure vocational preferences and perceptions, two instruments constructed by the author were used. Both measures were necessarily simple because the sample included very young children and children of varying ability.

#### Question Sheet

The first of these instruments was a Question Sheet reproduced in Appendix Three. The two open-ended questions asked pupils what job they would like to do and why they would like to do it. The status (Elley-Irving rating) and sex-type (based on Census data) of the occupation named in the first question provided the free choice response. The third item, which was structured, listed a number of role models identified in the research literature (e.g Lunneborg, 1982; Weishaar et al, 1981) as influences on vocational preferences and required pupils to check the appropriate boxes. The last item asked pupils to indicate their perceived social class or to state that they either did not belong to any social class or they did not know what the term meant.



Older pupils used the Question Sheet to record parental occupations, but for younger pupils parental occupations were drawn from school records. Biographical data was not obtained on the Question Sheet but was taken from school records.

#### Occupational Card Sort

The Occupational Card Sort comprised 15 cards ( 6 c.m. by 5 c.m.) with a different occupational title written on each card ( see Appendix Four). The 15 occupations were selected to represent levels 1, 3, 4, 5 and 6 of the Elley- Irving Socio-Economic Index ( Elley & Irving, 1976, 1977), with a male sex-typed occupation, a female sex-type occupation and a neutral occupation at each of the levels. As for the classification of free choice occupational preferences, the sex-type of occupation was drawn from the actual numbers of male and female workers listed in the 1981 Census as working in the selected occupations. An occupation was sex-typed if more than 60% of employees in that occupation were of a particular gender. This method of selecting sex-typed occupations was used by Garrett et al (1977), Beyard-Tyler and Haring (1984) and Tremaine and Schau (1979). Use of actual numbers of males and females in an occupation to ascertain sex-type is further supported by Treiman and Terrill's (1975) finding that perceived sex-type is correlated .85 with actual percentages in an occupation. Occupations classified Level 2 by the Elley-Irving index were excluded because it was not possible to obtain suitable sex-typed occupations at this level. Criteria for suitability was that the job be easily recognised and understood by five year olds. Occupations were

pilot-tested informally to ensure suitability. A summary of the occupations used in the Occupational Card Sort by sex-type and prestige level is presented in Table Two.

TABLE TWO

Occupations at Each Status Level and of Each Sex-Type in the Occupational Card Sort

Status Level	Sex-Type of Occupations		
	Male	Androgynous	Female
1	Doctor	Secondary Teacher	Librarian
2	Police Officer	Sports Coach	Nurse
3	Mechanic	Mail Sorter	Typist
4	Truck Driver	Potter	Hairdresser
5	Jockey	Factory Worker	Cleaner

Forced choice occupational preferences, status level of occupational stereotypes and sex-typing of occupational stereotypes were measured with the Occupational Card Sort. The card sort technique was selected because of its suitability for the concrete operational level of younger pupils and pupils of lower ability. In addition, this technique facilitated hierarchical ordering of preferences and prestige ratings in a manner more difficult to obtain with a standard questionnaire format. Card sorts have been found to be of particular value with younger people for vocational counselling (e.g. Dolliver & Will, 1977), for self-assessment of learning skills (Downs and Perry, 1979) and for depression assessment (e.g. Lang & Tistern, 1978). As well as providing concrete manipulation, card sorts appear to have a high motivational value for children and young adults alike.

Each set of 15 Occupation Cards was packed in a small mini-grip plastic bag. Three of these packs were stapled to the Question Sheet for distribution to each pupil. Included with two packs were label cards to be used for relevant sorting tasks. For the preference sorting task the label cards had "MOST LIKED" and "LEAST LIKED" written on them while the sex-typing sorting task used the label cards "WOMEN", "MEN" and "BOTH MEN AND WOMEN". The outside of each bag in the pack was labelled with a task label (A, B, C) and a code number. This code number was also written at the top of the Question Sheet. In addition, a tear-off code card stapled to the outermost plastic bag was provided for pupils to record the code number of their pack and their name. This procedure was used to ensure confidentiality of data. No names appeared on any data, only code numbers.

The 15 cards in the preference sorting pack and the sex-type sorting pack were arranged in single sets, but the cards for the perceived importance task were grouped into sets of five (see Appendix Five). Cards within each set of five were randomly selected to represent each socio-economic level and sex-type. The reason for grouping the cards into sets of five was that the cognitive skills of younger and less able children would not be sufficiently well developed to facilitate ordering of 15 occupations. This was confirmed by the informal pilot testing.

A parallel set of Occupational Cards were developed for use with five year old children. Pilot testing revealed that children at this level needed concrete cues to help them recognise job titles. Consequently the cards developed included a picture cue that was representative of the occupation. To avoid any sex bias, no human forms were used in any of the pictures. The alternative cards were considerably larger than the original set (see Appendix Six). A recording sheet for use by the interviewer was constructed for use with the cards ( see Appendix Seven).

#### Consent Form and Letter

In order to obtain informed consent, a letter to parents was written, outlining the purpose of the study and requesting consent for their child to take part in the research. A tear-off consent form was included with the letter. This was designed to be returned to school if parents did not wish their child to take part or if children

themselves did not wish to participate ( see Appendix Eight).

### Biographic and Ability Data

Measures of ability were taken from Progress and Achievement Test results at Intermediate and Secondary School level. These tests are objective, standardised achievement tests used throughout schools in New Zealand. The tests have high reliability and validity and good correlation with the W.I.S.C., on the verbal tests in particular (Chapman & St. George, 1984). Only verbal tests were used as these were uniformly available in all Intermediate and Secondary schools. Test score percentiles were converted to a rating scale (1 to 5). The cut-off points for each scale rating, with the number of pupils receiving each rating, are provided in Appendix Nine).

For the New Entrant and Standard One pupils standardised tests of ability were not available. As an alternative measure, teacher ratings of pupil ability on a 1-5 scale were used. Such ratings can only be used as an estimate of pupil ability. To obtain even subjective measures for New Entrant children presents considerable difficulties.

Parental occupations were coded for prestige level using the Elley-Irving Socio-Economic Index (1976) for males and the Elley-Irving Socio-Economic Index (1977) for Female Occupations for females. The higher of the two parents' S.E.S. rating was used as an indication of social background for pupils. All coding was carried out by the researcher in consultation with another psychologist familiar with the

Elley-Irving index.

#### PILOT TESTING

In addition to preliminary pilot testing during the development of instruments, formal pilot-test procedures were carried out with New Entrants and Standard One pupils in an urban primary school and with Intermediate and Form 4 pupils in a Form One to Seven school.

Both instruments were found to be suitable across all age groups and for use with individuals, small groups or whole classes. Consequently, pilot data were able to be used in the analyses.

#### PROCEDURE

In order to obtain entry into schools, two ethics committees (one a university committee and the other a committee concerned specifically with research in schools) screened and approved the research.

For each school, an initial visit to classes of participants was made in order to explain the study and distribute the consent letters for parents. At this introductory meeting, pupils were told that they did not have to take part if they did not wish to. In addition, they were told that if they did choose to take part their responses would be entirely confidential. A transcript of the introduction session is provided in Appendix 10. Pupils were also given the opportunity to ask

questions about the study. At least three days elapsed between this initial contact and the time appointed to carry out the study.

Five year olds were interviewed individually by the interviewer and, in one school, by a research assistant. Seven year olds worked individually in groups of five to ten while Intermediate and Form Four pupils worked individually in class groups. At each level, subjects were first of all reminded about the purpose of the study and about the confidentiality ( suitably worded according to age level) of their responses. They were told that there were no right or wrong answers and that it was important for each person to give her/his own opinion. The Question Sheet with the Card Sort material attached was then distributed.

When each subject had received the materials, they were asked to complete the tear-off code card and completed cards were collected immediately. The researcher completed the label in the case of five year olds. The items on the Question Sheet were then read out by the researcher and any questions about the items were answered. Subjects were then instructed to complete all four items and older pupils were asked to record parental occupations at the bottom of the sheet. Assistance was given to any pupils having difficulty filling in the Question Sheet. For five year olds and seven and a half to eight year olds, each question was asked individually, with responses recorded by the researcher in the case of five year olds and less able seven and a half to eight year olds. Although parental occupations for these subjects were obtained from school records, respondents were asked what jobs their parents did as part of the introduction to the interview.

Once the question sheets had been completed by all pupils, the Occupational Card Sort was introduced. Pupils were told that the card packs contained 15 cards with the name of a different job written on each card. It was explained that each pack also contained label cards which would be used to sort the cards in different ways. Subjects were then told to take the 15 job cards out of the first pack marked Task A. A brief description of each job ( see Appendix 11) was read out, with pupils checking each card as the job was described. Following the job descriptions, separate instructions were given for each sorting task.

The order of presentation was the same for each group, class and individual. The preference task was presented first since it was a logical follow up to the free choice question sheet. The perceived importance task preceded the perceived sex-type sorting task as previous research (e.g. Touhey, 1974) has found that the sex-type of an occupation influences perceptions of occupational prestige. Given the invariant presentation, order effects may have occurred, but the necessity of giving instructions to all pupils at the same time precluded the use of counterbalancing. The instructions for each sorting task are set out below. For five year olds all tasks were undertaken in an individual interview situation and large picture cue cards were used in place of the card packs. Label cards were not used and subjects' responses were recorded on a separate recording sheet by the researcher.

#### TASK A

Subjects were asked to set out the two label cards MOST LIKED and LEAST LIKED and to place under the MOST LIKED label all the jobs they would



like to do, while putting all the jobs they would not like to do under the LEAST LIKED label. The next step, when all pupils had sorted the cards, required pupils to select from the MOST LIKED group the job they would like to do most. They were instructed to write the number one on the front of this job card. Subjects were then asked to make a second choice from the MOST LIKED group and were told to write on this card the number two. These procedures were repeated for the cards in the LEAST LIKED group, substituting the words least liked ( "the job that would be your last choice") for most liked. When subjects had finished this task, they were asked to replace the cards in the bag and take out the cards in the second pack, labelled TASK B.

#### TASK B

It was explained to subjects that they would be using the same 15 jobs but that this time they would be sorting the cards in groups of five. Subjects were asked to think about how important they thought each job in the group was and then number each job card according to how important it seemed to be to them. The blackboard was used to demonstrate that the number one was to be written on the job considered to be most important, number two on the next important, number three on the next important, number four on the next important and number five on the least important. It was explained that this was to be done for each group of five. Pupils were told to replace the rubber band around each group of five once it was completed.

TASK C

Subjects were asked to think about who, in their opinion, would like to do each job- women, men or both women and men. After this introduction, pupils were instructed to set out the three label cards ("WOMEN", " MEN", " BOTH MEN AND WOMEN") and sort the cards into groups according to who they thought would like to do each job. Once the sorting was completed, subjects were asked to write on each card which group the card had been placed in. Pupils were then told to return the cards to the bag labelled Task C. Materials were then collected.

At the completion of the session, an opportunity for pupils to give feedback and ask questions was provided. Pupils were then thanked for their co-operation and informed that they would receive information about the study results later in the year.

Feedback to all schools participating in the study was provided once preliminary data analyses had been undertaken. In addition, a letter to parents (see Appendix 12) was written, outlining the main results of the study.

### DEPENDENT AND INDEPENDENT VARIABLES

The major dependent variables were the sex-type and status level of occupational preferences. These were measured using both free choice and forced choice methods. The sex-type of preferences was based on the actual numbers of males and females in a particular occupation, derived from Census data. The status levels of occupational preferences were obtained from the Elley-Irving Index for male and female occupations, but subsequently collapsed from six levels to three (high, medium, low).

Two additional dependent variables used were perceived sex-type and status level of occupations (occupational stereotypes), using a forced choice card sort method. Sex-type was measured by assignation of a job as being better suited to men (male sex-type), women (female sex-type) or both men and women (androgynous). Perceived status level of occupations was measured by a one to five rating scale of relative importance.

The independent variables used in the present study comprised gender, age, ability and parental socio-economic status. Ability was teacher assessed on a one to five scale (exceptional ability to limited ability) for New Entrant and Standard One children but verbal Progress and Achievement Tests (P.A.T.) were used to assess the ability of Intermediate and Form Four pupils. Parental socio-economic status was measured using the Elley-Irving Socio-Economic Index for male and female occupations. The higher of the two socio-economic levels was used in two parent families.

### CHAPTER THREE: RESULTS

The types of data obtained from the dependent and independent measures included categorical data (gender of respondents, sex-type of occupations, socio-economic level of occupations) and continuous or quasi-continuous data (ability estimate, age, parental socio-economic status). The issue concerning the treatment of socio-economic status as a continuous variable when it is a dependent measure is discussed in Appendix 13. This appendix also covers a discussion about different analyses which were considered for examining the data.

Although contingency analyses and Chi squares were suitable, more precise analyses were required in order to specifically test the hypotheses drawn from Gottfredson's (1981) theory and the relevant research literature. Hence, discriminant analysis was ultimately selected because of its ability to deal with various types of data (categorical and continuous) and its facility to test hypotheses, using a regression type procedure. Results of the contingency analyses were used to supplement results obtained from discriminant analysis. All analyses were undertaken with SPSSX (SPSSX Users Guide 1982; SPSSX Advanced Users Guide, 1985). The presentation of results is organised into four major sections comprising sex-type of occupational preferences, status level of occupational preferences, occupational stereotypes and self-perceived social class.

#### SEX-TYPE OF OCCUPATIONAL PREFERENCES (FREE AND FORCED CHOICE)

Gottfredson's (1981) theory predicts that the occupational preferences

of children aged less than six will not be sex-typed (Hypothesis One). Accordingly, data for this age group (average age 5.3 years) was analysed separately from that of the remaining older respondents (average age 11.9 years). The variables entered for discriminant analysis were gender, ability, age and parental socio-economic status, with sex-type of occupational preferences (male, female, androgynous) as the dependent measure.

In each of the free choice and forced choice conditions, for both age groups, one discriminant function was highly significant. Subsequent analyses were therefore carried out for the significant function only. In order to measure the degree of association between the discriminant function (representing the predictor variables) and the groups

TABLE 3

Canonical Correlations and Significance Levels for Sex-Type of Occupational Preferences in the Free and Forced Choice Conditions for Respondents YOUNGER THAN SIX

Canonical Discriminant Function						
Choice	N	Canon.	Wilks	Chi	D.F.	Sig.
Condition		Corr.	Lambda	Squared		
Free Choice	61	.718	.476	41.97	8	0.000
Forced Choice	65	.521	.670	24.18	8	0.002

(sex-type of preferred occupations), canonical correlations were examined.

In the free choice condition for the younger age group the canonical correlation was high (.718) and very significant ( $p < .001$ ). Although the canonical correlation in the forced choice condition was slightly lower (.520) it was still highly significant, as shown in Table Three.

