REPORT NO. 1 : WESTERN AUSTRALIAN CAREER DEVELOPMENT PROJECT

SCHOOLING, CAREER CHOICE AND OCCUPATIONAL ATTAINMENTS:
REVIEW OF RESEARCH AND POLICY IMPLICATIONS

Dr. Janice Currie
School of Education
Murdoch University
Murdoch, Western Australia 6153

SEPTEMBER 1977
This project has been supported and assisted by the Academic Task Force and the Staff Development Committee of the Western Australian Institute of Technology, the Western Australian Post-Secondary Education Commission, Murdoch University and the Educational Research and Development Committee of Australia.

Special thanks is extended to members of the Western Australian Social Science Research Group, Academic Task Force, the Education Department of Western Australia, and each individual students and staff members of the secondary and tertiary institutions who assisted in making this survey a successful endeavour.

There are two individuals who deserve mentioning for without them these reports would never be produced - my secretary, Keiko Lewis, and my research assistant, K. Kapadia.
Is there a myth of equality in Australia and the United States?

So, then, to every man his chance -
To every man, regardless of his birth,
His shining, golden opportunity -
To work, to be himself,
And to become
Whatever thing his manhood and his vision
Can combine to make him -
This seeker,
Is the Promise of America.

Thomas Wolfe

Giv'em a fair go .......

Australian saying
Researchers in many parts of the world have studied the process of career choice with the main intention of determining major influences affecting it, especially the effects of social class and sex. In recent years, using regression analysis, attempts have been made to quantify the significant factors that influence a person's view of occupations, their job expectations, their choice of educational or training institutions, and their subsequent achievement and satisfaction in the work arena. It is fairly clear from this research that social class, particularly social status of father's occupation, is one of the most important determinants of career choice and subsequent occupation attainment. (Balán et al., 1973; Blau and Duncan, 1967; Boudon, 1973; Broom and Jones, 1969; Coleman, 1966, Cummings and Naoi, 1974; Currie, 1977; Duncan, Featherman and Duncan, 1972; Douglas, 1968; Glass, 1954; Hansen and Haller, 1973; auser, 1971; Holsinger, 1975; Husén, 1975; Jencks et al., 1972; Kerckhoff, 1974; Kohn and Schooler, 1969; Levin, 1976; Lipset and Bendix, 1966; Miller, 1975; Peschar, 1975; Sewell and Hauser, 1976; Turner, 1961). However, these same studies point to an overriding influence of education on occupational status.

There is some disagreement as to which is more important, social class or education and this argument is also evident in comparisons of women's and men's occupational mobility. Recently, Ayella and Williamson (1976) concluded that the socioeconomic success of women is more fixed by background, education and occupational factors, and is less a function of individual ability than is the case for men. However, Featherman and Hauser (1975) produced slightly different results showing that women's family backgrounds are less effective than men's in affecting their
occupational level and education is perhaps somewhat more influential in the case of women. There seems to be more agreement on the notion that separate causal models should be developed for women and men because of their different patterns of achievement and mobility (Almquist and Angrist, 1970; Ayella and Williamson, 1976; Rossi, 1972; Suter and Miller, 1973; Treiman and Terrell, 1975; Tyree and Treas, 1974).

This paper intends to review the major studies of career choice and occupational attainment among secondary school students and graduates both in Australia and overseas, focusing on the differential patterns that individuals pursue dependent upon their social class and sex. It will first look at the basic path model that was developed by Blau and Duncan (1967) which examined the occupational attainment process among the adult male labour force in the United States. In addition, it will briefly summarise the findings from researchers that applied this path model (or similar procedures) in many countries around the world for students and adults of all ages. The main aim of this exercise will be to identify significant factors that could be used in exploring the occupational attainment process among Western Australian secondary school graduates, focusing on determinants of three clusters of variables: educational aspirations and occupational aspirations (including career choice and career commitment), educational attainment (including academic achievement), and occupational status. This discussion will begin by looking at factors that affect occupational status and then work back to the earlier stages in life. A concluding section will examine past research findings in light of possible trends and suggestions for those making policy decisions about career guidance facilities and labour market or manpower projections that may affect secondary school students. Before
reviewing the empirical findings, it might be wise to examine briefly the various conflicting theoretical views of social mobility and stratification concepts.

CONFLICTING STRATIFICATION THEORIES

Liberal, Marxist and Ethically Socialist

The various interpretations of whether schooling influences occupational attainment more than social origins can be explained to some extent by the underlying ideological assumptions associated with different positions. There are at least three positions that can be identified along a continuum from 'liberal' to 'radical left' and others that appear to lie outside these limits because their position asserts that "school is irrelevant" as a determinant of occupational status, productivity or income (Jencks et al., 1972; Berg, 1970; and Simmons, 1973).

The 'null effect' argument is certainly important and has been stated in slightly different terms by other writers (Anderson, 1961 and Boudon, 1973) who have remarked rather sceptically about the purported relationship between education and occupational mobility. In addition, several major national and international projects have pointed out that schools are not nearly so effective as had been imagined in eliminating learning handicaps due to unequal home backgrounds (Coleman, 1966; the Plowden Report, 1967; Husén, 1967; 1974; Douglas, 1964 and Douglas, Ross and Simpson, 1968). Jencks, who probably holds one of the strongest positions in this group, has suggested that the role of education as an instrument of social policy is negligible and that governments which wish to promote greater equality should place their main trust in other policy weapons.

Disregarding the 'null effect' position, one can identify the poles of the continuum that have been labelled, on the one side, liberal, functional, democratic, or meritocratic, and on the other as Marxist/
neo-Marxist, radical left, conflict or equalitarian. The liberal conception sees schooling as the essential institution for preparing competent members of a modern, rational, efficient and meritocratic society whilst the Marxist sees schooling as one of the most important instruments of the state for supporting the capitalist hegemony over the worker (Levin, 1976). There is also a third and middle position that was termed 'ethically socialist' by Goldthorpe (in Muller and Mayer, 1973) because he could not accept the optimistic liberal view nor the hypothetical epiphenomenological view of the Marxists which cannot be tested for it depends on the outcome of future historical processes.

Both the Marxists and ethical socialists reject the liberal, "fair competition" model based on the premise that greater equality of educational opportunity will be provided for individuals and that this, along with the economic progress of increasing industrialisation, will enable them to achieve greater social equality - a gradual evolutionary process accomplished through piecemeal reform. Ethical socialists emphasise political processes as well as economic but do not go to the extent of the Marxists who devalue political action that is less than revolutionary.

Another major difference is reflected in their varying perceptions of society and various ways of measuring or describing social mobility. Marxists feel that the measurement of social mobility on the basis of individuals moving on a continuum from low to high social status is an incorrect analogy. They also reject the liberal society model that tries to understand the social determinants (or barriers) of individual success and insist that social class is a different phenomenon from social stratification. To paraphrase the European Marxist sociologists Bertaux and Kreckel (in Muller and Mayer, 1973), the use of occupational prestige scales as continuous or hierarchical representations of stratification leads to the neglect of the objective inequalities in life-chances, limits
analysis to merely distributive aspects of class structure, by definition rules out the problem of class conflict and necessarily creates the impression of high mobility rates.

The Marxist approach studies inequality on the basis of a dichotomous model in which two classes are seen as opposed to each other. They focus on the social mechanisms and processes which are seen as suppressing the conflict which is inherent in the system and criticise studies which show industrialised societies as highly mobile, open to talent, and egalitarian. In addition, they tend to reject the use of path models which are built on individual cases and therefore embody the value assumptions of the liberal society model, that is, an egalitarian society where there is little inheritance of social status rather than one where there is little inequality, whatever its source (Wexler, 1976). In contrast to the liberal assumptions, the Marxists stress inequality in society, its economic basis and the need to radically change the structure of society before a truly egalitarian society can be created.

The ethical socialists view society as hierarchical like the liberal model but not simply as a phenomenon of socio-economic status or of prestige. Rather, as Goldthorpe states, "stratification is seen as a phenomenon of power and advantage. This is what ultimately is distributed and what one can measure, although often only indirectly, through looking at such things as distribution of income, authority, educational life-chances, and so on" (in Muller and Mayer, 1973:362). He also emphasises that it is unlikely that the present inequalities will be worked out by any logic of industrialism. The only way he sees changes taking place is through concerted political action.