In the older age group, the canonical correlations for the free choice and forced choice conditions were similar (.596 and .580) and highly significant ( $p < .001$ ). These results are presented in Table Four.

TABLE 4

Canonical Correlations and Significance Levels for Sex-Type of Occupational Preferences in the Free and Forced Choice Conditions for Respondents OLDER THAN SIX

Canonical Discriminant Function						
Choice	N	Canon.	Wilks	Chi	D.F.	Sig.
Condition		Corr.	Lambda	Squared		
Free Choice	267	.596	.635	118.97	8	0.000
Forced Choice	278	.580	.647	119.19	8	0.000

Identification of which variables contribute most to a discriminant function can be made through the examination of standardised and structural co-efficients. The standardised co-efficients give the contribution of each variable entered to the discriminant function, while structural co-efficients indicate how closely a variable and a function are correlated (Klecka, 1980). Both types of co-efficients calculated for the present data are listed in Table Five for the younger age group and Table Six for the older age group.

TABLE 5

Standardised and Structural Canonical Discriminant Co-Efficients for Each of the Variables Entered in the Free and Forced Choice Conditions of Sex-Type of Occupational Preferences for Respondents YOUNGER THAN SIX

Variables	Standardised Co-Efficients		Structural Co-Efficients	
	Free Choice	Forced Choice	Free Choice	Forced Choice
Age	.159	.543	.013	.002
Ability	-.225	.062	-.073	-.007
Parental	.150	.344	.071	-.137
S.E.S.				
Gender	1.012	.910	.963	.953

note: canonical correlations and significance levels in Table Three

TABLE 6

Standardised and Structural Canonical Discriminant Co-Efficients for  
Each of the Variables Entered for Free and Forced Choice Conditions of  
Sex-Type of Occupational Preferences for Respondents OLDER THAN SIX

Variables	Standardised Co-Efficients		Structural Co-Efficients	
	Free Choice	Forced Choice	Free Choice	Forced Choice
Age	.005	.154	.068	.002
Ability	-.050	-.100	.058	-.002
Parental	-.063	-.222	.028	-.137
S.E.S.				
Gender	1.005	1.016	.996	.953

note: canonical correlations and significance levels in Table Four

As can be seen from Tables Five and Six, across each age group and choice condition (free and forced) the magnitude of the gender variable was very high, indicating that gender made the most powerful contribution to the discriminant function.

To further investigate Gottfredson's (1981) theory, a stepwise method was specified thus making it possible to use the "Analysis" subcommand in SPSSX ( SPSSX Users Guide, 1982, p.628) to control the order in which variables were entered. Variables were forced into the analysis in accordance with theoretical predictions provided they reached the



probability level ( $p < .05$ ) for entry. The inclusion levels chosen precluded backward elimination and specified that gender, one of the major determinants of sextype of occupational preferences in Gottfredson's theory, be forced into the analysis first, followed by ability, age and parental socio-economic status, in listed order. Results of the specified order stepwise analysis are presented in Table Seven for younger respondents and Table Eight for older respondents.

TABLE 7

Canonical Correlations and Significance Levels for Specified Order  
Stepwise Analysis of Sex-Type of Occupational Preferences in the Free  
and Forced Choice Conditions for Respondents YOUNGER THAN SIX

Canonical Discriminant Function							
Choice Condition	N	Variables	Canon.	Wilks	Chi	D.F.	Sig.
		Entered	Corr.	Lambda	Squared		
Free Choice	61	gender	.705	.502	39.926	2	0.000
Forced Choice	65	gender	.495	.700	21.908	4	0.000
		age					

TABLE 8

Canonical Correlations and Significance Levels for Specified Order  
Stepwise Analysis of Sex-Type of Occupational Preferences in Free and  
Forced Choice Conditions for Respondents OLDER THAN SIX

Canonical Discriminant Function							
Choice	N	Variables	Canon.	Wilks	Chi	D.F.	Sig.
Condition		Entered	Corr.	Lambda	Squared		
Free Choice	267	gender	.595	.646	115.27	2	0.000
Forced Choice	278	gender	.574	.657	115.17	4	0.000
		parental					
		S.E.S.					

It can be seen that in the free-choice condition, only gender reached the probability level for inclusion ( $p < .05$ ) and was highly significant ( $p < .001$ ) for both age groups. For five year olds, the canonical correlation between gender and sex-type of occupational preference was very high (.705), but the canonical correlation for the older age group was slightly lower (.594). The remaining variables (ability, age and parental socio-economic status) did not contribute a significant ( $p > .05$ ) increment to the variance in sex-type of occupational preferences. This is further highlighted by the small drop in the canonical correlation when gender only was in the function (Table Seven, compared with the canonical correlation with all variables

TABLE 9

Significance of Differences between Pairs of Sex-Typed Preferences  
in the Free and Forced Choice Conditions for Respondents YOUNGER THAN  
SIX (Forced Order Stepwise Analysis)

		Discriminant Group Pairs					
		Female-Male		Female-Androg.		Male-Androg.	
Choice	Variables	F	Sig.	F	Sig.	F	Sig.
Condition	Entered						
Free	gender	54.827	0.0000	2.740	.1033	12.726	0.0007
Forced	gender	14.926	0.0003	4.544	.037	.831	0.3655
	age	8.328	0.0006	6.990	.0018	2.450	0.0948

In the forced order stepwise analysis for forced choice occupational preferences, F statistics for between group comparisons were calculated for gender and age in the younger group, since both these variables reached the significance level for inclusion (Table Seven). Both variables distinguished significantly between male/female sex-typed preferences and between female sex-type/androgynous preferences, but not between male sex-type/androgynous preferences, as shown in Table Nine.

In the older age group, gender and parental socio-economic status

reached the significance level for inclusion (Table Eight). Hence, F tests of between group comparisons were made with each of these variables stepped in. Both variables distinguished significantly between all three types of preferences, as shown in Table 10.

TABLE 10

Significance of Differences between Pairs of Sex-Typed Occupational Preferences  
in the Free and Forced Choice Conditions for Responents OLDER THAN SIX (Forced Order Stepwise Analysis)

		Discriminant Group Pairs					
		Female-Male		Female-Androg.		Male-Androg.	
Choice	Variables	F	Sig.	F	Sig.	F	Sig.
Condition	Entered						
Free	gender	141.64	0.0000	3.398	0.0664	14.662	0.0002
Forced	gender	129.99	0.0000	33.628	0.0000	9.950	0.0018
	parental	67.121	0.0000	22.848	0.0000	6.064	0.0026

As the sample was sufficiently large, cross validation of the effect for gender was undertaken using the free choice condition. A random sample of 30% of original cases were selected for analysis (SSPSX, p 634). Using the function derived from these cases, 77.6% were correctly classified. When this function was used to analyse

unselected cases, the number correctly classified was slightly less (71.3%), but this difference was not significant ( $\chi^2(1) = 1.53, p > .05$ ), corrected for continuity). Results for this analysis are included in Appendix 14). The cross validation suggests the influence of gender on sex-type of occupational preference is extremely robust.

Taken together, the results from the discriminant analyses do not support the hypothesis (Hypothesis One) that the occupational preferences of respondents aged under six years would not be sex-typed. Rather, preferences at all ages were clearly sex-typed, particularly among the younger group.

#### Results of Supplementary Contingency Analyses for Sex-Type

Results of chi square analyses undertaken to supplement the discriminant analysis further supported the strong influence of gender. Table 11 shows the sex-type of occupational preferences for males and females, collapsed across age groups.

It can be seen from Table 11 that the majority of males and females preferred same sex-type occupations in the free choice condition. These results were highly significant ( $\chi^2(2) = 132.25, p < .001$ ). Although preferences were clearly sex-typed by both males and females, a higher percentage of females (31%) preferred cross-sex occupations than did males (7%). Results of the free choice analysis were replicated in the forced choice analysis ( $\chi^2(2) = 111.6, p < .001$ ), with 29.6% of females selecting cross-sex occupations as opposed to 10.8% of males choosing cross-sex jobs. The results of the preceding two contingency analyses

for free choice and forced choice data supported the second part of

TABLE 11

Sex-Type of Occupational Preferences (Free Choice) for males and females, collapsed across all age groups

		Sex-Type of Occupation					
		Female		Male		Androgynous	Total
Gender	N	%	N	%	N	%	
Females	112	59.8	58	31.0	17	9.1	187
Males	13	7.0	164	88.6	8	4.3	185

$$\text{chi } (2) = 132.25, p < .001$$

Hypothesis One that the occupational preferences of males would be more rigidly sex-typed than those of females.

#### SOCIO-ECONOMIC STATUS LEVEL OF PREFERENCES (FREE AND FORCED CHOICE)

According to Gottfredson's (1981) theory, occupational preferences are narrowed down by social background between the ages of nine and thirteen (Hypothesis Three). Data relating to the socio-economic

status of occupational preferences were therefore analysed for two age groups: respondents younger than nine (average age 6.5) and respondents older than nine (average age 13.2). Using socio-economic status of occupational preferences as the dependent measure (collapsed into high, medium, low), parental socio-economic status (not collapsed), ability, age and gender were entered for discriminant function analysis.

TABLE 12

Canonical Correlations and Significance Levels for Socio-Economic Level of Occupational Preferences in Free and Forced Choice Conditions for Respondents OLDER THAN NINE

		Canonical Discriminant Function				
Choice	N	Canon.	Wilks	Chi	D.F.	Sig.
Condition		Corr.	Lambda	Squared		
Free Choice	207	.465	.763	54.798	8	0.000
Forced Choice	211	.319	.883	25.638	8	0.001

In the younger age group, no significant discriminant functions were found for either free choice or forced choice preferences. For the older age group, in both free choice and forced choice conditions, one discriminant function was significant ( $p < .001$ ), with moderate canonical correlations in the free choice (.465) and forced choice (.319)

conditions. These results for the older age group are shown in Table 12. Examination of the standardised and structural discriminant function co-efficients presented in Table 13. reveals that ability contributed most to the discriminant function.

TABLE 13

Standardised and Structural Discriminant Function Co-Efficients for  
Each of the Variables Entered for Socio-Economic Level of Occupational  
Preferences in Free and  
Forced Choice Conditions for Respondents OLDER THAN NINE

Variables	Standardised Co-Efficients		Structural Co-Efficients	
	Free Choice	Forced Choice	Free Choice	Forced Choice
age	-.082	-.177	-.022	-.091
ability	.864	.941	-.934	.970
parental	.311	.150	.587	.520
S.E.S.				
gender	-.205	-.130	-.040	.023

To test the hypothesis more specifically, a specified order stepwise analysis was undertaken (see page .64 for a description). Since Gottfredson's (1981) theory suggests that the status level of preferences are primarily influenced by social background and secondarily by ability, parental socio-economic status was forced into the analysis first, followed by ability, age and gender, in listed



order. Data for the specified order stepwise analysis are presented in Table 14 (younger respondents) and Table 15 (older respondents).

TABLE 14

Canonical Correlations and Significance Levels for Forced Order  
Stepwise Analysis of Socio-Economic Level of Occupational Preferences  
in Free and Forced Choice Conditions for Respondents YOUNGER THAN  
NINE

Canonical Discriminant Function							
Choice	N	Variables	Canon.	Wilks	Chi	D.F	Sig.
Condition		Entered	Corr.	Lambda	Squared		
Free Choice	110	-	-	-	-	-	-
Forced Choice	132	parental	.282	.920	10.708	2	0.005

For the younger age group, no variables reached the probability level for inclusion (pin level;  $p < .05$ ) in the free choice condition, but parental socio-economic status did reach the pin level for inclusion in the forced choice condition. The reason for the significant reading of parental socio-economic status in the stepwise analysis (see Table 14), despite a non-significant discriminant function with all variables probably relates to different degrees of freedom (2 in the stepwise analysis versus 8 in the analysis with all independent variables entered.)

TABLE 15

Canonical Correlations and Significance Levels for Stepwise Analysis  
of Socio-Economic Level of Occupational Preferences in the Free and  
Forced Choice Conditions for Respondents OLDER THAN NINE

		Canonical Discriminant Function					
Choice Condition	N	Variables	Canon.	Wilks	Chi	D.F.	Sig.
		Entered	Corr.	Lambda	Squared		
Free Choice	207	parental	.464	.764	54.629	6	0.000
		S.E.S.					
		ability					
		gender					
Forced Choice	211	parental	.313	.894	23.232	4	0.000

In the older age group, parental socio-economic status, ability and gender reached the probability level for inclusion in the free choice condition. These variables were clearly significant ( $p < .001$ ), with a moderate canonical correlation (.464). For forced choice preferences, only parental socio-economic status and ability reached the probability level for inclusion ( $p < .05$ ) with a moderate canonical correlation (.313,  $p < .001$ ).

In order to more accurately test the hypothesis (second part of Hypothesis Three) that the level of occupational preferences would be

most influenced by social background (as measured by parental socio-economic status) and less influenced by ability, additional forced entry stepwise analyses were carried out forcing in ability first. These analyses were undertaken for both the free choice and forced choice conditions, but only for the older age group (average age 13.2) since ability did not reach the significance level for inclusion in free or forced choice analyses for younger respondents. With ability forced first into the analysis, results were highly significant ( $p < .001$ ) in both free choice and forced choice conditions. However, when an attempt was made to enter parental socio-economic status it did not contribute sufficient unique variance to reach the probability level for inclusion ( $p < .05$ ). This contrasts with the analysis in which parental socio-economic status was forced into the analysis first, with ability making sufficient independent contribution to reach the significance level for inclusion.

The stronger contribution of ability at the older age level is further highlighted in the standardised and structural co-efficients for the discriminant function (Table 13), which indicate that ability contributed more to the discriminant function than did parental socio-economic status. Although the effect for ability on level of preference appears to be stronger than parental socio-economic status the relationship between ability and socio-economic status must be taken into account (Pearson  $r = .34$ ,  $p < .001$ ). Hence, for present data, parental socio-economic status may have had an indirect effect on status level of occupational preference, through its influence on ability rather than having a direct effect. Many other models (e.g. Farmer, 1985) suggest that indirect and direct effects may occur.

The capacity of the variables in the specified order stepwise discriminant function to distinguish significantly between pairs of groups (high, medium and low socio-economic status level of occupational preferences) was examined with F tests. Results for the younger age group in the free choice condition were not significant, but parental socio-economic status in the forced choice preferences of the younger age respondents significantly distinguished between high/low and medium/low level preferences but not between high/medium level preferences. These results are shown in Table 16.

TABLE 16

Significance of Differences in the Stepwise Discriminant Function  
between Pairs of Socio-Economic Status Levels of Occupational  
Preferences in Free  
and Forced Choice Conditions for Respondents YOUNGER THAN NINE

		Discriminant Group Pairs							
		High-Medium		High-Low		Medium-Low			
Choice	N	Variables	F	Sig.	F	Sig.	F	Sig.	
Condition		Entered							
Free Choice	110	-	-	-	-	-	-	-	-
Forced Choice	132	parental	.654	.4200	7.595	.007	7.500	.007	
		S.E.S.							

In the older age group, parental socio-economic status distinguished significantly between high/low and between high/medium level preferences, but not between medium/low level preferences in the free choice condition. When ability was added into the analysis, however, the distinction between all three status levels of preferences was significant ( $p < .05$ ). The inclusion of gender in the analysis further

TABLE 17

Significance of Differences in the Stepwise Discriminant Function  
between Pairs of Socio-Economic Status Levels of Occupational  
Preferences (High, Medium, Low) in Free and Forced Choice Conditions  
for Respondents OLDER THAN NINE

Discriminant Group Pairs								
			High-Medium		High-Low		Medium-Low	
Choice	N	Variables	F	Sig.	F	Sig.	F	Sig.
Condition		Entered						
Free Choice	207	parental	13.389	0.000	14.148	0.000	1.371	0.243
		S.E.S.						
		ability						
		gender						
Forced Choice		parental						
		S.E.S.	7.851	0.006	5.050	0.026	0.284	0.599
		ability						

increased the significance in the distinction between low/medium level preferences ( $p < .01$ ). These results are presented in Table 17.

Forced choice results for the older age group were similar to free choice results when parental socio-economic status was entered, but the inclusion of ability did not make the distinction between all three status levels of preferences significant (Table 17). Gender did not reach the probability level for inclusion in the forced choice condition.

The results of the discriminant analyses for socio-economic level of occupational preferences generally supported the hypothesis (Hypothesis Three) that level of preferences would be influenced by social background only for respondents aged older than nine. However, the second part of Hypothesis Three that the influence of ability would be less important than that of socio-economic status was not supported.

As with the sex-type of occupational preferences, cross validation for the overall effect of parental socio-economic status was carried out, using data for all respondents. Again, a random sample of 30% of the original cases were selected for analysis. Of the selected cases, 40.65% were correctly classified, with slightly less of the unselected cases correctly classified (36.96%). This difference was not significant ( $\chi^2(1) = 1.86$ ,  $p > .05$ , Yates correction used). These results are shown in Appendix 15. Although the percentages correctly classified indicate that parental socio-economic status is a relatively weak predictor for the status level of occupational preferences, the non-significant results for the comparison between selected and

unselected cases indicate that parental socio-economic status is a stable predictor.

#### Results of Supplementary Contingency Analyses for Socio-economic Status

The results obtained from the discriminant analyses were supported and clarified through supplementary contingency analyses. In the younger age group (average age 6.5) no significant effect for parental socio-economic status was found in either the free choice condition

TABLE 18

Number and Percentage of Respondents OLDER THAN NINE Selecting Each Socio-Economic Status Level of Occupation (High, Medium, Low) at Each Parental Socio-Economic Status Level (High, Medium, Low)

Socio-Economic Status Levels of Preferences							
Parental Socio-Economic Status	High		Medium		Low		Total
	N	%	N	%	N	%	N
High	26	65	13	32.5	1	2.1	40
Medium	46	36.5	64	50.8	16	12.7	126
Low	10	19.6	27	52.9	14	27.4	51

chi (2) = 14.1,  $p < .001$

(chi (4)=3.79,  $p > .05$ ) or the forced choice condition (chi (2)=.705,

$p > .05$ ). For the older age group (average age 13.2), the effect for parental socio-economic status in both the free choice ( $\chi^2(4) = 25.12$ ,  $p < .001$ ) and forced choice condition ( $\chi^2(2) = 14.1$ ,  $p < .001$ ) was highly significant. The results for the status level of free choice preferences in the older age group are presented in Table 18.

It can be seen in Table 18 that most respondents from high socio-economic backgrounds selected high status level occupations (65%), while most middle socio-economic respondents chose high (36.5%) to middle (50.1%) status level occupations. Those from low socio-economic backgrounds mostly chose middle (52.9%) to low (27.4%) level preferences. This pattern supports the hypothesis (Hypothesis Three) that levels of occupational preferences for respondents aged nine years and over would reflect parental socio-economic background.

The strong effect for ability highlighted in the discriminant analysis was clearly evident in the results of contingency analyses. In the younger age group (aged under nine years) the effect for ability on the level of free choice and forced choice occupational preferences was not significant ( $\chi^2(8) = 5.83$ ,  $p > .05$  and  $\chi^2(4) = 4.96$ ,  $p > .05$  respectively). For older respondents (aged over nine years) results for the effect of ability were highly significant in the free choice condition ( $\chi^2(8) = 47.3$ ,  $p < .001$ ) and slightly less significant in the forced choice condition ( $\chi^2(4) = 11.7$ ,  $p < .05$ ). A graphic representation of the results for the free choice condition is provided in order to clearly show the relationship between ability and level of occupational preference (Figure One).



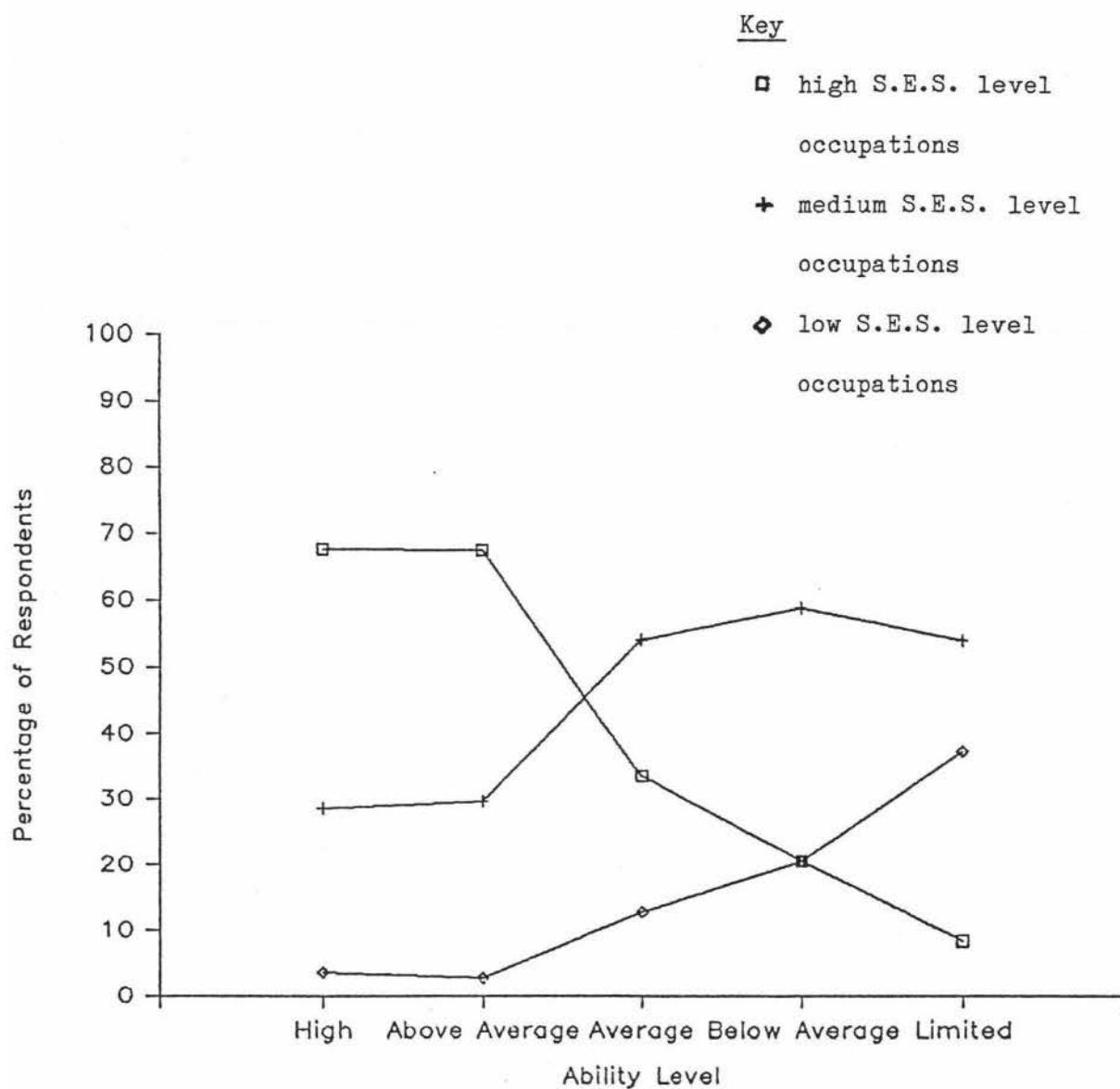


Figure 1: Percentage of respondents aged nine years and over selecting each status level of occupation (high, medium, low) at each ability level in the free choice condition

It can be seen in Figure One that there tends to be a direct

relationship between ability and socio-economic level of occupational preferences: the higher the ability level, the higher the level of preference and vice-versa.

For high ability respondents (exceptional and above average) mostly high status level occupations were preferred (61.8% and 67.6% respectively), with considerably fewer respondents preferring medium (28.6%, 29.7% respectively) or low status level preferences (3.6% and 2.7% respectively). Both average and below average respondents preferred medium status level preferences (54.2% and 59% respectively) to high (33.6% and 22.5%) or low (12.8% and 20.5% respectively) status level preferences. Limited ability respondents mostly preferred medium status level occupations (54.2%) followed by low status level occupations (37.5%), with very few preferring high status level occupations (8.4%). These results support the hypothesis (second part of Hypothesis Three) that occupational preferences would be influenced by ability for respondents aged over nine years.

Contingency analyses were also used to investigate the influence of gender on levels of occupational preference, since Gottfredson (1981) suggests that boys' occupational preferences increase in status level with age, while girls' preferences decrease in status level with increasing age. Results of the analyses investigating the effect of gender for level of free choice preferences were not significant for respondents aged under nine ( $\chi^2(2) = 2.9, p > .05$ ) or over nine ( $\chi^2(2) = 5, p > .05$ ), although the results for the older age group approached significance ( $p = .08$ ). Analyses for forced choice preferences were similarly not significant at either age level. Hence, the hypothesis

(Hypothesis Four) that preference levels would be higher for younger females than for younger males was not supported.

### OCCUPATIONAL STEREOTYPES

#### Status Level Occupational Stereotypes

The importance rankings assigned by respondents at each school class level are included in Appendix 16. As each of the 15 occupations for the card sort had been selected to represent a particular socio-economic level (Elley-Irving scale) and sex-type (based on Census data), comparisons between respondents' perceived importance of the occupations and the actual socio-economic status could be made separately within the male sex-typed, female sex-typed and androgynous occupations, in addition to using all 15 occupations. Initially, data for New Entrants and Standard One pupils (average age 6.5) were analysed separately to those of Form I to Form IV respondents (average age 13.2), to be consistent with the hypothesis (Hypothesis Five) that the ability to accurately rank occupations for importance (status level) would only occur at the older age level.

In order to make comparisons between perceived and actual status for the two age groups, the number of respondents allocating an importance rating to each of the occupations was weighted by the actual status level so that an "average" rating for each occupation could be derived. These data were used to rank the occupations in terms of perceived importance, as shown in Table 19. Overall rankings for the 15

occupations were obtained, in addition to importance rankings for the female, male and androgynous typed occupations (see Table 20).

Results of the rank order correlations between actual and perceived status level were not significant for either younger respondents ( $r(15) = .442$ ) or older respondents, although results for the latter approached significance ( $r(15) = .52$ ). As rank order correlations are sensitive to outliers, analyses were repeated excluding the librarian occupation, since this occupation was severely misperceived by both the New Entrant/Standard One group and the Form I/IV respondents (see Table 19). The practice of excluding outliers that can distort data is described by Tukey (1982). Analyses with the librarian occupation excluded revealed significant rank order correlations for both the younger group ( $r(14) = .57$ ,  $p < .05$ ) and the older group ( $r(14) = .69$ ,  $p > .01$ ). This result was contrary to the hypothesis (Hypothesis Five) that only respondents age nine years and over would accurately rank occupations according to status level.

TABLE 19

Actual Socio-Economic Status Rankings of Occupations versus Perceived Status Rankings of Occupations among Younger School Pupils (New Entrants/Standard One) and Older School Pupils (Intermediate/Form Four)

Occupation	Actual Status	Perceived Status: Younger Pupils	Perceived Status: Older Pupils
Librarian	2	11	12
Doctor	2	3	1
Secondary Teacher	2	5	3
Nurse	5	2	4
Police Officer	5	1	2
Sports Coach	5	13	13
Typist	8	7	7
Mechanic	8	6	5
Mail Sorter	8	8.5	9
Hairdresser	11	8.5	11
Truck Driver	11	10	6
Potter	11	15	14
Cleaner	14	14	10
Jockey	14	12	15
Factory Worker	14	4	8

New Entrant/Standard 1:  $\Sigma d^2 = 312.5$ ,  $r = .442$

Intermediate/Form 4:  $\Sigma d^2 = 272$ ,  $r = .520$

Table 20 provides the separate status rankings for the male, female and androgynous typed occupations. It is interesting to note that the male sex-typed occupations were more accurately rated for importance than female or androgynous occupations.

TABLE 20

Perceived Status Level of Female, Male and Androgynous Occupations among Younger School Pupils (New Entrant/Standard 1) and Older School Pupils (Intermediate/Form 4)

Actual S.E.S.	Perceived Status					
	Female		Male		Androgynous	
	younger	older	younger	older	younger	older
1	4	5	2	1	2	1
2	1	1	1	2	4	4
3	2	2	3	3	3	3
4	3	4	4	4	5	5
5	5	3	5	5	1	2

Occupations that ranked low in importance (4,5) by most pupils at all

school class levels included librarian, sports coach, potter and jockey (see Appendix 16). The highest ranking occupations among Form I to Form IV pupils were doctor, secondary school teacher and police officer. The occupation of nurse was rated second most important by the majority of pupils at the older age, with most pupils assigning truck driver second or third most important ranking. The second to third most importance rankings were also assigned to the mechanic, mail sorter and factory worker occupations.

In contrast to the consistency of responding for Intermediate (Form I & II) and Form Four pupils, differences occurred within the New Entrant/Standard One group. Generally, the New Entrants' ratings were more random, whereas the ratings of the Standard One pupils were moving toward the consistency demonstrated by older pupils. Major differences between the two lower school class levels occurred for occupations rated as most important and for occupations rated as second to third most important. Standard One ratings for these status levels mirrored those of Form I to IV pupils, but New Entrants' ratings were more variable and set at higher or lower levels than those allocated by the remaining school classes.