In summary, members of the liberal position would be identified as Bell, Inkeles, Glazer, Blau, Duncan, Featherman, Sewell and Hauser, among others.
Essentially they believe that a good educational system can give substantial assistance to disadvantaged children and youth in moving towards the goal of a 'better' economic position for themselves (Havighurst, 1973:622). Members of the radical left position could be identified as Bourdieu, Greer, Katz, Bowles, Gintis, Levin, Cohen, Freire, Illich and Carnoy who feel that schools are really used by the people in power to serve their purposes so the inequality in society is reflected in the selection process of schooling. It is harder to identify people who subscribe to the middle position besides Goldthorpe, but one could add Collins, Muller and Mayer who feel that the old established paradigm needs to be revised. Also, one could suggest that those who consider themselves as embarking on a "new sociology of education", the phenomenologists, the ethnomethodologists, symbolic-interactionalists, and sociology of knowledge theorists (Berger and Luckman, Young, Garfinkel, Keddie, Cicourel and others) could be seen as criticising the liberal model but not necessarily adopting the radical left position, and therefore fall somewhere in the middle. This latter group in many ways is trying to redefine the problem area and in effect redefining the world as sociologists see it.

Sociology of education and stratification theory may indeed be undergoing a revolutionary process as defined by Kuhn in his book *The Structure of Scientific Revolution* (1970). There is considerable uncertainty over the results of mobility studies. Not only do they produce conflicting results, but in addition they tell us little that is radically new so this leads to a profound concern with future directions that stratification studies should pursue.

However intriguing this debate is, it is not a central concern of this paper. The reason for going into some detail about the various ideological positions is to alert the reader to be wary of the underlying assumptions of various investigators and to suggest that the confusing findings from
An attempt will be made to review a wide range of findings, identifying ideological differences when they arise. However, greater emphasis in this paper has been placed on research that uses empirical analysis, especially path analysis, for these have predominated in this field. Few studies have been done by those who disagree with path analysis or the ideologies associated with logical positivism. The few notable exceptions in the phenomenological or revisionist historical tradition will be reviewed. On the whole, there has been much more vociferous criticism of past mobility studies and empty rhetoric about the need for a new perspective than high quality work that might show us a new direction.

FACTORS AFFECTING OCCUPATIONAL ATTAINMENT

Mobility Studies of Adult Males

Most mobility studies using path models can be traced back to the benchmark study by Blau and Duncan (1967) which examined many variables in their analysis of occupational attainment among American adult males in the labour force. In the end, they reduced their model to five variables: father's educational attainment, father's occupational status, respondent's first job and status of respondent's job in 1962 (see Figure 1). This model was basically a structural interpretation of the process of occupational attainment and did not include social-psychological variables. Essentially they were trying to determine whether ascriptive or achievement variables were more important in determining one's place in the occupational hierarchy of the United States. They found that while family background characteristics were important, education and early work experience exerted a more pronounced influence on a man's life chances. Jencks, et al, (1972), in re-assessing a

this research may be a result of ideological rather than empirical differences (even though investigators of the same ideological bent often produce conflicting findings).
considerable number of mobility studies concluded that the amount of education attained was a more important variable than the other factors measured: intelligence, school attended and family background.

Figure 1 here

Even though most of these studies conclude that education has more impact on occupational status than social origins, they do not deny the significant influence that the home and its environment exert on occupational status through educational and psychological variables, such as a child's self-concept, achievement motivation, educational and occupational aspirations. In essence there is always an interplay between the individual's personality and subjective world, and the external, structural aspects that objectively place him in particular socioeconomic circumstances where there may be either obstacles or advantages to his mobility.

In summary, education can be seen as primarily a mediating factor between socioeconomic origins and adult socioeconomic achievement. This idea was aptly stated by Siegel in a conversation reported by Hauser (1970: 111) as "everything that happens to a boy before his sixteenth birthday influences everything that happens after that by way of his education". A similar observation was made by Kahl (1968:177-8) in his study of occupational attainment in Brazil and Mexico. He stated that "the paramount way in which the father influences the status of his son is through the education he helps the son obtain". In Sweden it is confirmed that education is the most important factor in explaining income variations, followed by the social class of the fathers and level of intelligence in this order. Social class and I.Q. appear to reinforce each other (Wolffe and van Slijpe, 1973).

Table 1 demonstrates the importance of son's education on his
occupation in both the highly industrialised and the lesser industrialised countries. In almost every case, when comparing the zero order correlation coefficients between father's occupation and son's occupation, and between son's education and son's occupation, son's education is almost twice as important as father's occupation on his son's occupational status. There are three instances where this is not true, but these happen to be the lesser industrialised countries on the list (Costa Rica, Haiti and Spain). Thus it is obvious from these coefficients that the education a person attains is a fairly powerful predictor of his place in the occupational hierarchy. What was stated by Prewitt (1972) for Kenya appears to be true almost universally:

It does not exaggerate to observe that occupational chances and even mobility are largely concentrated within the school years, for the point at which one steps off the educational ladder establishes the point at which one steps on the employment ladder which in turn fairly well fixes career prospects. (1972:6).

Even though there is substantial evidence to support the contention that one's educational attainment is a more powerful determinant of life chances than social background, there are many social scientists who feel that one's social origins are still the most important determinant of life chances, but that this influence becomes obfuscated by the educational factors. Haller and Portes (1973) suggest that different interpretations could result by putting either the social origin or educational variables into the path model first. They compared two path models of status attainment (the Blau and Duncan, 1967, and the Wisconsin by Sewell and Hauser, 1975) by restricting them to three variables (parental status, educational attainment and occupational status) and by constructing the models on the basis of two perspectives: (1) by looking at the impact of the more remote variable first (parental status) and then adding the more immediate variable (education); (2) by reversing the order. When considering parental status first, they found a significant gross effect of
parental status on early occupational attainment, but a still larger additional effect of education. When considering education first, they found that the additional effects of parental status on occupational attainment were entirely insignificant. A slightly different expression of this latter conclusion is stated by Duncan (1967:371) in referring to educational attainment but it could be applied to occupational attainment as well, "the relation of schooling to social background is sufficiently loose that a boy's attainment is not strictly determined or even sharply limited by the circumstances of the family into which he is born". Nevertheless, it appears as though education is less salient for occupational mobility later in life (Jacobson, 1973). As many of these studies differ in terms of age groups measured, the findings are bound to vary slightly. This is one of the complications that presents itself when looking at follow-up studies of secondary and tertiary graduates since most of the sample are not yet at the height of their careers.

**Mobility Studies of Secondary and Tertiary Graduates**

One of the first expansions of the basic Blau and Duncan model was done by Sewell and Associates with a ten-year follow-up study of Wisconsin, male, non-farm respondents who left high school in 1957. They added other educational and social-psychological variables such as significant other's influence, I.Q., level of occupational and educational aspirations and academic performance (see Figure 2). No direct effect of SES on occupational attainment was discovered, but there was an indirect effect through I.Q. and significant others' influence (influence of parents, teachers or peers referred to in the literature as SOI). Again, the largest coefficient affecting occupational attainment was educational attainment. (Sewell, Haller, Portes (1969); Sewell, Haller and Ohlendorf (1970); Sewell and Hauser (1976)).

Figure 2
Another major study of male secondary school graduates in the U.S. was that known as Project Talent (Flanagan et al., 1964). A follow-up of 1960 respondents was conducted five years after they left grade 12, and Porter (1976) did an analysis of 14,891 white respondents from this national sample. In addition to the variables that Sewell and Associates included in their model, Porter added three other interesting factors: creativity, ambition and conformity (see Figure 3). He concluded that "when working backward in the model (from occupational attainment to its antecedents), ambition appears as the primary personality variable, while educational attainment is the primary structural variable. Educational attainment mediates the relation of intelligence to occupation, while personality attributes, especially ambition, mediate the relation of significant others to educational and occupational outcomes". (p.31-32).

Figure 3
Eckland (1965), in a ten year follow-up study of 1,332 men who had entered the University of Illinois in 1952, found that graduation from college was the dominant factor in occupational achievement, mediating the effects of ability and social class. In Table 2 it can be seen that the zero order correlation coefficient between son's education and son's occupation in that study was more than twice the size of the other relationships measuring father's occupational influence on son's education and occupation. This is true of the other studies in both industrial and non-industrial societies. Thus, again, it can be seen that educational attainment is a powerful predictor of occupational attainment as shown in studies done longitudinally on secondary and tertiary graduates as well as in the previous cross-sectional data on adult males. But this, of course, does not preclude the significant impact that social origins exert on educational attainment.

FACTORS AFFECTING EDUCATIONAL ACHIEVEMENT AND ATTAINMENT

Effects of Social Status and Ability

Illustrations of the contrasting views on the effects of family background versus other factors, particularly ability, on educational achievement and attainment are not difficult to find in the literature. On the one hand, Carnoy asserts that the school system acts as a "mechanism to maintain class structure in a capitalist society and that social class is still the most important variable in predicting how far a person gets in school" (1974:323,24). On the other hand, Sewell and Hauser (1975), in their attempts to account for educational attainment among Wisconsin high school boys, found that the influence of parental background is remarkably weak; the most important factors are I.Q. (as measured by the Henmon-Nelson Test), rank in class, educational aspirations, and friends' college plans. In addition, Heynes (1974) concluded that the principal determinant of curriculum placement (academic, general or vocational streams and grades) within schools is verbal
achievement test scores, not father's occupation, education or family size.

It is important to separate the findings by whether they are predicting how long one stays on in school or how well one does in school. There is much more evidence to suggest that social origins determine how long one stays on in school, but not necessarily how well one does in school (which is more related to mental ability). As Hauser stated, "It is almost possible to say that the effects of background on achievement are due entirely to its association with intelligence" (1971:149). Other studies (Haller, 1968; Sewell, Haller and Ohlendorf, 1970; Jencks, 1972) confirm the notion that mental ability has a direct effect on academic performance and is more important than economic background in predicting success in school. The influence of social origins on academic performance has been found to be significant and substantial in several studies (Charters, 1963; Central Advisory Council on Education, 1966; Husen, 1972; Bernstein, 1961) and to be weak or negligible in others (Sewell, Haller and Ohlendorf, 1969; Picou, 1973; Porter, 1976). In other parts of the world, for example in Chile, it was found that family background was not the most powerful predictor of test performance in primary schools.

When looking at educational attainment or years of schooling, ability appears to be more important than social origins, but the influence of social origins is not totally negligible. In Costa Rica evidence suggests that academic performance is a much better predictor of educational attainment than social origins (Hansen and Haller, 1973). Lin and Yauger (1975) also found a weak association between father's occupation and son's education in Costa Rica and Haiti. Kerckhoff (1974) concluded that ability was about twice as important as social origins in determining educational attainment in England and the United States. The following statement by Jencks appears to summarise the evidence fairly:
Both family background and cognitive skills help a man get through school, but beyond that they have very little direct influence on status. Years of schooling, in contrast, have a substantial influence, even when we compare individuals from identical backgrounds and with identical cognitive skills. (1972).

In looking at other types of measures examining the relationship between social origins and educational attainment, the evidence appears more conclusive that social origins affect (1) the type of secondary school one attends, especially in those countries where the hierarchy of secondary schools is well-established; (2) access to tertiary education; and (3) the type of tertiary institution one attends. Kerckhoff had the following to say about selection of secondary schools, comparing the United States and Great Britain:

Both ability and social origin help to explain selection of secondary schools. Attending an elite secondary school is associated with higher levels of attainment even with ability held constant. Effects of school appear greater in Britain than in the United States. To a great extent, these findings fit Turner's (1960) view of the British system as one which 'sponsors' mobility. The effect of sponsorship is tempered by the system of further education which offers more of 'contest mobility' to those who did not go to elite schools.

Halsey (1975) in reviewing education and social mobility in Britain since World War II concluded that social origin continues to determine access to selective secondary schools and university attendance and that the purchase of private schooling at either the primary or the secondary level improves educational chances at a later stage. In a similar review of French education Eicher and Mingat (1975) indicate that the history of France since the beginning of the 19th century has seen a continuing expansion of education for all, but increasing differentiation between schools for the elites (l'école des notables) and for the masses (l'école du peuple). In Switzerland, a study of working class boys' social mobility (as measured by whether they attended a grammar school or went into an apprenticeship) found that family standard of living, particularly pattern of consumption, was influential but not as important as success.
or failure at earlier stages in schooling.

In Australia, a recent study of secondary schools in Melbourne showed that they vary from some which have only white-collar children to some which have very few white-collar children. The Protestant schools were serving white-collar children almost exclusively and the public, technical and girls' secondary schools were substantially blue-collar (Hunt, 1976). This study confirmed the findings of others that there were substantial differences between children attending Government, Catholic and Protestant schools, by father's occupation (Radford, 1962; Balson, 1965; and Wiseman, 1970).

In the lesser-industrialised countries a similar pattern is found. Sussman (1968) pointed out that despite equalisation of access to high schools in Puerto Rico, there is very unequal access to high schools of superior quality which results in significant class differentials in educational achievement. Olson (1971) discovered a similar situation in Kenyan high schools where social class origins were correlated with attendance at elite schools; however, only a loose relationship was evident between social background and secondary school performance.

In a wide-ranging review of a number of studies of educational participation in European countries, Levin (1976) shows that a direct relation exists between such measures of social class origin as father's occupation and the amount of and type of education that a student receives (Spain: Diez et al., 1975; Germany: Pfaff and Fuchs, 1975; France: Boudon, 1975; Sweden: Fögerline, 1975; and Holland: Peschar, 1975). He also noted that even when one removes the effect of measured intellectual differences - themselves partly a result of social class influences - the participation rates of persons with similar academic ratings are lower for persons from working class families than those from middle class or upper class ones.
At the tertiary level the influence of social origin appears to be even more marked. Table 3 shows estimates of relative chances of students from different social class origins in gaining access to higher education in various countries. On the basis of these estimates it was about five times as likely for an upper-class youth as a lower-class one to enter the higher educational segment in relatively egalitarian Yugoslavia in 1960, while in Portugal the likelihood was 125:1 (Levin, 1976).

Table 3

In Australia the differences are similarly marked and some recent interesting findings suggest that there is a hierarchy of faculties within universities as well as a distinct difference between universities and colleges of advanced education in the recruitment of their students. Table 4 shows the results of a nationwide survey of 1974 tertiary students in which it was found that just over half of all university students had fathers in professional or administrative occupations. It also indicates that the proportion of students with professional/administrative fathers was highest among university students enrolled in non-education courses, next highest among C.A.E. students in non-education courses, followed by university students of education and lastly by C.A.E. students (Beighton and Gallagher, 1976) and Western of education. /This study confirms the work of Anderson/(1970) on the influence of class background on career choices among tertiary students in various professions in Australia. Beswick (1975) also found social class to be related to choice of tertiary institution in Australia (University, multi-purpose C.A.E. or single-purpose C.A.E.).

Table 4

To summarise, a statement by Lipset sets the tone of the relationship between social origins, education and social mobility:

The advanced Communist countries have not been more successful than the advanced Western countries in removing all the barriers to upward social mobility. In all the industrialised nations
higher education is an almost essential prerequisite for social advancement. And despite the efforts of many societies to insure that educational resources are equally available to all, everywhere lower-class children seem unable to take full advantage of them. (Lipset, 1972:106).

Effects of Significant Others' Influence, Personality and Aspirations

Social researchers, who have dealt more with social-psychological variables, have begun to doubt the usefulness of traditional measures employed to assess the effect of family background. They have made attempts to disaggregate the concept of "social class" to determine the characteristics in the home environment which are more associated with educational success (Entwistle, 1968; Swift, 1967; Cattell, Sealy and Sweeny, 1966). Miller (1970) found that social class as measured by father's occupation is relatively unimportant as an influential variable in school achievement, rather other factors such as desire for education, intellectual enterprise, confidence and parental support were more influential in predicting school performance.

One variable that has consistently been used in path models to predict education attainment is significant others' influence (SOL). In studies in both North and South America, it has been found to act as a strong mediating factor between the structural variable of social origins and individual attainment in education (Porter, 1976; Sewell et al., 1970; Spencer, 1976).

There is a possible problem of measurement error in this relationship because significant others include parents who reinforce the values of their social class in their encouragement of their children towards various educational levels. And, to a certain extent, friends and teachers reflect similar attitudes. Even though teachers should not be affected by the social origins of their pupils, several studies have shown that teachers display favouritism to high socioeconomic status children (Havighurst and Neugarten, 1967: 84-5; Rosenthal and Jacobsen,
However, Sewell et al., 1970, found no evidence in their sample to confirm this favouritism among teachers towards high socioeconomic status children.

In addition to SOI, other personality factors have been included in path models, such as that created by Porter (see Figure 3). In a reduced model (see Figure 4) showing those factors associated with educational attainment, the impact of ambition and SOI are shown to be more powerful predictors of educational attainment than conformity or creativity (note the negative association); still, these are not as powerful as I.Q. but prove to be more powerful than socioeconomic status (SES).

To conclude this section on factors that affect educational attainment, a mention should be made of two other attitudinal variables that are often used in these studies: achievement motivation and self-concept. There is considerable evidence to suggest that the effect of socioeconomic status on educational attainment is not as much a result of the financial status of the family as the effect of the parents' aspirations for their children's educational and occupational attainment, which then is reflected in their children's aspirations, self-esteem and achievement motivation (Pugh, 1976; Gordon, 1972; Bordua, 1960; Rehberg and Westby, 1967; Sewell and Shah, 1968; Sewell et al., 1970). A further discussion of these will appear later in the section on women, for both achievement motivation and self-concept appear to be highly correlated with sex-related factors.