#### Sex-Typed Occupational Stereotypes

Results showing the number of respondents rating the 15 card sort occupations as better suited to women (female sex-type), men (male sex-type) or both men and women (androgynous) at each school class level are included in Appendix 17.

As the 15 occupations represented female, male and androgynous sex-typed occupations, in addition to status level of occupations, comparisons could be made between perceived sex-type and actual sex-type. For this comparative analysis the 15 occupations were ranked in terms of the percentage of women actually employed in the occupation, based on 1981 Census data. In addition, the same occupations were ranked according to the percentage of respondents who allocated each occupation to the female and male categories, which were then weighted by +90 and -90 respectively. The androgynous category was weighted zero. In this manner it was possible to rank the 15 occupations according to the degree to which they were perceived as suitable for women. A similar analysis using male occupations would have provided a mirror image.

Consistent with the hypothesis (Hypothesis Two) that the sex-typing of occupations would reflect actual occupational sex-stereotypes for respondents older than six, data were analysed separately for New Entrants (average age 5.3) on the one hand and Standard One to Form Four (average age 11.9) on the other. Comparisons of the ranks for perceived and actual sex-type of occupations are shown in Table 21.

At both school levels, the rank order correlations were strong ( New Entrants, .83; Standard One to Form Four, .94), indicating the accuracy of perceived sex-types. The finding that New Entrants accurately sex-typed occupations did not support the first part of Hypothesis Two, that occupations would be accurately sex-typed only by respondents older than six.



TABLE 21

Actual Female Participation in Occupations versus Perceived Female  
Participation in Occupations among Junior School Pupils (New Entrant)  
and Older School Pupils (Standard One to Form Four)

Occupations	Actual Rate:		Perceived Rate:		Perceived Rate:	
	1981 Census		New Entrants		Std 1- Form 4	
	%	Rank	%	Rank	%	Rank
Librarian	84	4	16.87	4	45.58	3
Nurse	97.3	2	43.8	2	61.08	1
Typist	99.7	1	8.9	5	58.75	2
Hairdresser	86.8	3	37.8	1	34.71	5
Cleaner	67.4	5	5.63	6	35.82	4
Doctor	12.3	12	-28.12	11	-27.50	12
Police Officer	5.5	13	-45.00	12	-23.21	10
Mechanic	0.2	15	-55.0	13	-61.33	15
Truck Driver	0.8	14	-60.70	14	-57.60	14
Jockey	24.0	11	-24.75	10	-29.24	13
Secondary Teacher	43.3	9	32.40	3	6.3	6
Sports Coach	40.1	10	-67.5	15	-23.79	11
Mail Sorter	47.4	7	5.5	7	-18.60	8
Potter	47.6	6	- 2.325	8	8.89	7
Factory Worker	46.8	8	-18.00	9	-20.05	9

New Entrants: Actual-Perceived  $\Sigma d^2 = 94$ ,  $r = .83$

Standard 1 to Form 4: Actual-Perceived  $\Sigma d^2 = 34$ ,  $r = .94$

Despite the overall accuracy indicated by the rank order correlations, there were age differences regarding which particular sex-typed groups (female, male, androgynous) were more accurately perceived. These differences are highlighted in the results presented in Appendix 17. Generally, the Standard One pupils sex-typed occupations similarly to New Entrants and both of these groups accurately sex-typed the female and male sex-typed occupations, but inaccurately assigned sex-types to the androgynous occupations. On the other hand, the senior school pupils viewed more jobs as androgynous, both accurately and inaccurately. These results suggest support for the second part of Hypothesis Two that sex-typing of occupations would occur at all ages, becoming weaker with increasing age.

Examining the sex-typing of individual occupations (see Appendix 17), it can be seen that a number of occupations were considered to be more suited to women (female sex-type). The occupations nurse and typist were clearly perceived as female occupations across all school class levels. Among New Entrants, Intermediate and Form Four pupils, the job of librarian was also considered to be a female job (46.3%, 61.1% and 60.2% respectively), but Standard One pupils, particularly the females, viewed it as slightly more androgynous (44.2%). Clear school class differences emerged for the occupations hairdresser and cleaner. Intermediate and Form Four students mainly considered these two jobs to be androgynous (64.8% and 69% respectively), whereas New Entrants and Standard One pupils thought they were better suited to women (48.6% and 68.8% respectively).

Only two jobs were consistently sex-typed male by the majority (i.e

more than 50%) of pupils at all four school levels and these were the occupations truck driver and motor mechanic. The majority of children in the two junior classes also viewed the jobs doctor, police officer and jockey as more appropriate for males. In contrast, the two senior class levels viewed these occupations as androgynous (more than 70% of pupils at each class level for all occupations except jockey, which 63.9% of Intermediate regarded as androgynous).

The tendency for Intermediate and Form Four pupils to view occupations as androgynous, rather than sex-typed was apparent in their highly agreed upon androgynous classification for the occupations of secondary school teacher (96% and 99% respectively), sports coach (75% and 85.3% respectively), mail sorter (76.9% and 89.9% respectively), potter (80.6% and 80.5% respectively) and factory worker (68.5% and 76% respectively). The decisions of the New Entrant and Standard One pupils regarding these occupations were less consistent. Sports coach and factory worker were perceived as male sex-typed occupations by both of these junior school classes, but New Entrants viewed the jobs of secondary school teacher and mail sorter as female, whereas Standard One respondents considered these occupations to be androgynous (62.3% and 44% respectively). For the potter occupation, most New Entrants thought it was a male occupation (41.3%), while Standard One children mainly decided it was a female occupation (45.5%).

The sex-typing of occupations was further analysed for the effect of gender as Hypothesis Two predicted that males and females would similarly sex-type occupations. The numbers of males and females allocating each of the 15 occupations to each of the three sex-types

(female, male androgynous) were calculated. Table 22 shows the percentage and numbers of males and females perceiving each sex-type across the 15 occupations. While similar percentages of males and females perceived the occupations as sex-typed female, more females viewed jobs as androgynous (53.2% compared with 43.1% for males), while more males perceived the occupations as sex-typed male (32.8% compared with 21.6% for females).

TABLE 22

Sex-Type (female, male, androgynous) of Occupations as Perceived by Females and Males, Collapsed Across All Age Groups

Gender	Sex-Type of Occupations						
	Female		Male		Androgynous		Total
	N	%	N	%	N	%	
females	50	25	43	21.6	106	53.2	199
males	47	24.1	64	32.8	84	43.1	195

chi (2) = 6.64,  $p < .05$

These results were significant ( $\chi^2(2) = 6.64, p < .05$ ). Hence the implication in Hypothesis Two that there would be no sex-differences in the sex-typing of occupations was not supported.

#### Actual versus perceived status and sex-type of each occupation

Gottfredson (1981) refers to the commonly held sex-type and status dimensions of occupations as a cognitive map. Collapsing the sex-type and importance (status) rankings across gender and age, a cognitive map for the 15 forced choice card sort occupations can be derived. This map is presented in Figure Two, which compares perceived (cognitive map) and actual status and sex-type for each of the 15 occupations.

Comparisons of actual and perceived sex-type and status dimensions are shown by the use of italic letters (actual) and block letters (perceived). There are some notable differences. In some cases the perceived sex-type matches the actual sex-type, but not the perceived status (e.g. truck driver, mechanic, secondary school teacher, sports coach, mail sorter, potter, factory worker, librarian, cleaner, nurse, typist), while in other instances the perceived importance matches the actual status level, but not the sex-type (e.g. doctor, hairdresser, jockey). Only in one occupation did a perceived/actual mismatch of both sex-type and status level occur and that was the occupation police officer, which was seen as androgynous and high in status.

Six of the 15 occupations were perceived the same as actual sex-type and status level and these were the occupations of secondary school teacher, nurse, typist, cleaner, potter and mail sorter.

STATUS LEVEL	1	doctor	DOCTOR	librarian
			SECONDARY TEACHER	
			secondary teacher	
			POLICE OFFICER	
	2	police officer	sports coach	NURSE
		TRUCK DRIVER	FACTORY WORKER	nurse
		MECHANIC		
	3	mechanic	MAIL SORTER	TYPIST
			mail sorter	typist
	4	truck driver	POTTER	
			potter	hairstresser
			HAIRDRESSER	
	5	jockey	JOCKEY	LIBRARIAN
			SPORTS COACH	CLEANER
			factory worker	cleaner
		MALE SEX-TYPE	ANDROGYNOUS	FEMALE SEX-TYPE

Figure 2: Perceived versus actual sex-type and status level of 15 occupations, collapsed across all age groups

Although greater accuracy occurred for sex-type perceptions of the occupations, results clearly indicated that sex-type and status dimensions of occupations are key components of childrens' occupational perceptions.

#### SELF-PERCEIVED SOCIAL CLASS

Most children responded to the question concerning "social class" position, with 65.7% selecting a class option rather than a "don't know" or "unsure" choice. Of those selecting a "class" option, most perceived themselves as "middle class" (38.2%) or "working class" (20.4%). Only a small percentage of children (7.1%) perceived themselves as "upper middle class".

TABLE 23

Self-Perceived "Social Class" of Respondents OLDER THAN NINE at Each Level of Parental Socio-Economic Status (High, Medium, Low)

Parental Socio- Economic Level	Perceived "Social Class"						
	Upper-Middle		Middle		Working		Total
	N	%	N	%	N	%	N
high	9	25	21	58.3	6	16.7	36
medium	10	10.3	71	73.2	16	16.5	97
low	1	2.7	26	72.2	9	2.5	36

$$\text{chi } (4) = 9.93, p < .05$$

Self-estimates were compared with parental socio-economic status using contingency analyses. For the younger age group (under nine years) results were not significant ( $\chi^2(4) = 5.41, p > .05$ ), in contrast to the older age group (aged over nine) for whom results were significant ( $\chi^2(4) = 9.93, p < .05$ ). Results for the older age group are shown in Table 23.

As can be seen in Table 23 a higher percentage of respondents from high socio-economic backgrounds perceived self as "upper-middle class" (25%) than did those from middle socio-economic backgrounds (10.3%) and low socio-economic backgrounds (2.7%). However, most children from all three socio-economic backgrounds perceived themselves as "middle class", although a higher percentage of those from low socio-economic backgrounds perceived themselves as "working class" than the remaining respondents (25% compared with 16.7% for high socio-economic status and 16.5% for medium socio-economic status). Results supported the hypothesis (Hypothesis Six) that accuracy of self-perceived social class would be evident from the age of nine.



## CHAPTER FOUR

### DISCUSSION

The major aim of the present study was to investigate whether children's occupational preferences and occupational stereotypes would be influenced firstly (age six) by sex-typing and secondly (age over nine) by socio-economic status, as suggested in Gottfredson's (1981) theory. Overall, results did suggest such a developmental trend, but there were inconsistencies with the theory, particularly in relation to sex-typing of occupational preferences and occupational stereotypes. The following discussion examines the support for the hypotheses drawn from Gottfredson's theory concerning the influence of sex-typing and socio-economic status on children's occupational preferences and stereotypes. The limitations of present results are then considered and suggestions for future research outlined. An overview and critique of the theory in light of the present findings follows, and implications for careers awareness and education programmes are discussed.

### Influence of Sex-Typing

Several major trends were found for the influence of sex-typing on occupational preferences and occupational stereotypes. Firstly, sex-typing of occupational preferences occurred in all age groups from the age of five, as did accurate sex-typing of occupational stereotypes. These results were contrary to the hypotheses (first parts of hypothesis one and hypothesis two) that sex-typing would be

apparent only from the age of six. However, the early emergence of sex-typing of occupational preferences has been reported in a number of previous research studies (e.g. O'Keefe & Hyde, 1983; Riley, 1981; Tremaine & Schau, 1979), as has the early sex-typing of occupational stereotypes (e.g. Schlossberg & Goodman, 1972; Teglasi, 1981).

The very early appearance of sex-typing of occupational preferences and occupational stereotypes might be expected on the basis that children are exposed from infancy to sex-typed occupational stereotypes through family role models and media models. Although not empirically tested, the present study did find that most children named role models for their occupational preferences. The main models were people known to the children (friends of the family and fathers) and television models. The influence of the latter is particularly sex-typed, as found by the De Mello et al study (1981). Interestingly, popular occupations in the forced choice card sort were generally occupations with a high, traditionally sex-typed, media profile. A favourite for boys of all ages, for example, was the occupation truck driver and for girls nurse and hairdresser were highly preferred. On the other hand, androgynous occupations were generally low in popularity and this possibly reflects the low media visibility of occupations such as potter, sports coach, mail sorter and factory worker.

The reading material to which children are exposed from a young age is another possible source of influence on early sex-typing. Studies by Barclay (1978) and Knell and Winer (1979) have demonstrated the influence of reading material on young children's occupational preferences and occupational stereotypes. Girls, in particular, appear

to be most influenced by role models presented in children's literature (Knell & Winer). It seems important, therefore, that the selection of reading material by schools be non sex-typed, although the availability of such material may be in short supply.

The second major trend found in the present study was that of different patterns of development for sex-typing of occupational preferences on the one hand and sex-typing of occupational stereotypes on the other. Occupational preferences remained sex-typed through to adolescence, as found by Kenkel and Gage (1983), whereas occupational stereotypes tended to weaken with increasing age. Among five to eight year olds, all actual male and female sex-type occupations were accurately sex-typed (accuracy for androgynous occupations was slightly lower). At the adolescent age levels, however, two of the actual female sex-type and three of the actual male sex-type occupations were viewed as androgynous, and all of the androgynous occupations were seen as such. The tendency toward decreased sex-typing of occupational stereotypes with increasing age has similarly been found by Garrett et al (1977), Tuck et al (1985) and Shephard and Hess (1975). Although the decrease in stereotyping at the older ages supported the second part of hypothesis two, such an outcome is not predicted by Gottfredson's (1981) theory, which presupposes that the influence of sex-typing is fixed once it has emerged.

Despite the overall trend toward sex-typing of occupational stereotypes, the finding that the such sex-typing tended to decrease with age is encouraging. It appears that older pupils may have become sensitive to changes actually occurring in the occupational structure.

Since the 1981 Census, on which the sex-typing of the card sort occupations was based, increasing numbers of women have reportedly been entering non-traditional fields such as law and medicine. It seems likely that the perceptions of adolescents in the present study may be realised in the forthcoming Census. Although occupational stereotypes were less sex-typed at the older ages, occupational preferences continued to reflect traditional sex role stereotypes. Apparently, sex-typing of appropriate sex role behaviour concerning others is more easily changed than sex-typed perceptions of what is appropriate for oneself.