FACTORS AFFECTING EDUCATIONAL AND OCCUPATIONAL ASPIRATIONS

Social origins, academic performance, personality factors

Since many of the same factors that affect educational and occupational attainment affect aspirations, only a brief summary will be made of the studies that focus more specifically on aspirations. The main
concern in these studies is whether social origin is a better predictor of aspirations than actual academic performance or personality factors such as self-concept or achievement motivation. (These latter appear also to vary according to such ascribed variables as sex, birth order, number of siblings, and spacing between siblings, see Duncan, Featherman and Duncan, 1972).

In studies around the world, educational and occupational aspirations are shown to be significantly and positively related to father's occupational and educational level (Sierra Leone: Windham, 1970; Soviet Union: Yanowith, 1968; United States: Alexander, 1964; Bishop, 1966; Drabick, 1974; Dyer, 1958; Dynes, Clarke & Dinitz, 1956; Gordon, 1972; Haller et al., 1974; Kuvlesky and Ohlendorf, 1965; Larson, 1969; Lower, 1963; Oberle, 1974; Picou and Cosby, 1971; Porter, 1954; Reissman, 1953; Slocum, 1959; Taylor, 1968; Wilson, 1959; England: Allen, 1974; Douglas, 1964; Halsey, 1975; Marriott, 1969; Musgarten, 1974; Japan: Ikeda, 1969; France: Bourdieu and Passeron, 1964; Eicher and Mingat, 1975). The following quote from Yanowith (1968) on the educational plans of Soviet children is typical of this literature:

The children of intelligentsia typically plan to follow an educational path that will permit them to duplicate the occupational status of their parents. The children of relatively unskilled workers and lower level office employees (education less than 7th grade) seek to transcend their parents' occupational status, but expect to do so by moving up one or two notches, i.e. to the status of semi-professional technicians or skilled workers. Relatively few expect to attain intelligentsia status. The latter course is aimed for, however, by a large proportion of youth whose parents are skilled workers, higher-level office employees or semi-professional technicians (parents with an educational attainment level ranging from 8th grade through secondary, specialised school).

There is an opposing viewpoint on the relationship between social class and career aspirations known as the "lower-class value stretch" (Rodman et al., 1974). This notion suggests that lower class members share the dominant values of society but "stretch" those values downward
because they frequently do not have the resources that would enable them to achieve in accordance with the dominant, or middle-class, values. The result is that lower class individuals have a wider range of values, in certain areas, than middle class individuals. Another researcher found that parents' achievements were not related to their occupational aspirations for their children (Hartman, 1968) which indicates that lower class parents might have much higher aspirations for their children but, in their realistic appraisal of the child's situation, do not expect their children to be significantly more mobile than they are. This situation brings out the possible differences between idealistic and realistic aspirations which appear also to be somewhat related to social class and self-concept, such that those who are of a higher social class and have higher self-concept tend to have more congruence between their idealistic and realistic selves and aspirations.

Turning to the influence of academic ability and performance on career aspirations, most studies report that performance in school appears to have a direct effect in the development of educational and occupational aspirations, regardless of the home background of the students and of their sex (Sharp and Kristjanson, 1965; Harrison, 1969; Sewell et al., 1970; and Hauser (1969)). Another substantial and useful predictor of educational and occupational aspirations was mental ability and I.Q. (Kahl, 1953; Sewell et al., 1970; and Sharp, 1965). In addition, one's place within the school structure, by stream or type of school (academic, Grammar or vocational, modern) affects future career plans (Breton, 1970; Liversidge, 1974, Musgrave, 1974; and Rosenbaum, 1975).

The influence of peers on career plans is thought to be more important than that of other significant others (Alexander, 1964; Herriott, 1963; and Picou and Carter, 1976). A further distinction was made by Picou and Carter between peer-modeling and peer-defining
Influences (the former relating to peer behaviour and the latter to peer encouragement) in which they found that peer-modeling had the strongest effects on aspirations. However, they noted that the impact of peer-modeling behaviour on aspirations was significantly greater in rural than in urban communities, with the opposite trend observed for parental influence.

In addition, rural residence appears to influence aspirations and expectations in that rural students have lower horizons than urban students (Drabick, 1974). Further, those who are low in self-esteem and achievement motivation (known as N Achievement) also have lower horizons than other students (Gordon, 1972; Larson, 1969).

SUMMARY OF RESEARCH FINDINGS AND IMPLICATIONS FOR STUDY IN WESTERN AUSTRALIA

Review of Findings

Although the studies reviewed differ substantially from each other, in methodologies used, variables considered and populations sampled, they nevertheless consistently find that educational achievement strongly influences occupational attainment. However, the importance of education diminishes with age as the individual moves through his career, with other factors having increased impact, such as previous job level, personality, performance and the luck of being in the right place at the right time.

Social origins also have a direct impact on occupational attainment but much of this influence is mediated by education. Another factor that tends to operate almost wholly within the school system is ability or academic performance. These predict how long one stays in school but do not seem to have a substantially direct impact on occupational attainment or income.

Certain personality traits, such as self-concept and achievement
motivation, are also affected by one's experience in school and in the home environment so that they do not directly affect occupational attainment but indirectly affect it through education. Similarly, the type of school, home environment, and influence of parents, teachers and friends, (significant others' influence) directly affect educational and occupational aspirations and therefore, indirectly affect occupational attainment.

Although the review of literature on women in the labour force has not been done yet, it might be appropriate at this juncture to look at a path model that is built on the above findings. This model could suitably be applied to both male and female secondary school and tertiary graduates in Western Australia (see Figure 5). The basic model is expected to differ for males and females as some paths may prove to be stronger or weaker for females. Also, an attempt will be made to measure certain factors using a different cluster of variables, for example, mother's occupation in addition to father's, more emphasis on sex-stereotyping of career aspirations and expectations, and the commitment expressed to career and whether or not it would be combined with husband and children.

Path Model and Related Hypotheses

The complex picture presented by the path model in Figure 5 can be more easily assimilated by looking at the immediate antecedents to the dependent variable, first occupation in 1978, then working backward to socioeconomic status (SES) to ascertain the factors that will influence each stage from birth onwards. This particular model depicts the early occupational attainment of tertiary graduates. A similar model would apply to secondary school graduates if one were to terminate the process at tertiary institution attended (or not attended). The hypotheses will be followed by a description of the variables and how they will be measured.

Figure 5
HYPOTHESIS 1: Three factors directly affect first occupation: career expectations, grade point average and tertiary institution attended, such that the higher the grade point average and career expectations and the more prestigious the institution attended, the higher the status of first occupation, SES is hypothesised as having a weak effect on first occupation, over and above its indirect effect through other mediating factors.

HYPOTHESIS 2: The other variables affect occupational status through these three factors as follows:

(a) Career expectations are influenced by career aspirations and SES.

(b) Grade point average is affected by previous academic achievement and such personality variables as SOI (Significant others' influence), N Ach (Achievement motivation) and self-concept.

(c) Tertiary institution attended depends upon previous academic achievement, school attended and career expectations.

HYPOTHESIS 3: Career implications are most affected by SOI, one's self-concept and achievement motivation, that in turn influences actual academic performance and thus has an impact on career aspirations. SES and school attended have their impact through academic achievement and the personality traits.

HYPOTHESIS 4: Academic achievement is affected by school attended, SES and personality traits.

HYPOTHESIS 5: Finally, the school one attends and the various personality traits one adopts are mainly influenced by SES, or home environment (see SES for the various factors included in this category).

Measurement of Variables

Again, starting from the dependent variable, first occupation, and working backwards, the various measures and questions to be used to identify each factor are stated below:

(a) First Occupation: answer to questionnaire to be sent in April 1978 to third year degree graduates of four tertiary institutions in Western Australia (U.W.A., Murdoch, WAIT and Churchlands). It will be coded on a number of factors: general employed/unemployed status, prestige status of job, level of job, size of firm, salary etc.

(b) Grade Point Average: final GPA recorded at each institution and if this is not accessible in all cases, a subjective percentile ranking and the GPA will be obtained from the graduates.

(c) Tertiary Institution Attended: identified for the 3,000 students sampled in above four institutions in October 1977 and for 2,000 secondary graduates in a follow-up questionnaire in April, 1978. This will also include Image of Tertiary Institutions: an attempt will be made to obtain the students' perception of the tertiary institutions in the State and a ranking of their preferences, in addition to the attributes of four institutions (Q.8,9 & 11).
Also, their actual performance ranking of courses and institutions will be obtained from their TISC forms.

(d) Career Expectations: includes realistic assessment of educational and occupational plans, type of career and whether sex-sterotyped, commitment to career, when it was made, information gained about it, certainty of career choice versus other options such as marriage, children or travelling, expected income in ten years' time and reasons for choosing the career and going on for further education (Q.3,5,6,7,11,12,13,14,16,17,181,20,23,27,41,52-55).

(e) Career Aspirations: include idealistic educational and occupational plans and personal goals and desirable income in ten years' time (Q.4,12,22 & 41).

(f) Academic Achievement: this will be obtained from TISC records of Leaving results and marks on the Australian Achievement examination as well as school reports. For tertiary students, a subjective ranking of their position in the high school class by percentiles.

(g) School Attended: as measured by type of school attended; Government, Independent and Catholic, by scholastic average of student body and by socioeconomic status ranking of student body (Q.24).

(h) SOI - Significant Others' Influence: this includes parental, teacher, peer encouragement for further education and then influence on choice of career (Q.6c,7,14 & 15).

(i) N Achievement: this refers to achievement motivation or confidence about one's abilities and the importance of doing well in school or on the job (Q.17,21,45-51).

(j) Self-concept: Rosenberg's ten item, Guttman scale of self-concept, relating mainly to self esteem (Q.39). Other aspects of self-concept involving gender or sex - role concept are included (Q.27,38,40 & 44) and importance of political and religious affiliation (see Q.19).

(k) SES or Home Environment:

Father's Occupation and characteristics (Q.35-37)
Father's Education (Q.33 & 34)
Mother's Occupation (Q.35)
Mother's Education (Q.33 & 34)
Number of Siblings (Q.1 & 2)
Older Sibling's education and work pattern (Q.1)
Birth Order (Q.1)
Country of Origin (Q.30)
Years of Living in Australia (Q.31)
Age of Parents (Q.32)
Family Income (Q.41)
In the next section a most important question will be addressed: Do females have different career patterns than males? Are there new variables that should be considered in a causal model for females? Or should different emphasis be placed on factors previously considered relevant for males? For example, is low self-esteem more common for females than males? And, is high achievement motivation more prevalent among females even though their actual achievements are less notable outside of school? These are a few of the questions that will be pursued.

OCCUPATIONAL MOBILITY OF WOMEN

Although women are found in equal or often greater numbers to men in lower level education and lower level jobs in the work force, their lack of participation at the higher levels in both education and the work force is painfully obvious. In most countries in the world, women form only a small minority of those engaged in higher education (see Table 5) and in higher levels of the labour force (see Table 6). This can be documented at almost every level of higher qualifications (ranging from trade certification to doctorates) and in almost every field (ranging from those that are most male-dominated to most female-dominated). For example, according to the 1971 Australian Census figures, 400 females received higher degrees in education compared to 1,000 males, even though there were many more females who had qualified in education at the diploma level (66,000 females compared to 34,500 males). Further, the second TAFE report (1975) showed that only 6.1 percent of the total Australian student population in 1974 in all trades were female.

Table 5
Although women have begun to enter university in increasing numbers and make up over 50% of the first year enrolments in some parts of the world, their attrition rates are much higher and their retention rates into graduate schools much lower than males. Consequently, they have not had as many opportunities to cross the barriers into higher level professional jobs. Even though some women have become highly qualified in their fields, few have risen to the top of their professions. To illustrate this lack of access to top positions, it was noted by Skertchly (1976) that since 1883 when Miss Bella Guerin became the first woman to graduate in an Australian university, the University of Melbourne has not yet appointed a woman as a full professor. In addition, in 1970 only 7 Chairs out of a total of 639 (or less than one per cent) in Australian universities were occupied by women. (In the United States in 1975, ten per cent of full professors were women). To add to this bleak picture Skertchly remarked that very few women are on Boards of Directors of private companies or governing bodies of tertiary education institutions in Australia. In political institutions the scene is much the same: in 1974 the Australian Senate had only two women out of 60 seats and of the 125 seats in the House of Representatives, there were no women. One could easily document in greater detail the lack of participation by women in the Australian labour force, especially in the more important sectors of it, but for our purposes these few comments paint a clear picture of women's minority status educationally and occupationally.

Why do women enter into education at the primary and secondary level with such dedication and commitment, and even appear to be happier in school than men, but drop out at the tertiary and graduate levels or enter what is often termed less-rigorous programmes such as teaching, nursing or social work? Jackson (1968) reported on several
studies in United States primary and secondary schools that showed
girls having more positive feelings toward school than boys (Tenenbaum,
1940; Sister Josephina, 1959; and Leipold, 1957). But at higher levels
women constitute a minority of U.S. graduate students in all types of
institutions and they are more likely to be found in medium- or low-
quality colleges than in universities or in high-quality colleges.
Even though women received the majority of bachelor's degrees in 15 of
the 33 fields documented by the Carnegie Commission (Feldman, 1974),
in no field did women receive the bulk of the doctorates.

Among the various professional courses, the fields of study that
women choose to enter tend to be lower in prestige. Women are the
majority of graduate students in only 10 fields (German, Spanish, art,
social work, English, French, library science, elementary education,
nursing, and home economics), and at the faculty level they are the
majority in only 3 fields (library science, nursing and home economics —
all applied disciplines strongly associated with femininity). When
men and women were asked to rate academic disciplines on the basis of
how feminine or masculine they were, the stereotyped imagery of the
masculinity or femininity of a discipline was shown to be very strongly
related to the percentage of female participants within the discipline.
(Feldman, 1974). Other studies have confirmed the sexual stereotypes
of occupations (Shinar, 1975; and Backtold, 1975; Gurin and Gaylord, 1976)
although it appears as though women value some female-dominated careers
more highly than men (Haug, 1975).

But this does not tell us why women enter less-prestigious occupations,
or why they are disproportionately under-represented in the administrative
components of their own "female" professions (Grimm and Stern, 1974).
Several decades ago Caplow (1954, 234-5) noted five sex-specific factors
impeding women's careers that are still relevant today:

1. Women generally have discontinuous occupational careers,
interrupted by marriage, childbirth, child-care problems, etc.
2. Women are generally secondary wage earners, supplementing rather than generating family income. This has led to the view that women should therefore be paid less than men.

3. Women tend to be less spatially mobile. Women are thus more limited in accepting employment or moving than are men.

4. The reserve labour force of women is greater than the reserve labour force of men. Since some qualified women are more likely to be out of the labour force because of the discontinuity of their career lines, employers have less difficulty in hiring women. The supply may be greater than the demand, resulting in increased competition for jobs.

5. Women are controlled by sex-specific employment laws. Although these laws may exist under the guise of protecting women, Caplow maintains that they are also used to reduce the effectiveness of women as competitors for men's jobs.

The above five factors (suggested by Caplow) represent an approach that considers the external, structural aspects of society, or put more bluntly, the sex-based discriminatory system, as the major hindrance to women's participation in the labour force. Other researchers argue that the internal, psychological and social conditioning factors are much more inhibiting to women's advancement. Although a systematic review of the more recent literature in this field (which has exhibited a tremendous proliferation in the last ten years) will not be attempted in this paper, a few comments will be made on some of the barriers to women's participation in higher education and factors that have led to their differential career patterns.

FACTORS AFFECTING WOMEN'S PARTICIPATION IN HIGHER EDUCATION

Few researchers adhere to the notion that there are biological differences between the sexes that lead to their differential achievements educationally; however, there are still some who feel that varying motivations and temperaments can be traced back to sex-based
physiological differences. Karen Horney wrote, "Is not the tremendous strength in men of the impulse to create work in every field precisely due to their feeling of playing a relatively small part in the creation of human beings?" (in Bierstedt, 1963:330).

More often these biological differences are thought to be minimal compared to the influences of socialisation. Recent research at the Psychobehavioral Research Unit of Johns Hopkins Medical School enhances the argument of the importance of socialisation over physiological differences. Ten young females, who had been accidentally masculinised in utero, were studied over a period of time. What shaped gender identity among these hermaphrodites was not physiology, but the way they were socialised. Those socialised as male assumed male traits, while those socialised as female assumed female traits (Scarf, 1972).