Results further suggested that girls were more flexible than boys regarding sex-typing of both occupational preferences and occupational stereotypes. This third major trend in the present findings was contrary to Gottfredson's (1981) view that males and females engage in similar sex-typing behaviour. However, the more rigid sex-typing of occupational preferences among boys supported the second part of hypothesis one, drawn from the research literature. Girls of all ages were considerably more likely than boys to prefer cross-sex occupations. In the occupational card sort (forced choice preferences), for example, the occupation jockey was one of the more popular choices among five and seven year old girls, while the occupations police officer and doctor were among the most preferred occupations for older girls. Girls were also more likely to choose androgynous occupations in the free choice condition, and this was reflected in the finding that gender did not significantly differentiate between female sex-type and androgynous occupations. In the forced choice measure of occupational preferences, however, boys

were as likely as girls to prefer androgynous occupations. This result was possibly due to the popularity of the occupations sports coach among Intermediate boys. Sex differences were also found for the sex-typing of occupational stereotypes, contrary to the hypothesis (hypothesis two) that males and females would similarly sex-type occupations. Girls were more likely to perceive occupations as androgynous rather than sex-typed male, while boys tended to perceive more occupations as sex-typed male than as androgynous.

The apparent ease with which many girls were able to break away from traditional sex-role stereotypes in relation to occupational preferences and occupational stereotypes has been widely reported in the vocational research literature, both in New Zealand studies (e.g. Tuck et al, 1985) and overseas research (e.g. Clemson, 1981; Frost & Diamond, 1979; Peters, Drury, Smith, Webster & Williams, 1985). Possibly, there is less social disapproval for girls who do not conform with traditional stereotypes, as suggested by Feinman (1981). Another possibility is that girls view male occupations as more prestigious and desirable, an explanation supported by Teglasi's (1981) finding that male toys and occupations were deemed "best" by both boys and girls. Kohlberg (1966) has also suggested that girls perceive the male stereotype as having greater status and power. Given the lower prestige of female sex-type occupations (Beyard-Tyler & Haring, 1984), the drift of girls' preferences toward male sex-type occupations such as doctor and police officer is, perhaps, not surprising. The tendency of girls, but not boys, to prefer cross-sex occupations and to perceive male sex-typed occupations as androgynous further suggests that girls may have been influenced by the efforts to encourage women and girls

into non-traditional occupations (e.g. the "Girls Can Do Anything" campaign).

The finding that girls selected from female sex-type, male sex-type and androgynous occupations contradicts previous research ( e.g. Looft, 1971; Siegel, 1973) that has found the range of girls' occupational preferences to be more restricted by sex-typing than for boys. In the present study, the most preferred occupations for boys in the occupational card sort were all sex-typed male, with the exception of one androgynous occupation. Hence, boys' occupational preferences were primarily drawn from a range of six occupations, less than half of the total occupations available for selection. In contrast, girls' occupational preferences were wider in range, due mostly to preferences for cross-sex (male sex-typed) occupations. It appears that considerable changes may have occurred in the sex-role attitudes of girls, but not boys, since the research undertaken in the early 1970's.

The robustness of the present findings in relation to sex-typing is enhanced by the use of both free choice and forced choice measures. Generally results obtained for free choice occupational preferences were similar to those selected in the occupational card sort (forced choice). There were, however, areas of slight differences. First, there was variation in the variables entered for the forced order stepwise analyses. While only gender was entered in the free choice condition, additional variables were entered in the forced choice condition (age with gender for younger respondents and parental socio-economic status with gender for older respondents). The inclusion of age with gender in the younger age group possibly

indicates that the children who had been at school slightly longer had a better understanding of the card sort. At the older age level, the inclusion of parental socio-economic status could be due to a higher degree of broad mindedness among those from higher socio-economic backgrounds. Previous research (e.g. Albrecht, 1981; Karman, 1973) has suggested that sex-typing decreases with higher education (one indicator of socio-economic status) and higher socio-economic status.

A second area of difference between the free and forced choice measures was the lower canonical correlations for the younger age group for forced choice preferences compared with free choice preferences. Again, this possibly reflects some difficulty with the card sort. The fact that children had to select their preferences from all 15 occupations could have been the source of such difficulty. The remaining card sort tasks did not require selection from the whole set of occupations, but from smaller or single components of it. It is clearly important to ensure that all measures used with young children are adapted to their level of cognitive ability.

#### Influence of Socio-economic Status

The developmental progressions outlined in Gottfredson's (1981) theory were supported when the influence of socio-economic background was examined. At the younger age level (under nine), socio-economic background did not, overall, influence the status level of occupational preferences. One atypical finding in which parental socio-economic status did appear to have an effect was probably due to the degrees of

freedom. In contrast, at the older age level the effect for parental socio-economic status was significant. For this age group, the higher the socio-economic background, the higher the status level of occupational preferences. Results therefore supported the hypothesis (Hypothesis Three) that the status level of occupational preferences would closely relate to parental socio-economic status for respondents older than nine. Similar results have been reported by Danziger (1983), Prenter and Stewart (1976) and Vellekoop-Baldock (1971).

At both ages, the occupational preferences of boys and girls were of a similar status level, despite Gottfredson's (1981) view that the occupational preferences of girls under nine years would be higher than for boys of the same age (Hypothesis Four). This result could reflect the growing tendency for girls of all ages to make choices from male sex-typed, androgynous and female sex-typed occupations, embracing a wider status range than female sex-typed occupations alone. Previous research has similarly found that boys and girls have similar status level occupational preferences (e.g. Danziger, 1983; Stark, 1980), but the present study is one of the few to have replicated these findings for adolescents with children as young as five.

Given the popular view of New Zealand as an egalitarian "classless" society, it is interesting that older boys and girls generally did not aspire to occupations beyond the socio-economic level of their parents. This is contrary to what would be expected in an upwardly mobile society. The effects of socio-economic background, however, appeared to be greater for respondents from high or medium level socio-economic backgrounds. Those from lower socio-economic backgrounds were more



likely to prefer middle level occupations (52.9%) over low level occupations(27.4%). In addition, respondents from low socio-economic backgrounds generally perceived themselves as "middle class", as demonstrated by the results pertaining to self-perceived "social class". Hence, perceived social position may exert a greater influence than actual socio-economic background for this group.

In addition to the influence of social background, present results indicated that ability also had a strong impact on the status level of occupational preferences for older respondents, consistent with the second part of Hypothesis Three. With increasing ability, the status levels of occupational preference increased also. The one exception to this overall trend was the limited ability group, who generally preferred medium level occupations, rather than low level occupations. This result could indicate an overestimation of ability at this level or, alternatively, it reflects a general disenchantment with low level occupations. Support for the latter is limited, however, since among the forced choice occupations low level occupations were more popular than high level jobs.

Although ability was not a significant influence on the status level of occupational preferences at the younger age level, it is important to bear in mind that this result could have been influenced by the unreliability of teacher rated assessments of ability. The unreliability of the ability measure precluded correcting for attenuation of the correlation between socio-economic status (measured by the Elley-Irving scale) and the ability variable, as recommended by Jackson (1981). A means of avoiding the problem of an unreliable

ability measure would have been to use self-estimated ability. The advantage of this type of measure is that it taps into self-cognitions, demonstrated to be an important influence on occupational choice (Farmer, 1985). In the past, however, self-estimates of ability have been used primarily with older subjects and suitability of use with young subjects was questionable.

An important issue arising from the present investigation of the influence of ability and socio-economic background on occupational preferences is the question of the relative contribution of each. Some writers argue, as Gottfredson (1981) does, that social background has the stronger influence, with ability raising the level of occupational preferences only when the effect of social background is controlled for (e.g. Danziger, 1983; Vellekoop-Baldock, 1971). Other writers argue that the influence of social background is reduced by mediating environmental factors, ability or self-cognitions (e.g. Ashton & Field, 1976; Farmer, 1985; Sewell & Hauser, 1975). Present results tend to lend greater support to a model in which the influence of socio-economic background is significant, but its influence is indirect through other factors, such as ability. Hence, it seems likely that ability has a direct influence on the status level of occupational preferences, while socio-economic background has an indirect effect through its influence on ability. Indeed, Chapman and St George (1984) found a high relationship between ability, as measured by the P.A.T. tests, and socio-economic status (measured by the Elley-Irving scale).

The influence of socio-economic background on the occupational

preferences of older pupils, but not younger pupils, perhaps parallels a greater awareness of actual social position at the older age level. Older pupils were significantly more accurate in their evaluation of "social class" position than were younger pupils (under nine years), supporting Hypothesis Six. This finding was consistent with Gottfredson's (1981) view that orientation to social valuation does not occur until the ages of nine to thirteen. The non-significant results for the younger age group reflect the observed tendency of young people in this group to respond randomly or to respond within their own definitions of "social class". For example, many five year olds when asked to which "social class" they belonged, replied that they were "working class". In response to being asked why they considered themselves to belong to this class the most frequent explanation was that they 'worked very hard'. At the seven year old level, the most popular option was "middle class", with the major explanation being that they were in the middle of the school, indicating a school class concept of "class". Hence, the inaccuracy of the younger pupils possibly reflects more of a lack of comprehension of the term "social class" than a lack of awareness of social differences.

The difficulties the younger children had in comprehending the meaning of "social class" highlights the importance of constructing measurement items that are appropriate to the cognitive level of young subjects. Given alternative, more concrete labels relevant to social position (e.g. lot of money, not much money) younger children may have demonstrated greater social awareness. Undertaking research with younger children may therefore necessitate the creative development of concrete means of assessing abstract concepts.

In contrast, pupils in the older age group indicated a clearer understanding of the term "social class". At Intermediate level, for example, one boy commented that he personally was "middle class", but his parents lived in a "posh" house so he belonged to the "upper-middle class". At Form Four level, students were concerned with what the salary cut-off point would be for each "social class" as illustrated in one girl's question as to whether an annual income of \$20 000 would be "middle class". Despite the relative accuracy in the older age group, there appeared to be a trend toward overselection of the "middle class" locale among those from low and high socio-economic backgrounds, similar to that found by Simmons and Rosenberg (1971) and Connell (1970). This could be interpreted as inaccuracy or, alternatively, as a denial of "class consciousness", as suggested by Connell.

Older pupils were also accurate in their evaluation of the status (perceived importance) level of the forced choice occupations, once the extreme rating for the librarian occupation was removed. Contrary to Hypothesis Five, however, younger pupils (under nine years) were also accurate in their judgements of the relative importance of each occupation. Interestingly, male sex-typed occupations were more accurately rated for status level than the female sex-typed occupations at both age levels. This result possibly reflects a greater association of status with the male stereotype, as indicated in Kohlberg's (1966) theory. A further possible reason for the greater accuracy of perception for the male sex-typed occupations is the prominence of male sex-typed occupations in the media. The research by De Mello et al (1981) clearly shows that women are shown in far fewer occupational roles than men and those occupations in which women are

shown tend to be relatively low in status. The occupational images of men, in contrast, are frequent and they include a wide range of status levels.

Although the younger age group were relatively accurate in their perceptions of occupational status, there did, appear to be a developmental trend of increasing accuracy with age. Even within the younger age group the Standard One pupils (aged seven to eight) were more accurate than the New Entrants. In addition, the Form I to IV students seemed to have a more accurate perception of occupational status than younger pupils, as demonstrated by the higher percentage of older pupils accurately ranking the status level of the occupations. Previous research has similarly found that, although accurate from the age of seven to eight, perceived occupational status increased in accuracy with age (e.g. Lauer, 1974; Simmons & Rosenberg, 1971). The finding that younger children were relatively accurate in their estimation of occupational status, yet inaccurate in determining their own social position is possibly explained by the "concreteness" of occupations, in contrast to the abstractness of "social class". Again, the important role of cognitive development in relation to the types of questions researchers put to children is highlighted by this outcome.

Despite the overall accuracy, a few occupations were overrated or underrated in perceived importance (status). The high socio-economic level occupation of librarian was rated very low in importance at all ages, possibly reflecting a misperception of what the job involves, despite the fact that subjects were provided with a job description. Alternatively, the concept of the librarian as a person responsible for

the running of a library may have been too abstract for pupils to grasp. This explanation is supported by the relative accuracy for the remaining occupations for which job descriptions were considerably more "concrete".

In contrast to the downgrading of the librarian's importance, the low status level job of truck driver was perceived as more important than its actual status level, particularly among older pupils. The higher rating could be a function of the popularity of the job among boys of all ages and its relatively high media profile, in both television advertisements and programmes. On the other hand, the job could have been deemed important on the basis of its contribution to society. For example, one Fourth Form boy explained that truck driving was an important job because truck drivers enabled many others to carry out their work (e.g. shopkeepers, mechanics and various others in the delivery chain). The job factory worker was similarly overrated in importance, at all age levels, although it was not a popular occupation. Most pupils at all ages considered the job of police officer to be a highly important job. Again, this job was not particularly popular, but it is a job that has a prominent media profile. When asked why they thought the job was so important, many children referred to the need for protection ("so we don't get our things stolen").

The unexpected ratings for the factory worker, police officer, truck driver and librarian occupations highlight the need for careful selection of occupations to avoid the confounding effects of popularity and visibility. Results for perceived importance may also have been

influenced by the grouping of the occupations into of three sets of five (one occupation at each status level). Although this was necessary due to the inability of younger children to rank order 15 occupations, ratings could possibly be a function of the other occupations in the particular group with which they were contrasted. Another factor that needs to be considered in relation to the discussion of relative accuracy of status perceptions is the generalisation from "importance" to "status". The choice of the term "importance" was preferred because it was more familiar to younger children, but the two terms are not necessarily equivalent.

Although not empirically tested, it was observed that explanations for the importance of different occupations demonstrated a developmental trend. Younger children either could not give a reason ("because it is") or they gave reasons relating to elements of risk and danger (e.g. jockey.. "because you might get killed"). At the next level (Standard One, seven to eight year olds), the idea of social contribution became central to many explanations (e.g nurse..."to help us keep well"). The social worthiness of occupations continued to permeate explanations at the two older levels also (Intermediate and Form Four), but there was increasing awareness of the relationship between occupational status and level of training and education required to enter occupations. These developmental trends are similar to those found by Goldstein and Oldham (1979) and reflect the influence of cognitive development on children's perceptions.

#### Limitations of the Present Study and Suggestions for Future Research

Although the present study generally confirms the developmental



progressions outlined in Gottfredson's (1981) theory, any conclusions are limited by the use of a cross-sectional design. Clarification of developmental progressions requires the use of a longitudinal design, such as would be provided by a follow-up of the present study at one and two year intervals. In terms of Gottfredson's (1981) theory, a longitudinal design would enable the precise transition points from one stage to the next to be pinpointed. The present study did not reveal the transition points either for the influence of sex-typing or the influence of socio-economic status on occupational preferences. In both instances the participants were older than the age at which each respective influence might emerge. To detect the emergence of sex-typing as an influence, children aged younger than five will need to be included in any future research. Any further research should also examine more carefully the development of occupational stereotypes, focusing in particular on whether the sex-typing and status ascription of occupational stereotypes precedes the incorporation of these same elements into occupational preferences. Such development may be part of a pattern in which stereotypes (perceptions of others) form first and then become an influence on perceptions of oneself. This aspect of development merits further examination.

One aspect of development that seems to have particular importance for the researcher working with children is cognitive development. The present study has highlighted the key role of cognitive ability, particularly in relation to the understanding of social concepts. At age five, the abstract term "social class" had little meaning, but the



status of occupations, which are relatively "concrete", was apparently understood. Improved wording of the "social class" question, using concrete referents such as money or clothing might have yielded different results for the younger age group. It would be interesting to compare the results of research using tangible descriptors of "social class" with present findings. Clearly, researchers who work with children need to be acutely aware of cognitive development, in order to devise measuring instruments that are appropriate not only in wording but also in structure. For example, asking the five year olds to choose the jobs they liked most and least from 15 occupations was possibly too difficult, given the limited ability of young children to carry out complex sorting tasks. A possible alternative in any future research would be to include the initial sort into most and least liked piles, followed by further sorting within each pile. Such a procedure would considerably decrease the number of occupations from which choices had to be made.

In addition to careful wording and structuring of measurement tools used in investigations of vocational development in childhood, care also needs to be taken with the selection of occupations when using a forced choice methodology. The present study has highlighted the possible confounding effects of popularity and media presentation related to occupations. Present results suggested the possibility that the truck driver occupation, for example, was rated higher in status than its actual status level because of its relative popularity. In addition, the low popularity of androgynous occupations could have been due to their unfamiliarity and low media profile.

In summary, further investigation of the developmental progressions described in Gottfredson's theory would be enhanced by a longitudinal design to examine more closely the trends detected from the more limited cross-sectional design. The present study has highlighted the need for any future research to carefully consider the cognitive level of the children involved in order to construct appropriate measurement tools. The selection of occupations when using forced choice methods should take into account not only the ability of children to comprehend what the occupation is, but also the possible confounding effects of popularity and media presentation.

#### Critique and Overview of Gottfredson's Theory in Light of the Present Study

The results of the present study will now be considered in light of Gottfredson's (1981) theory of circumscription. Overall, results do show evidence of an on-going narrowing down process which defines the range of occupations perceived by young persons as acceptable. Further, the order in which the narrowing down occurred in the present study is consistent with Gottfredson's theory. Firstly, occupational preferences were selected on the basis of the appropriateness for one's own gender. Secondly, preferences were influenced by appropriateness for one's socio-economic background. Hence, results do suggest a developmental progression that is consistent with Gottfredson's theory.

There is also support for the influence of sex-typing and status perceptions on occupational stereotypes. Children in the present study

clearly perceived status and sex-type dimensions for each of the occupations in the forced choice card sort measure. Furthermore, these occupational stereotypes closely mirrored the actual sex-type and status ratings, as found in the occupational structure. Gottfredson (1981) refers to the commonly held sex-type and status dimensions of occupations as a cognitive map. Such a map has already been shown to exist among a New Zealand sample of male engineering students (Jackson, 1985) and present results suggest that children might develop maps in a similar manner to adults.

There are, however, several aspects of Gottfredson's (1981) theory that were not supported by the present findings. One of the major departures was the finding that even the youngest children held occupational preferences that were clearly sex-typed, an outcome predicted to occur somewhat later in Gottfredson's theory (ages six to eight). It could be argued that the present findings reflect awareness of sex-differences not sex-roles, as stated in Gottfredson's theory. However, such an argument would be primarily semantic on a number of grounds. First, that fact that almost all five year old children named occupations as preferences, not fantasy choices, indicates a role orientation. Logically, if these occupations are sex-typed, then this must represent a sex-role orientation. Second, despite Gottfredson's (1981) view, much of the developmental literature strongly suggests that sex-typing and sex-role stereotypes develop before the age of five and that children are fully aware of the sex-role division of labour within the home during the pre-school years (e.g. Teglasi, 1981). Third, the sex-typing of occupational stereotypes was also present in five year olds, reinforcing the idea that children at this age do in

fact hold sex-role stereotypes.

Another finding that was incompatible with the theory, was that the sex-typing of occupational stereotypes tended to decrease with age. According to Gottfredson's (1981) theory, sex-typed occupational stereotypes are held from the age of six and maintained thereafter. The developmental theory of Kohlberg (1966), however, suggests that sex-typing decreases as children move into adolescence. By way of explanation, Kohlberg reasons that the decrease in sex-typing heralds an orientation to interests rather than sex-roles. Perhaps somewhat paradoxically, this view is consistent with the development Gottfredson describes in Stage Four (Orientation to Internal and Unique Self), ages 14 and over.

Also incompatible with Gottfredson's (1981) theory was the finding of sex differences, both in relation to the sex-typing of occupational preferences and occupational stereotypes. Females, at all ages were significantly more likely to cross the sex-type barrier, selecting more cross-sex-typed and androgynous occupations for their own preferences and tending to view more jobs as androgynous than their male counterparts. A major shortcoming in Gottfredson's theory is its failure to explain such an occurrence, despite clear indications in the developmental literature (e.g. Kohlberg, 1966) that females exert greater role flexibility than males from a very young age.

Although the age developments were more consistent for the influence of socio-economic background on occupational preferences than for that of sex-role socialisation, there were a few inconsistencies with

Gottfredson's (1981) theory. At the younger age (five to eight years), socio-economic background and ability did not correspond with level of occupational preference, as predicted by the theory, but children at this age were relatively accurate in ranking occupations according to importance (status level of occupational stereotypes). Such an ability demonstrates more than an awareness, since it is an operationalisation of a stratification (i.e. social differentiation) concept. Hence, it does not suffice to argue, as Gottfredson does, that the result merely reflects pre-stage awareness. The finding that the same younger group could not accurately state to which "social class" they belonged does not necessarily contradict the finding of accuracy for status rankings, since this could have reflected a misunderstanding of terms versus concepts, particularly since the abstractness of the term "social class" could have been beyond the cognitive level of the younger age group. The accuracy of the perceived status of the occupations is, furthermore, consistent with the view that occupational stereotypes are well developed in five year old children. It would appear, however, that the implementation of awareness of status differences into occupational stereotypes precedes that for occupational preferences. This finding is consistent with the developmental research suggesting that children have greater difficulty in assigning traits to self than to others (e.g. Davis, Williams & Best, 1982).

Although the findings of the present study generally support the circumscription of occupational preferences by gender and socio-economic background, it is questionable as to whether ultimate occupational choices are influenced only by these factors. Acceptance of such a deterministic view ignores the interaction of factors in the

person with factors in the environment. The likelihood that fixed status variables such as social status and gender can be mediated by other factors was suggested in the present study by the strong influence of ability on levels of occupational preferences. Many studies (e.g. Ashton & Field, 1976; Farmer, 1985; Sewell & Hauser, 1975) clearly suggest that the influence of both gender and social status can be mediated by a range of personal and environmental factors.

The issue of mediation effects is a critical one in relation to the restrictive influence of gender on occupational choices for women. Most girls in the present study did prefer occupations that were sex-typed female, a trend that continued from the age of five through to adolescence. The fact that such occupations are narrow in range has been well established in the research literature (e.g. London & Stumpf, 1982). The question of concern is whether these sex-typed preferences will ultimately become actual choices. Gottfredson's (1981) theory suggests that they will. There are, however, a number of research studies that reflect greater optimism. Farmer (1985) found that teacher and parent support were strong mediating factors in assisting young women to make non sex-typed occupational choices. The ability of significant role models to influence a move away from restrictive sex-typed choices has similarly been found by Houser and Garvey (1983).

The failure to account for mediating environmental and personal factors, renders Gottfredson's (1981) theory inadequate in explaining deviations from the pattern of circumscription. In the present study, a considerable number of girls (approaching 50%) had androgynous and

cross sex-typed occupational preferences. Although few in number, some boys also preferred androgynous or female sex-typed occupations. In the labour force, there are similarly men and women working in non-traditional and androgynous fields. Yet, according to Gottfredson the sex-type of occupational choice is the least compromised. Hence, at both the childhood and adult levels, the theory does not predict or explain non traditional preferences or choices. Similarly it fails to explain the preference of some high socio-economic background respondents for lower status occupations or the preference of some low socio-economic background respondents for higher status occupations. To find explanations for these occurrences requires more dynamic theories than that put forward by Gottfredson. The social learning theory of Krumboltz, Mitchell and Jones (1978) or Bandura's (1977) self-efficacy theory, for example, explain non-traditional career patterns in terms of learning experiences and self cognitions. Clearly, a useful theory for understanding the process of occupational choice needs to incorporate the dynamic interaction of psychological factors (e.g. self-esteem, self-perceived ability) with sociological factors (e.g. social background).

#### Implications of Gottfredson's Theory and the Present Findings for Careers Education and Awareness Programmes

Despite the limitations of Gottfredson's (1981) theory, present results do suggest that it has important implications for careers awareness programmes. Even the youngest children surveyed were aware of occupational roles. Perhaps surprisingly, very few said that they did



not know what they wanted to be and very few responded with fantasy choices. This fact, together with the indications that occupational preferences are influenced by sex-role stereotypes and socio-economic status from a comparatively early age strongly suggests the need for earlier careers education or awareness programmes. There are clear indications in the research literature (e.g. Farmer, 1985; Sewell & Hauser, 1975) that status variables such as gender and social status can be mediated by environmental intervention. Already, it seems that the "Girls Can Do Anything" campaign might have made an impact, as demonstrated by the percentage of girls preferring cross-sex and androgynous occupations in the present study. Perhaps a similar campaign is needed to encourage boys into traditional female occupations, although until female occupations are more highly valued and better paid, such efforts may be pointless.

It is possible that the selection of sex appropriate and status appropriate occupations reflects a lack of awareness of occupational alternatives. One of the noticeable trends in the occupational preferences of children at all ages was the limited range of occupations preferred by both boys and girls. Doctors, farmers, lawyers, nurses, teachers and social workers were among the most frequently named occupations with technology making a small impact in the choices of computer designers and programmers. The most popular choices in the occupational card sort similarly showed a pattern of preferences for well-known occupations. Two sources of familiarity are the media (especially television) and the direct role models of parental occupations (particularly fathers). Hence, in the face of limited knowledge about occupations that are available, children



possibly resort to occupations of parents (potential socio-economic influence) or occupations that they see on a regular basis (potential sex-type influence).

To overcome the reliance on the media and family as the key sources of occupational information, there is a clear need to expose children to a wide range of occupations from an early age. At present, careers education programmes are undertaken at secondary school, but present results, together with results of previous research studies (e.g. Tibbetts, 1975; Vondracek & Kirchner, 1974), indicate that targeting careers programmes at this stage is too late. School programmes provide many opportunities to incorporate occupational information into the existing curriculum, without the need for elaborately designed packages. For example, a social studies unit on "People who help us" might readily be used to explore the occupations of a wide range of community care personnel. Bank (1969) describes a careers education programme for primary school children which simply uses parental occupational role models to facilitate children's exploration of "careerland". But the success of any careers programme depends largely on the efforts of teachers. In addition to a role of providing occupational knowledge, teachers have been identified in the literature as important mediating influences on the restrictive effects of social status and gender (e.g. Farmer, 1985; Lunneborg, 1982). Careers education possibly needs to be aimed at teachers as well as students, in order to ensure that encouragement is not directed toward maintaining sex-typed occupational stereotypes.

The introduction of careers awareness programmes at an early age is

consistent with two of the major vocational theories. According to Holland (1973), occupational choice requires self-knowledge of ones skills, aptitudes and abilities and knowledge of occupations. The accumulation of knowledge takes time and it cannot be expected that a few pamphlets and the occasional class session at secondary school level will provide the depth of occupational knowledge needed for sound career decisions. Super (1963) links the ability to make suitable occupational choices to the vocational self-concept, formed by the child's observations of and identification with adults involved in the world of work. It follows that if children are exposed to only a narrow range of adult work roles, then their own choices are likely to be restricted. Clearly, if the potential influences of sex-role socialisation and socio-economic background are to be counteracted, children must be given the opportunity to obtain a wide knowledge of occupations through information and exposure to a range of adult occupational role models.

## CHAPTER FIVE

### SUMMARY AND CONCLUSIONS

The present study clearly indicates that, at a general level, Gottfredson's (1981) theory makes a valuable contribution to an understanding of vocational development from the early years of childhood through to adolescence. The process of choosing an occupation does, overall, appear to involve the incorporation of sex-role and social differentiation concepts into the developing vocational self-concept, as Gottfredson suggests. In addition, present findings indicate that the order of such development is as predicted in the theory, with occupational preferences influenced firstly by sex-types and secondly by socio-economic background and ability.

The 'cognitive map' of occupations described by Gottfredson (1981) in relation to occupational stereotypes appears, in light of the present results, to be established early among children. While some occupations were seen as lower or higher in status level than actual level, overall accuracy for the perception of status level was evident from the age of five. Similarly, children of all ages held relatively accurate perceptions of the sex-type of occupations.

Although Gottfredson's (1981) theory is an important one in relation to early vocational development, present results accent several areas which may need to be re-examined and modified. The ages at which the acquisition of a sex-role orientation occurs is one such area, and it is suggested that future research should include pre-school children in the sample, in order to establish more accurately when sex-typing of

occupational preferences and occupational stereotypes occurs. Also needed is a re-examination of the development of recognition of status levels of occupations (status occupational stereotypes), because even five year old children appear to hold status occupational stereotypes. Finally, the issue of sex differences is a major one, permeating both occupational stereotypes and occupational preferences. The failure of Gottfredson's theory to address the issue highlights the inability of the theory to deal with atypical behaviours. This inadequacy stems from the deterministic nature of the theory, which ignores the dynamic interplay of environmental factors (such as parent/teacher support or affirmative action campaigns) and personal factors (such as self-confidence or motivation). Until such factors are included, the usefulness of the theory for describing occupational choice at an individual level will be severely limited.

The early emergence of sex-typing and status perceptions as influences on the occupational preferences and occupational stereotypes of young people have important implications for the targeting of careers awareness and education programmes. Schools have a critical role to play in counteracting the restrictive influences of sex-typing and socio-economic background. Providing children with a wide range of non sex-typed occupational information from an early age is one way of possibly preventing occupational choices based on limited occupational knowledge. At present, careers education focuses on pupils at Secondary School: if schools are to effectively prepare young people for the career decisions they must ultimately make, such education needs to begin considerably earlier.

## APPENDIX I

### GLOSSARY

A list of definitions for various terms used in the present study is included here, as several of the terms are used inconsistently and in different ways in the occupational and sociological literature.