Feldman (1974) in reviewing this research noted that Komarovsky (1953) feels that girls are socialised to be neater, more restrained, gentler, more emotionally demonstrative, more dependent, and more family-oriented than boys. Maccoby (1970) believes women are socialised to be less analytical in their thinking than men; Turner (1964) states that women are socialised to be less ambitious than men; and Auvenen (1970) maintains that women are socialised to be more aware of their traditional sex role than men. A rather extensive quote from Jessie Bernard (1971) suggests ways in which women might be encouraged to be more creative and risk-taking:

If we loosened girls' ties to their mothers' apron strings, if we encouraged them to fend for themselves, if we cultivated independence and self-reliance, if we rewarded their efforts to satisfy their curiosity, if we stimulated probing intelligence and vetoed easy answers, if we discouraged feminine submission, frowned on unthinking conformity to social rules, did not emphasize pleasing others so much, then the achievement of women would be greater .... The supportive function for which the sweet girl is being processed does not make for a high level of creativity.
These few quotes suggest that women and men have somewhat polarised personality traits (women are dependent and men are independent, women are intuitive and men are analytical); there is some evidence recently, however, to suggest that this polarised perception of sex-related traits is invalid. For years, there was the notion that the more feminine a girl was, the healthier she was and the more masculine a boy was, the more normal or healthier he was. Yet there are many traits attributed to both males and females that are positive and should be acquired by members of both sexes (such as sensitivity for males and independence for females). Bem (1975), among others, has begun to look at these "androgynous" characteristics and has developed a scale to measure the characteristics of males and females who exhibit both masculine and feminine traits, such as being both yielding and assertive. (Whitehurst, 1976, also discovered a tendency towards an "androgynous" ideal among college men and women). Bem found that individuals who are more androgynous are also more flexible and able to exhibit a wider range of emotion. In a similar finding, Slotnick and Bleiberg (1974) found that highly authoritarian subjects manifested more rigid occupational sex-role typing than did subjects low in authoritarianism. It also appears that both men and women lower in educational level are more likely to sex-stereotype occupations. Another study found that women who had more masculine traits were higher in ability (I.Q.); however, they were lower in actual academic achievement (class standing) than the more traditional women (Doherty and Culver, 1976). In addition, Maccoby (1966) found that boys and girls who are more sex typed have lower overall intelligence, lower spatial ability and lower creativity.

Winkler (1976) produced findings on Australian women that contradicted earlier American (Steinmann and Fox, 1974; Broverman et al., 1972) and Australian studies (Bradley and Mortimer, 1972/73; Edgar, 1972;
Mfrcer, 1975) that had indicated that students define male and female roles in polarised terms. Her results suggested that Australian university women do not feel any strong sex-role conflict between being feminine and displaying the level of intelligence demanded by the academic setting. This also contradicts other studies which have found that Australian high school and university students hold a general stereotype which devalues successful competitive achievement by women (Feather and Raphelson, 1974; Feather and Simon, 1975).

Further, as stated in these concluding remarks by Winkler, her findings contradict the popular image of women's beliefs in Australia:

The popular press in Australia has frequently voiced the belief that a woman should never be more intelligent than her 'man' (see, for example, Sampson's (1973) and Wright's (1973) content analyses of the Women's Weekly). The female students in this sample might possibly still believe that it would be preferable to have a boyfriend/husband who was more intelligent than they; there is no evidence, however, that they have adopted the belief that women should be less intelligent or rational than men. (Winkler, 1976:289).

Winkler's study suggests that women may be as achievement-oriented as men in Australia. Unfortunately, there have been few studies done in either Australia or other countries that would indicate whether achievement orientation is sex-related. In reviewing the American research on achievement motivation, Horner (1970) noted the scarcity of studies on women and the confusing results that have been collected on female subjects, exhibiting inconsistency with the existing theory of achievement motivation, with the findings for men, and even internally with one another. She has suggested an explanation for this inconsistency and has gained a rather strong following in her search to document women's "motive to avoid success" or "fear of success" in achievement-oriented situations. (Breedlove and Cicirelli, 1974; Connell and Johnson, 1970; Feather, 1975; Feather and Simon, 1975, and Mahone, 1960).

In a review of studies in this area, Maccoby and Jacklin (1974) have
found that women are equal to men in overall intellectual and academic ability and in almost all measures of achievement motivation and overall self-esteem they found an important sex difference in the achievement-related characteristic of self-confidence. That is, these authors concluded that self-confidence, defined in terms of both performance expectancies and self-evaluations of abilities and completed performances, is lower among women than among men. Lenny (1977) has questioned their overall conclusion as stated: "Clearly, college men are more likely than college women to expect to do well, and to judge their own performance favourably once they have completed their work". (Maccoby and Jacklin, 1974:154). Lenny concluded from her review of recent work that, "it seems unlikely that women's self-confidence will be found to be consistently low across different achievement situations. The evidence .. .. hints strongly that women's self-confidence is actually discriminative and situationally responsive". (1977:12). Spence (1974) has also questioned the interpretation of Horner's data on "motive to avoid success" and suggests that a more complex set of attitudes, expectations, and personality characteristics are being measured (1974).

There is equally contradictory evidence in regard to females' self concept. Wylie (1968) concluded that, among American children from nine to thirteen years of age, girls' self-concepts are more favourable than boys', while thereafter no clear trends are obtained. Homal, Juhasz and Juhasz (1975) reported low self-esteem among American college women but did not compare them with men. A recent Australian study, with data collected from a large sample of Sydney adolescents aged from eleven to twenty, found a consistently significant sex difference in self-esteem in favour of boys (Connell et al., 1975). Smith (1975) reported a similar sex difference amongst fifth and sixth grade pupils in private Sydney schools.
show that they reject the dichotomy between work and marriage. Virtually all expect to and want to marry (Angrist, 1972). A study of student nurses found that sixty per cent felt that having a career was important, but only one-fourth said they would be very much displeased if they should marry and never work at nursing (Goldsen and White).

There appears to be a low level of occupational commitment among women. About seventy per cent of female teachers view teaching only as an adventure (Mason et al., 1959). Females generally are committed to lower level occupational jobs, including those in the professions, and are more narrowly clustered in two categories: middle professional (50 to 66 per cent) and clerical (20 per cent) compared to a wider dispersion for males (Butler, 1975). It also appears that both men and women share an ideology that is antagonistic toward the idea of women in high-status jobs (Keniston and Keniston, 1964).

What are some of the barriers to women entering higher level jobs and those that are currently thought of as male-dominated? Rossi, (in Bardwick, 1972) indicates that the perceived reasons for the low representation of women in medicine, engineering and science are:

1. A job in this field is too demanding for a woman to combine with family responsibilities;
2. Women today want to work only occasionally and on a part-time basis, which they seldom do in this field;
3. Most parents discourage their daughters from training for such a field;
4. Men in this field resent women colleagues;
5. To enter this field before marriage restricts a woman's chance to marry;
6. Women are afraid they will be considered unfeminine if they enter this field;
7. Such a job requires skills and characteristics women do not have. (1977:77).

Peterson (1964) noted the rather defensive quality of the myths
used to explain the current occupational differentiation by sex. Women are supposedly more likely to be sick, to be absentees, and to quit their jobs. In fact, men lose more work days through illness than women do, the sex rates for absenteeism are identical, and only the rates for quitting show women markedly higher. Even this latter result cannot be used to defend keeping women out of high status jobs, for the quit rates turn out to be purely a function of the skill level of the job. When the researchers control for skill level, the sex difference disappears.

Those women who have tried to gain entrance to the prestigious, male-dominated professions, find many externally set limits to their career advancement. Epstein (1970) noted that one of the institutionalised channels of recruitment and advancement that is not available to women is the protégé system, being trained, groomed and sponsored for promotion by your superior, for the latter are usually males and do not take their female colleagues seriously.

Another interesting area of research is the determination of characteristics that identify career saliency, or commitment to enter a specific career, such as engineering. Why do some women choose to be housewives and others doctors? Or why do some women decide to pursue a career at all? Angrist and Almquist (1970, 1971) were curious about these questions and set up a longitudinal study of the graduates from Carnegie-Mellon University in 1969 to look at, among other things, the relationship between career salience and sex role models. They found that the crucial role models for career salient women are those who explicate a broad life style encompassing career and family. In addition, they indicated other factors which differentiate career salient women from those who are non-career salient:

- Career salient women more often have working mothers, tend to hold a variety of part-time and summer jobs during college, select male-dominated occupations, and see themselves as more
influenced by teachers and occupational role models than by family and peers. The non-career salient women more often are sorority members, date steadily or are engaged, have mothers active in leisure pursuits, and select traditional women's occupations. (Angrist, 1972:88).

Others have concurred with these findings but recently found a rise in the number of career salient women from the 30 per cent of freshmen women that Angrist reported at Carnegie Mellon to 43 per cent at Kansas State University (Erikson and Nordin, 1974). They also found a higher percentage of career salient women who were from urban backgrounds and had mothers who worked. Baruch (1972) found that having working mothers was a good predictor in determining career-salient women, but in addition the mothers had to find their jobs satisfying and be successful in integrating work with family life. Simpson and Simpson (1961) in a study of occupational choice among career-oriented college women indicated that those who are more career-salient will stress intrinsic features of work and also will be more influenced by teachers, professors and people in intended career rather than by parents, relatives and peers. Other factors that were related to career salience were making a definite career choice and making the decision at a younger age. Richardson (1975) reported that women who were high in self-esteem were more likely to report a congruent relationship between self and career concepts and were more likely to be career-oriented.

Finally, even when women do enter careers, there appears to be wage discrimination for equal status jobs. Suter and Miller (1973) found that the income return relative to increases in education and occupational status for their sample of career women was only half that of males. This suggests that while encouragement of female investment in higher education and their pursuit of higher status occupations will affect the earnings of females relative to other females, a large gap in the earnings of males and females will remain. One interpretation
of these findings is that the need for social structural change (change in the opportunity structure) is as great or greater than the need for individual change (Ayella and Williamson, 1976).