#### Gender Constancy

The stage in sex-role development at which the child knows that gender does not change despite superficial transformations

#### Gender Identity

The earliest stage of sex-role development involving recognition of the gender to which the child belongs

#### Object Constancy

The stage in cognitive development at which the child recognises that an object does not change despite superficial transformations

#### Occupational Aspirations

Aspirations include fantasy choices and real-world ambitions that are

not realistically attainable.

### Occupational Choices

Choices are realistic and take into account ones ability, skills knowledge and awareness of the opportunity structure. Hence, choices are the occupations that people actually work in.

### Occupational Preferences

Preferences are the jobs people would like to do and they have a realistic basis, although the jobs might not be readily available.

### Occupational Prestige

The perception that certain occupations are more desirable than others as a function of economic rewards and relative importance to society

### Occupational Stereotypes

These are occupational generalisations comprising two major components: (1) the perception of which gender is better suited to an occupation (sex-typed occupational stereotype) and (2) the perception of an occupation's status (prestige level occupational stereotype)

### Sex-role Development

The major tasks of sex-role development are the acquisition of gender identity, gender constancy, sex-typed preferences and sex-role stereotypes.

#### Sex-Typed Occupational Preferences

A preference for occupations that are consistent with sex-role stereotypes.

#### Sex-Typed Preferences

These are preferences that conform with traditional concepts of what is appropriate for males and females. Such preferences occur in the choice of activities, play objects and peers.

#### Sex -typing

The attribution of objects, activities or behaviours to one gender.

#### Sex-role stereotypes

Generalised perceptions of what functions are deemed appropriate for a given gender.

#### Social Class

Definitions of social class vary. Some emphasise unequal economic

relations and power while others view class as the differential distribution of societal rewards.

### Socio-Economic Status

This type of status combines economic elements ( income) with social indicators such as education.

### Social Stratification

Stratification refers to a process of classifying social differentiation and social evaluation into unequal categories. Concepts of social class, status and socio-economic status all fall within the umbrella of stratification

### Status

Status refers to social position, as opposed to economic position. The concept of prestige and differences among individuals as perceived by others are key components of status.



## APPENDIX II

### DEFINING AND MEASURING "SOCIAL CLASS"

Concepts of "social class", occupational prestige, status and socio-economic status fall within the umbrella of social stratification, which refers to the process of classifying social differentiation and social evaluation into categories. Carter's (1973) overview of theories of social stratification clearly reveals that there is no universally accepted definition of "social class" or, indeed any stratification concepts. In relation to "social class", definitions vary according to the theoretical perspective from which it is viewed. The two major theoretical perspectives are the functionalist view and the conflict view. The former perspective regards stratification as the outcome of differential distribution of rewards in society while the latter perspective associates stratification with the exploitation of labour and defines class in terms of its relation to the means of production (a Marxist perspective).

In addition to the lack of agreement over definitions, Carter (1973) points out that there is considerable disagreement over the validity of "social class" as distinct from social stratification. Some theorists see "social class" and stratification as separate concepts, others contend there is no difference while yet another school questions the very existence of "social class".

Given the confusion and lack of consistency in definitions of "social class", Carter (1973) suggests that "for the individual investigator using social class as a variable, the specific aspect of social class he is concerned with should be operationalised, measured and labelled as such, rather than using the broad rubric of social class for a more specific phenomenon e.g. occupational prestige" (p. 23). Relevant aspects of social class identified in Carter's review include the following: occupational prestige, global prestige, demographic characteristics such as occupation, income, education, residence and self-perceived class or status. Such aspects underline the construction of scales designed to measure social stratification.

Most of the scales developed to measure aspects of "social class" have used either occupational prestige or demographic characteristics. Carter (1973) notes that occupational prestige is a very stable attribute that can be reliably measured. Daniel (1984) contends that occupational prestige is the most powerful measure of "social class". The development of prestige scales generally involves asking varied populations to evaluate the relative ranking of occupations. Among the problems with this subjective type of scale, however, are the small, homogeneous sample sizes used to rank occupations and the global nature of some of the occupational categories.

Demographic characteristics are commonly used to devise objective measurement scales. Indicators such as occupation, education, income, residence, ownership of consumer durables (Carter, 1973; Daniel, 1984) are used alone or in combination to produce a single socio-economic measure. Occupation is generally the major component of

objective scales as it captures much of the variance in income and education. Carter's review of measurement scales concludes unequivocally that occupation is the most valid and reliable indicator of social status. Knowles (1980) similarly notes the usefulness of occupation as a measure of social stratification. One of the few problems with using occupation, however, is that the breadwinner's occupation is most often used, which ignores the economic status of other members of the family. This can be overcome in part by using the socio-economic level of both parents in a family.

Both objective and subjective scales have been developed for the New Zealand context. An outline of the development of measurement scales in New Zealand is provided by Knowles (1980). In 1940 an occupational scale based on the level of training and skills needed for particular occupations was developed by Redmond and Davies. Congalton and Havighurst (1954) considered this scale to be inadequate and, fourteen years later, they developed a "prestige" scale using a large sample of subjects to rank 30 occupations according to perceived social standing. The scale was subsequently revised and the number of occupations increased to 116, but these additional occupations were rated by a small number of university students.

Both of these scales were seen as inadequate by Elley and Irving, who developed an objective scale in 1972, which was updated in 1977. The New Zealand Elley-Irving Socio-Economic Index (1972) used median income and median education level "because previous research has shown these to be the two most important factors in other socio-economic scales ....and because the data could be readily calculated from information

collected in the Census" ( Elley, Irving 1976, p26). Elley-Irving devised two scales, one for males (1974) and one for females (1977). For the male index, the median incomes and median education levels for male workers in 451 occupations were converted to standard scores, then combined. From these combined standardised values, the occupations were grouped into six levels. The same procedure was used in the construction of the female index, based on female workers in 270 occupations. Both indices were calculated for the 25-44 age group to avoid distortions caused by changing trends in the length of schooling.

Knowles (1980) notes that one of the problems with the index is its assumption that education and income are equal. An additional problem is the heterogeneity of categories ( it is possible to have low income-high education and vice versa). Despite these problems the scale is the most recent objective scale available in New Zealand and it is one of the few scales to provide an index for female workers.

An alternative to the objective Elley-Irving scale has been put forward by Stewart and Gorringer(1977). Designed for researchers who prefer a subject-ranked index (prestige scale), the scale updates the Congalton-Havighurst scale using 146 occupations rated by 41 randomly selected subjects. The correlations of the Stewart-Gorringer scale with existing scales are high: Congalton-Havighurst .86, 1972 Elley-Irving .84, 1976 Elley-Irving .82, Davis .84.

Further alternatives to present scales are currently being developed. Recently, exploratory work has been carried out by the Statistics Department, aimed toward developing a socio-economic classification

suitable for New Zealand society, beyond the dimensions of a fixed scale. Preliminary data has identified dependence between occupation status, education and income, using cluster analysis (Adams, 1985). Knowles (1980) reports on the development of a social class indicator by Davis (1979, cited Knowles, 1980) which aims to meet the requirements of sociological theory and analysis in class and stratification as well as meeting empirical criteria. Neither of these scales are sufficiently tested or developed for use in research.

A number of research studies in New Zealand have used and tested the measurement scales and/or social indicators described above. Vellekoop-Baldock (1971) used the Congalton-Havighurst (1954) scale to measure prestige, in addition to using data on job type (blue collar, white collar), educational level and income, in investigating the relationship between social background and occupational aspirations. A more recent investigation by Tuck, Ashby and Blum (1985) measured social class of respondents in relation to the attitudes of adolescents to marriage, education and occupational roles. In this study a more Marxist class approach to measurement was used, rather than a stratification approach based on socio-economic status. Social class of students' parents was assessed according to the exercise of power and authority through ownership and management of capital. Seven classes emerged using this criteria. However, in drawing conclusions about their results, Tuck et al comment that "it is possible that the model of social class adopted for this study is inappropriate for New Zealand" (p. 19).

One of the frequently used measures in studies interested in the

influence of social background is the Elley-Irving Socio-Economic Index. A direct evaluation of this index as a measurement instrument was carried out by Ferguson and Horwood (1979) who compared the Elley-Irving scale with individual measures of socio-economic status including income, education, savings and assets, home ownership, housing quality and standards of living. The study results validated the Elley-Irving index as a measure of socio-economic status, finding a significant correlation of the scale with all of the individual measures. However, correlations with non-education variables were modest, suggesting the scale is a less accurate predictor of social and economic conditions within the family. Ferguson and Horwood note that the Elley-Irving index is more commonly used for measuring the representativeness of samples and should be used more cautiously as an economic indicator of the variability of social and economic conditions within New Zealand families. Clearly, the purpose of measuring social background should always be kept in mind when deciding which scales to use.

Subject Number \_\_\_\_\_

QUESTION SHEET

(1) What job would you like to do when you go out to work?

\_\_\_\_\_

(2) Why would you like to do this job?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(3) Who do you know that does this job? (Place a tick (✓) in the box(s)).

- ☐ mother
- ☐ father
- ☐ sister
- ☐ brother
- ☐ aunt
- ☐ uncle
- ☐ cousin
- ☐ person in the street where I live
- ☐ person on television
- ☐ do not know anyone

(4) People sometimes think of themselves as belonging to one social class or another. If you had to choose, what would you call yourself? (Place a tick (✓) in the box).

- ☐ upper middle class
- ☐ middle class
- ☐ working class
- ☐ do not know
- ☐ not sure what this means

FATHER'S OCCUPATION \_\_\_\_\_

MOTHER'S OCCUPATION \_\_\_\_\_

APPENDIX IV  
OCCUPATIONAL CARD SORT.

<b>Librarian</b>	<b>Doctor</b>	<b>Secondary School Teacher</b>
<b>Nurse</b>	<b>Police Officer</b>	<b>Sports Coach</b>
<b>Typist</b>	<b>Motor Mechanic</b>	<b>Mail Sorter</b>
<b>Hairdresser</b>	<b>Truck Driver</b>	<b>Potter</b>
<b>Cleaner</b>	<b>Jockey</b>	<b>Factory Worker</b>



APPENDIX VGROUPING OF OCCUPATIONS FOR THE PERCEIVED IMPORTANCE CARD SORTGroup One:

jockey; typist; nurse; potter; doctor

Group Two

motor mechanic; factory worker; secondary school

teacher; hairdresser; sports coach

Group Three

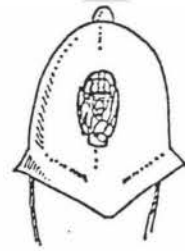
librarian; mail sorter; police officer; cleaner;

truck driver

PICTORIAL OCCUPATIONAL CARD SORT  
FOR FIVE YEAR OLDS.

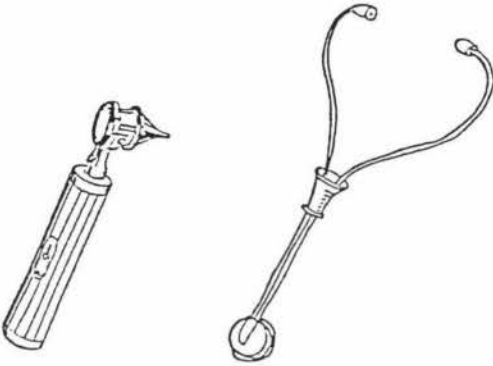


Potter

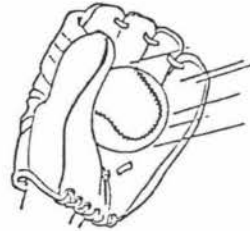


Police  
Officer

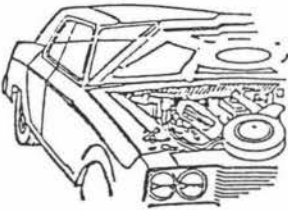
Doctor



Sports  
Coach



Motor  
Mechanic



Truck  
Driver

Nurse

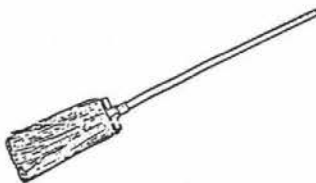


Factory  
Worker

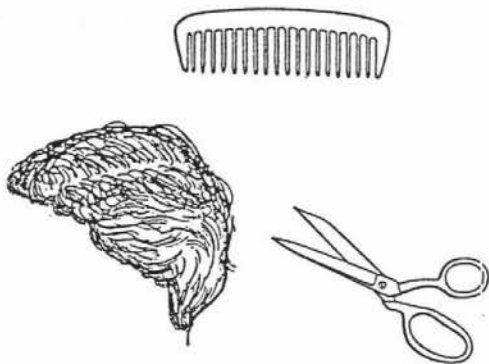


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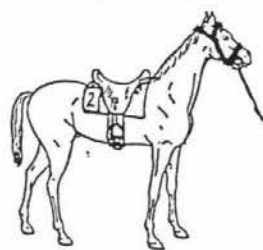
Cleaner



hairdresser



Jockey



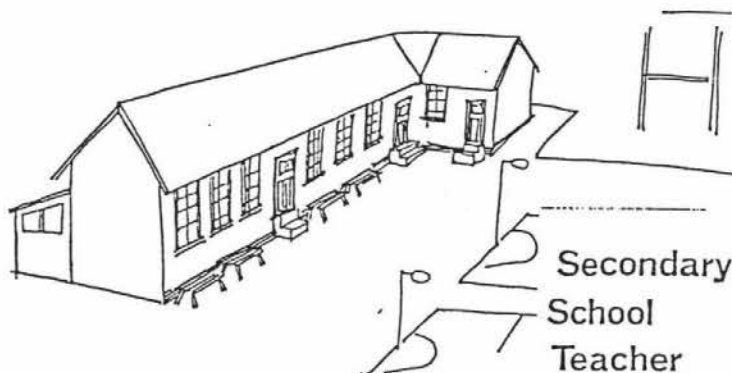
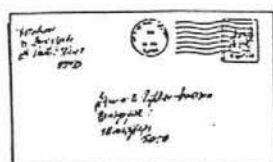
Librarian



Typist



Mail  
Sorter



Secondary  
School  
Teacher

RECORDING SHEET FOR FIVE YEAR OLDS.

SUBJECT NUMBER \_\_\_\_\_

	preferences	importance	gender
librarian			
doctor			
secondary school teacher			
nurse			
police officer			
sports coach			
typist			
motor mechanic			
mail sorter			
hairdresser			
truck driver			
potter			
cleaner			
jockey			
factory worker			

LETTER TO PARENTS & CONSENT FORM.

Dear Parent

Over the next few weeks we shall be undertaking a study in primary, intermediate and secondary schools to try to find out more about which jobs young people prefer and how they see themselves and the context in which they live. We are particularly interested in finding out at what age young people begin to narrow down the range of jobs which they might consider. This information is important if sound advice on possible careers is to be given in schools. For example, we may find out that career education or career awareness classes should start at an earlier age than they do at present.