POLICY IMPLICATIONS

It is obvious from this review of the literature on educational and occupational mobility that two of the most disadvantaged groups in access to higher levels of education and occupation are members of the lower class and females. Whether this disadvantage is a result of a lack of educational opportunity, structural obstacles that stand in their way or deeper-seated attitudes and personality traits rooted in early child-rearing patterns and societal conditioning is difficult to disentangle. Moreover, there may be attitudinal factors that are located outside of the individuals concerned, for example, in those members of the male ruling class who might have every desire to keep women and the lower classes in subjugated positions. Thus, no matter what individual changes occur, the overall situation will be one in which the ruling class will make sure that their advantage is maintained. Despite this rather pessimistic view, there are some obvious changes that could be initiated that may result in increasing opportunities for these two sectors of the population.

Blandy and Goldsworth (1977) suggested two short-term measures to equalise educational opportunity for girls in South Australia. The first would be to reserve a large proportion of scholarships for girls exclusively, to be awarded at the end of fourth year. The second would be to provide much more extensive vocational counselling to girls. They also mentioned that in the longer run, measures should be taken to diversify the occupational opportunities for girls. Partly, diversification depends upon employers hiring women for jobs previously reserved for men, and partly it depends on women increasing their occupational
aspirations. Increasing aspirations is linked to Blandy's and Golds­
worthy's remark that more extensive vocational counselling be given
to girls. Other researchers have suggested that audio-visual aids with
female models in a variety of positions be used so that females not be
limited in their role-modeling potential. This concept should also be
extended to having more "live" female role models in administrative
positions, and as career guidance counsellors in schools. In this
regard, the report by the Education Department on Males and Females in
the State Education System of Western Australia (MacKinnon, 1976)
suggested that "all teachers, particularly women, be made aware of the
increased availability of promotional positions and be encouraged to
acquire the relevant qualifications". They also noted that private
employers and Government Departments should be encouraged to present
material in schools which illustrates the large number of occupations
equally suitable for either sex.

There should also be changes in both the formal and hidden
curricula of schools which Humphreys (1975) pointed out teach material
almost exclusively concerned with the male realm of action and experi­
ence. The hidden curriculum teaches that men hold positions of
authority, women subordinate positions, that boys are stronger and more
important than girls, and that boys must be educated for a career, girls
for the role of wife and mother. Another study pointed out that the
textbooks used in W.A. primary schools encourage the development of
limited sex-specific images of individuals (Hutchinson, Gwynne and
Justins, 1975). Material which is considered to be stereotyped should
be progressively withdrawn from use and be replaced by acceptable
material. Also, females should not be restricted in the type of
courses that they might enter and single-sex courses, such as woodworking
and home economics, should be gradually made co-educational.
At the tertiary level there is a need to make both males and females more conscious of the sex-related biases in society. This could be done in all courses but more specific courses are generally needed to introduce students to the complexity of the issues. In this regard, several universities and CAE's have introduced Women's Studies units in Australia but there needs to be more encouragement for courses to be developed in a number of faculties. Also, it is important that those involved in changing societal attitudes toward women recognise that to impose the standard male career patterns on females is a form of inequality. Salary and working conditions should be equal but there are special problems that will continually concern women and will have to be treated differently from men. Women's child-bearing and related social roles must be taken into account by employers, unions and government in the arrangement of working hours, in the flexibility of career patterns, in provisions for child care and in other innovations in the institutional structures of education and work. The following recommendations from OECD demonstrate the type of measures needed if women are going to be fully integrated into the work force and satisfied with their positions:

A co-ordinated series of measures in education, in the labour market and in the community at large is needed: equal access to educational programmes for both sexes, particularly at the higher levels; increased adult training and retraining opportunities for women, particularly for women wishing to re-enter employment when their children are no longer at the early childhood stage; adequate pre-school education and child-care facilities if women with young children are to have the option of entering employment or continuing in it; more part-time jobs and more flexible time-schedules and career patterns. (OECD, Education and Working Life in Modern Society, 1975:16).

The same type of active policy needs to be applied to members of the lower class; for them, the same maxim also adheres: "the equal treatment of unequals is unequal". Many disadvantaged persons have unstable employment backgrounds and limited education and among these
are many young people who tend to be the "last in" and "first out" of employment. They lack the formal credentials to compete for jobs and the specific training needed to perform other than low-skilled work. Again, the OECD report suggested that employers and education institutions need to be encouraged to realise that it is sometimes the more able who follow non-routine patterns through education and into employment.

Some of the same measures noted to redress the balance for women that need to be considered for lower class members as well include suitable role-models from the lower class in administrative and counselling positions in school and in employment. Those lower class members who have 'made it' need to be trained to be consciously aware of the barriers that lower class members need to cross in order to be acceptable in middle class society. Even though they have crossed those barriers themselves, they need to consider in greater depth how those same experiences will be felt by other disadvantaged people.

In order to facilitate the employment of capable individuals who may have had limited education, there needs to be a reduced emphasis on certificates and diplomas. Cumulative records of individual performances would in many instances be fairer and more effective indicators of the potential of individuals.

For those who would like to continue their education after many years out of school, there should be active measures taken to encourage them and to make available more opportunities for them to enter educational institutions even though they do not have the prerequisite qualifications. Action in this area has already been taken by many institutions in regard to mature age entry; however, often there are still examination-type requirements that apply to mature age entry as
well. Several countries have shown the way by not requiring any further examinations or even a certain number of years in school. In Denmark, for example, entrance into post-secondary institutions is open to anyone who has reached the age of 25 and who desires to enrol. This policy is predicated on the assumption that a person's experience in employment and their motivation to continue their education are prerequisites enough for giving them a place in post-secondary education.

These general policy suggestions do not in any way cover all the potential measures that could be enacted to help the disadvantaged classes and women. Moreover, in order for any action to be considered by those in policy-making positions, there has to be increased awareness on their part that disadvantaged members of society need to be given increased opportunities and encouragement before they will be able to fully take their rightful place in society. This implies a more active campaign than the rather passive stance that exists in Australia today which allows females and lower-class members into the higher ranks (if they can make it on their own), but does not encourage or assist them through programmes, such as those initiated in the United States under Affirmative Action Legislation.
Figure I. Basic Causal Model of the Process of Status Attainment

Source: Blau and Duncan (1967:170); coefficients on right, one-headed arrows are net regression coefficients in standard form; coefficient on curved, two-headed arrow is a coefficient of correlation.

*The coefficients in this model refer only to those male graduates whose fathers were farmers. (Sewell, along with others, studied many different subgroups in this sample of high school graduates.) He traced them seven years after they graduated. The $R^2$ for this model is .34.

FIGURE 2. SEWELL'S MODEL
Occupational Attainment Process Among 1957 Wisconsin High School Male Graduates*

FIGURE 3. RELATION OF DESTINATION POSITION TO ITS ANTECEDENTS (WHITES ONLY)

Source: Porter, 1976
FIGURE 4
PORTER'S REDUCED MODEL: FACTORS AFFECTING EDUCATION

Source: Porter, 1976
FIGURE 5

PATH MODEL FOR EARLY OCCUPATIONAL ATTAINMENT AMONG WESTERN AUSTRALIAN SECONDARY & TERTIARY GRADUATES
## TABLE 1

Zero Order Correlation Coefficients Measuring Father's Occupation to Son's Educational and Occupational Attainment and Son's Education to His Occupational Attainment in Industrial and Non-Industrial Countries for Adult Males