This study has been approved by the Massey University Ethics Committee and by a committee of the Wanganui Education Board that screens all research undertaken in schools in the Massey University area. We may need to consult your child's progress card. This information will be kept in strictest confidence. The coding system we are using will ensure that individual responses are not identifiable to anyone other than the principal researchers. The responses of the individual pupils will be strictly confidential.

If the first phase of our research is successful, then we hope to contact the same young people again next year so that we can trace developmental changes in their views about different jobs. We shall send you another letter summarising the findings from our first phase and outlining our plans for next year.

Sue Henderson, who is a trained teacher, will be doing the research, under my supervision. Jocelyn Grainger, who is on the staff of the Psychology Department at Massey University, will assist with some of the interviewing. If you want to ask any questions about our research or if you would rather your child did not participate in this study, please contact either Sue or me at the Psychology Department, Massey University [REDACTED]. Alternatively, you can give your child the signed slip at the bottom of this letter and we shall ensure that he or she does not participate.

Sue Henderson and I look forward to, and appreciate, your co-operation in this important research project.

Yours sincerely



DR BERYL HESKETH  
SENIOR LECTURER

---

I DO NOT WANT MY CHILD TO PARTICIPATE IN THIS STUDY.

---

Parent's Signature

APPENDIX IX

TABLE 9-1

Number and Percentage of Intermediate and Secondary School Pupils  
at each Ability Rating and equivalent P.A.T. Percentile Score

---

P.A.T. PERCENTILE	ABILITY RATING	INTERMEDIATE N		SECONDARY	
85+	1	14	13.5	14	11.3
70 - 85	2	16	15.4	23	18.5
31 - 69	3	47	45.2	48	38.7
15 - 30	4	17	16.3	22	17.7
<15	5	10	9.6	17	13.7

---

APPENDIX X  
INTRODUCTION TRANSCRIPT

Good morning/afternoon class. My name is Sue Henderson and I am a student at Massey University. This year I am doing some research as part of my studies and I am here to ask you to help me with this research.

Many of you have probably thought of what kind of job you would like to do some day. I am interested in finding out more about how and why people choose the jobs that they do. I think choosing jobs is an on-going thing which probably starts early in our lives. To look at this I am asking people of different ages, from 5 year olds to 15 year olds, about the jobs they would like to do and what they think of different types of jobs. I also want to find out more about what sorts of things might influence the jobs people choose.

Your taking part in this research will play an important part in helping us to understand more about how and why people choose the jobs they do. The findings will also be of valuable help in planning careers awareness or education programmes.

You do not have to take part in this research. If you do, you can be sure that what you do will only be seen by me. Your name will not be on anything you do, so that nobody except you will know what you have done.

I have a letter for you to give to your parents or whoever looks after

you. This letter is to tell your parents about the research, just as I have outlined it to you.

Your help with my research will be most appreciated and I look forward to coming back to your class soon.



APPENDIX XI  
JOB DESCRIPTIONS

Nurse: a person who is trained to care for the sick

Hairdresser: a person whose occupation is to cut and style hair

Secondary School Teacher: a person who teaches pupils attending a secondary school or college

Potter: a person who earns a living by making objects with clay

Doctor: a person who is trained to find out why people are sick and to give treatment to make them healthy again

Typist: a person whose occupation is to type letters, reports and other kinds of papers

Jockey: a person who earns a living by riding racehorses

Motor Mechanic: a person who is trained to repair motor vehicles

Factory Worker: a person who works in a factory packing, sorting or assembling objects

Sports Coach: a person who trains people to perform well in their chosen sport

Police Officer: a member of the police force who is responsible for detecting people who break the law

Mail Sorter: a person working in the post office who sorts letters into areas to which they are to be delivered

Librarian: a person who is overall responsible for the library itself and staff working in the library

Cleaner: a person who works in places such as offices, schools, factories to keep the floors, walls and furniture clean

Truck Driver: a person whose occupation is to drive a truck, uplifting goods from one place to deliver to another

NOTE: For junior children wording was made appropriate to their

level of understanding.

APPENDIX XII  
FEEDBACK LETTER TO PARENTS.

Department of Psychology  
15th August, 1985.

Dear Participant,

Earlier this year you cooperated in our research study which looked at what sorts of jobs young people prefer and how they see different jobs in relation to their social context.

We now have a set of preliminary findings to report back to you. These findings are based on a sample of 396 school pupils aged between 5 and 14 years. We were particularly interested to see at what age young peoples' occupational preferences were influenced by their gender. At all ages, males strongly preferred jobs that according to the New Zealand Census are typically held by males, and females preferred jobs typically held by females. We had not expected gender to have such a strong influence on the preferences of New Entrants (5-year olds). We also found that occupational preferences were influenced by the young peoples' ability and by the types of jobs which their parents hold.

The second part of the research looked at how young people saw 15 carefully chosen occupations. These occupations were chosen to represent jobs requiring varying levels of education and earning capacity, as well as jobs predominantly occupied by men, predominantly by women or equally by men and women. For girls, the most preferred job was that of hairdresser, followed by nurse, then typist. Most boys preferred the job truck driver, with mechanic ranked second most popular and police officer next.

In addition to stating which of the 15 jobs they preferred, pupils were asked to state whether they thought men, women or both men and women would like to do each of the jobs. Younger children (5 years to 8 years) tended to be more likely to retain the sex typing of the jobs, but the older pupils thought that, for the majority of the jobs, both men and women would like to do the work. Exceptions were truck driving and motor mechanic, which were clearly seen as male jobs and nurse, typist and cleaner which were clearly viewed as female jobs.

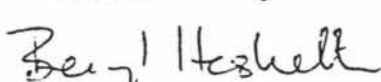
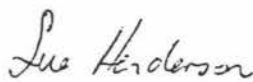
Finally, the 15 jobs were ranked in terms of how important they were seen to be. Three jobs were consistently classified as most important across all age groups -- doctor, police officer and secondary school teacher. The job truck driver was also seen as relatively important which may be due to its overall popularity. Jobs ranking lower in importance across all ages were that of jockey, sports coach, potter and librarian.

At this preliminary stage we feel that the study has highlighted the early age at which gender influences occupational preferences. Although many young people thought that the 15 occupations listed on the cards could be liked by both men and women, their own freely chosen preferences tended to be for occupations held mainly by their own gender. Female pupils seem to be more open to considering typically male jobs than males to considering typically female jobs. Perhaps campaigns such as "Girls can do anything" are having some success among young women, but young men are not considering jobs typically held by women.

The type of job parents hold does influence the types of jobs young people prefer. This suggests that most young people may be choosing occupations from a limited range, based on their familiarity with typical jobs held by their family and friends. We feel it is important for schools to try to expose all young people to the full range of occupational possibilities so that their choices are not limited by their gender or their prior familiarity with certain types of jobs.

Thank you for participating in this study. We will be making more detailed findings available to schools and guidance staff in the hope that they may find it useful in designing career education programmes. Please contact us if you want any further information.

Yours sincerely

	
Beryl Hesketh	Sue Henderson
Senior Lecturer	M.A. Student

### APPENDIX XIII

#### RATIONALE FOR CHOICE OF ANALYSES

The two major dependent variables of interest in the present study were sextype (male, female, androgynous) and socio-economic status of occupational preferences. Both dependent measures incorporated free choice and forced choice formats. The categorical nature of the sex-type data precluded the use of multiple regression techniques. In the case of the second dependent measure (socio-economic status), multiple regression can be used if socio-economic status is treated as a continuous variable. However, where socio-economic status is a dependent measure the practice of treating it as a continuous variable is suspect. Hence, for the purposes of the present investigation, multiple regression techniques were not suited for the analysis of either dependent measure.

The independent measures investigated in the present study included categorical data (gender of respondents) in addition to continuous and "quasi" continuous data (ability estimate, age, socio-economic status).

A number of methods of analyses were considered for the data yielded. Although contingency tables and Chi squares were suitable, more precise analyses were required in order to specifically test the hypotheses elicited from Gottfredson's (1981) theory and the relevant research literature. Initially, the use of hierarchical loglinear analysis appeared promising, but unfortunately the version of SPSSX available contained only loglinear and logit analysis (despite hiloglinear being

covered in SSPX, 1985). Loglinear does not treat any particular variable as dependent, while the more powerful logit analysis requires a dichotomous dependent variable. Logit analysis can deal with any combination of continuous, rank order or categorical independent variables, but the inability of logit to deal with non-dichotomous variables meant loss of a considerable amount of information and rendered it unsuitable.

Given the unsuitability of logit analysis, discriminant analysis was investigated as an alternative means of analysing the data as it can be used to analyse data when the dependent variable involves two or more groups. In its two group form discriminant analysis is equivalent to multiple regression. According to Lachenbrach (1975), the linear discriminant function performs quite well on discrete (non- continuous or categorical) data of various types and it is reasonably robust when used in this way. Discriminant analysis has increasingly been used in the social science research. It has, for example, been used successfully by psychologists in personnel research to predict which job applicants will be successful in a particular job, based on the applicants differences on several variables (Klecka, 1975). In addition to its use for classification and prediction purposes, discriminant analysis can also be used for more theoretical research purposes, involving structured hypothesis testing (Kerlinger & Pedhazur, 1973).

The ability of discriminant analysis to deal with various types of data (discrete and continuous) and its facility to test hypotheses indicated the suitability of discriminant techniques for the analysis

requirements of the present study. It was decided to use and report the results of discriminant analysis, backed up by more simple contingency analyses. As the discriminant function was used for hypothesis testing the classification phase was not invoked, although it was used to test the strength of relationships obtained, for cross validation purposes. Comparisons of results obtained from discriminant analysis and logit analysis with the dependent variables dichotomised revealed considerable compatibility, strengthening the confidence in the interpretation of the data analysis. All analyses were undertaken with SPSSX (SSPX Users Guide, 1982; SSPX Advanced Users Guide, 1985).

APPENDIX XIV

TABLE 14-1

Correct and Incorrect Classification of Sex-Type of Occupational  
Preferences in Relation to Gender for Selected and Unselected Cases in  
the Free Choice Condition

	Correct Classification		Incorrect Classification		Total
	N	%	N	%	
Selected Cases	83	77.6	24	22.4	107
Unselected Cases	205	71.3	84	29.1	289

chi (1) = 1.53,  $p > .05$ , Yates Correction



APPENDIX XV

TABLE 15-1

Correct and Incorrect Classification of Socio-Economic Status Level  
of Occupational Preferences in Relation to Parental Socio-Economic  
Status for Selected and Unselected Cases in the Free Choice Condition

	Correct Classification		Incorrect Classification		Total N
	N	%	N	%	
Selected Cases	50	40.6	73	59.3	123
Unselected Cases	89	36.9	152	63.1	241

chi (1) = 1.86, p > .05, Yates Correction

## APPENDIX XVI

TABLE 16-1

Perceived Importance Level of Occupations at each School Class Level

	PERCEIVED IMPORTANCE LEVEL																			
OCCUP.	1				2				3				4				5			
	'NE	SI	I	F4	'NE	SI	I	F4	'NE	SI	I	F4	'NE	S1	I	F4	'NE	S1	I	F4
Lib	12	7	3	2	14	18	12	18	13	14	20	21	19	24	30	37	22	14	44	51
Do	20	29	99	118	23	21	6	4	15	7	2	3	13	15	2	3	9	5	-	-
S.T	18	23	68	94	18	13	19	15	16	8	13	10	10	15	6	6	18	17	3	4
Nur	31	21	3	4	19	29	89	112	8	13	10	7	9	6	3	4	3	8	4	2
P.	45	42	98	112	13	17	9	2	10	9	1	5	7	7	1	2	5	2	-	4
S.C	7	12	6	4	14	8	7	11	15	16	17	14	24	19	30	45	20	22	49	55
Typ	10	12	3	4	15	12	7	7	24	28	83	87	18	16	12	14	13	9	4	7
Mec	5	15	18	19	15	19	44	48	19	20	34	52	14	13	11	6	17	10	2	3
M.S	9	6	1	1	21	21	31	44	18	19	43	50	17	18	23	36	15	13	11	8
H.D	17	9	7	5	21	16	13	7	11	10	16	16	17	21	37	47	14	21	35	54
T.D	7	15	6	11	21	12	41	45	18	17	24	35	17	11	22	24	17	22	16	15
Pot	8	6	-	2	7	9	4	1	16	11	5	13	29	24	53	73	20	27	47	41
Cle	7	6	2	3	11	11	17	17	23	18	22	18	20	16	32	41	19	26	36	51
Joc	11	11	4	2	16	5	3	4	17	18	9	7	10	18	39	38	26	25	54	79
Fac	23	17	10	7	12	20	23	48	19	23	30	39	15	7	26	22	11	10	20	13

KEY

NE = New Entrant

S.C = Sports Coach

S1 = Standard One

Typ = Typist

I = Intermediate

Mec = Mechanic

F4 = Form Four

M.S = Mail Sorter

Li = Librarian

H.D = Hair Dresser

Doc= Doctor

T.D = Truck Driver

S.T= Secondary School Teacher

Pot = Potter

Nur = Nurse

Cle = Cleaner

P.O = Police Officer

Joc = Jockey

Fac = Factory Worker

## APPENDIX XVII

TABLE 17-1

Perceived Sex-Type of Occupations at Each School Class Level

Occupation	Sex-Type of Occupation											
	Female				Male				Androgynous			
	N.E.	S1	I	F4	N.E.	S1	I	F4	N.E.	S1	I	F4
Librarian	37	31	66	77	22	12	2	1	21	34	40	50
Nurse	53	66	73	79	14	2	2	1	13	9	33	49
Typist	33	42	77	96	25	8	1	1	22	27	30	32
Hairdresser	48	53	36	39	15	6	2	1	17	18	70	89
Cleaner	33	43	49	54	28	14	3	4	19	20	56	71
Doctor	19	4	2	0	44	48	29	26	17	25	77	103
Police Officer	12	3	2	2	52	42	22	24	16	32	84	103
Mechanic	11	4	1	2	60	68	68	85	9	5	40	43
Truck Driver	5	1	1	2	59	69	67	69	16	7	41	59
Jockey	18	8	3	2	40	42	36	37	22	27	70	91
Sec. Teacher	42	24	4	0	13	5	0	1	25	48	105	127
Sports Coach	6	2	3	3	62	51	24	16	12	24	82	111
Mail Sorter	31	10	10	6	26	32	15	7	23	34	84	117
Potter	31	35	13	14	33	12	8	11	16	30	88	104
Factory Worker	22	10	6	6	38	39	28	25	20	28	75	99

KEY

N.E. = New Entrant

S1 = Standard One

I = Intermediate (Form I & II)

F4 = Form Four

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