<table>
<thead>
<tr>
<th>Principal Investigators</th>
<th>Country</th>
<th>Location</th>
<th>Date</th>
<th>Father's Occup. to Son's Education</th>
<th>Father's Occup. to Son's Occup.</th>
<th>Son's Education to Son's Occup.</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industrial Countries</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duncan &amp; Hodge</td>
<td>U.S.</td>
<td>Chicago</td>
<td>1951</td>
<td>.34&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.30</td>
<td>.55&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1,105</td>
</tr>
<tr>
<td>Elder</td>
<td>U.S.</td>
<td>Oakland</td>
<td>1958</td>
<td>.26</td>
<td>.23</td>
<td>.66</td>
<td>69</td>
</tr>
<tr>
<td>Blau &amp; Duncan</td>
<td>U.S.</td>
<td>National</td>
<td>1962</td>
<td>.43</td>
<td>.41</td>
<td>.60</td>
<td>20,000</td>
</tr>
<tr>
<td>Bajema</td>
<td>U.S.</td>
<td>Kalamazoo</td>
<td>1962</td>
<td>-</td>
<td>-</td>
<td>.63</td>
<td>437</td>
</tr>
<tr>
<td>Treiman &amp; Terrell</td>
<td>U.S.</td>
<td>National</td>
<td>1962</td>
<td>.30</td>
<td>.27</td>
<td>.53</td>
<td>10,479</td>
</tr>
<tr>
<td>Duncan &amp; Featherman</td>
<td>U.S.</td>
<td>Detroit</td>
<td>1966</td>
<td>.34</td>
<td>.30</td>
<td>.60</td>
<td>887</td>
</tr>
<tr>
<td>Hauser &amp; Featherman</td>
<td>U.S.</td>
<td>National</td>
<td>1972</td>
<td>.47</td>
<td>.39</td>
<td>.65</td>
<td>33,500</td>
</tr>
<tr>
<td>Crowther</td>
<td>Britain</td>
<td>National</td>
<td>1956-58</td>
<td>.43</td>
<td>.36</td>
<td>-</td>
<td>7,991</td>
</tr>
<tr>
<td>Treiman &amp; Terrell</td>
<td>Britain</td>
<td>National</td>
<td>1963</td>
<td>.25</td>
<td>.36</td>
<td>.39</td>
<td>536</td>
</tr>
<tr>
<td>Jones</td>
<td>Australia</td>
<td>National</td>
<td>1965</td>
<td>.18</td>
<td>.29&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.43</td>
<td>1,441</td>
</tr>
<tr>
<td>Svalastoga</td>
<td>Denmark</td>
<td></td>
<td>1965</td>
<td>-</td>
<td>.45</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cummings &amp; Naoi</td>
<td>Japan</td>
<td>National</td>
<td>1968</td>
<td>.21</td>
<td>.20</td>
<td>.41</td>
<td>1,964</td>
</tr>
<tr>
<td>Diez-Nicolás</td>
<td>Spain</td>
<td>Madrid</td>
<td>1969</td>
<td>.49</td>
<td>.62</td>
<td>.59</td>
<td>430</td>
</tr>
<tr>
<td>Douglas</td>
<td>Britain</td>
<td>National</td>
<td>1963</td>
<td>.32</td>
<td>-</td>
<td>-</td>
<td>1,872</td>
</tr>
<tr>
<td>Muller</td>
<td>W.Germany</td>
<td>Konstanz</td>
<td>1969</td>
<td>.50</td>
<td>.48</td>
<td>.78</td>
<td>398</td>
</tr>
</tbody>
</table>

| **Non-Industrial Countries** |         |          |        |                                   |                                 |                                 |      |
| Iutaka & Bock           | Brazil  | 6 SE Cities | 1959-60| -                                 | -                               | .51                             | 1,951 |
| Tumin & Feldman         | Puerto Rico |         | 1961  | .44                               | .21                             | -                               | 627  |
| Kahl                    | Brazil  | Cap/Towns | 1965  | .58                               | .49                             | .72                             | 740  |
| Kahl                    | Mexico  | Cap/Towns | 1965  | .58                               | .50                             | .65                             | 740  |
| Balán, Browning, Jelin  | Mexico  | Monterrey | 1966  | -                                 | .49                             | -                               | 336  |
| Lin & Yauger            | Costa Rica | 2 Provinces | 1971  | .13                               | .42                             | .21                             | 455  |

<sup>a</sup> Averaged over different age groups

<sup>b</sup> Averaged correlation between oldest and youngest sons
TABLE 2

Zero Order Correlation Coefficients Measuring Father's Occupation to Son's Educational and Occupational Attainment and Son's Education to His Occupational Attainment in Industrial and Non-Industrial Countries for Secondary School and Tertiary Graduates

<table>
<thead>
<tr>
<th>Principal Investigators</th>
<th>Country</th>
<th>Location</th>
<th>Date</th>
<th>Father's Occup. to Son's Education</th>
<th>Father's Occup. to Son's Occup.</th>
<th>Son's Education to Son's Occup.</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Countries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kerckhoff</td>
<td>U.S.</td>
<td>F. Wayne</td>
<td>1963</td>
<td>.40</td>
<td>.41</td>
<td>-</td>
<td>396</td>
</tr>
<tr>
<td>Porter</td>
<td>U.S.</td>
<td>National (Project Talent)</td>
<td>1965</td>
<td>.30</td>
<td>.20</td>
<td>.49</td>
<td>14,891</td>
</tr>
<tr>
<td>Sewell, Haller, Ohlendorf</td>
<td>U.S.</td>
<td>Wisc. Total</td>
<td>1964</td>
<td>.38</td>
<td>.30</td>
<td>.61</td>
<td>4,388</td>
</tr>
<tr>
<td>Non-Industrial Countries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hansen &amp; Haller</td>
<td>Costa Rica</td>
<td>Turrialba</td>
<td>1968</td>
<td>.13</td>
<td>.01</td>
<td>.58</td>
<td>103</td>
</tr>
<tr>
<td>Currie</td>
<td>Uganda</td>
<td>National</td>
<td>1972</td>
<td>.08</td>
<td>.18</td>
<td>.48</td>
<td>463</td>
</tr>
</tbody>
</table>
Estimates of Ratio of Chances of Access to Higher Education for Child From Professional or Managerial Background. Relative to One From Working-Class Background.

<table>
<thead>
<tr>
<th>Country</th>
<th>About 1960</th>
<th>Year</th>
<th>Later Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>7:1</td>
<td>1966</td>
<td>8:1</td>
</tr>
<tr>
<td>France</td>
<td>83:1</td>
<td>1968</td>
<td>18:1</td>
</tr>
<tr>
<td>Germany</td>
<td>41:1</td>
<td>1970</td>
<td>15:1</td>
</tr>
<tr>
<td>Greece</td>
<td>8:1</td>
<td>1970</td>
<td>3:1</td>
</tr>
<tr>
<td>Italy</td>
<td>36:1</td>
<td>1967</td>
<td>18:1</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>72:1</td>
<td>1972</td>
<td>28:1</td>
</tr>
<tr>
<td>Netherlands</td>
<td>56:1</td>
<td>1970</td>
<td>27:1</td>
</tr>
<tr>
<td>Norway</td>
<td>7:1</td>
<td>1970</td>
<td>7:1</td>
</tr>
<tr>
<td>Spain</td>
<td>66:1</td>
<td>1970</td>
<td>25:1</td>
</tr>
<tr>
<td>U.K.</td>
<td>8:1</td>
<td>1971</td>
<td>2:1</td>
</tr>
<tr>
<td>Yugoslavia</td>
<td>5:1</td>
<td>1969</td>
<td>3:1</td>
</tr>
<tr>
<td>U.S.</td>
<td>8:1</td>
<td>1969</td>
<td>3:1</td>
</tr>
</tbody>
</table>

TABLE 3
Source: Levin, 1976
Fathers' Occupations of Full-time Tertiary Students

<table>
<thead>
<tr>
<th>Job Category</th>
<th>Uni.</th>
<th>C.A.E.</th>
<th>Uni. Ed.</th>
<th>C.A.E. Ed.</th>
<th>Males between 45-54 %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Professional/Technical</td>
<td>32.6</td>
<td>26.1</td>
<td>24.5</td>
<td>24.3</td>
<td>7.5</td>
</tr>
<tr>
<td>Administrative</td>
<td>19.9</td>
<td>18.2</td>
<td>15.4</td>
<td>12.8</td>
<td>12.4</td>
</tr>
<tr>
<td>Clerical</td>
<td>4.9</td>
<td>5.2</td>
<td>6.9</td>
<td>5.0</td>
<td>6.8</td>
</tr>
<tr>
<td>Sales</td>
<td>5.4</td>
<td>5.4</td>
<td>5.1</td>
<td>5.4</td>
<td>5.6</td>
</tr>
<tr>
<td>Farming/Mining</td>
<td>7.2</td>
<td>9.3</td>
<td>8.5</td>
<td>13.7</td>
<td>10.9</td>
</tr>
<tr>
<td>Communication/Transport</td>
<td>3.8</td>
<td>5.2</td>
<td>7.5</td>
<td>7.2</td>
<td>7.6</td>
</tr>
<tr>
<td>Tradesmen/Labourers</td>
<td>13.7</td>
<td>18.0</td>
<td>21.3</td>
<td>21.0</td>
<td>39.9</td>
</tr>
<tr>
<td>Service, Sport and Recreation</td>
<td>3.0</td>
<td>1.9</td>
<td>3.1</td>
<td>3.1</td>
<td>4.3</td>
</tr>
<tr>
<td>Armed Forces</td>
<td>0.6</td>
<td>0.8</td>
<td>0.0</td>
<td>0.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Not in Work Force and/or no information</td>
<td>9.0</td>
<td>10.0</td>
<td>7.7</td>
<td>7.3</td>
<td>4.4</td>
</tr>
</tbody>
</table>

N = 1,513 521 389 881 674,427

TABLE 4

Source: Beighton and Gallagher, 1976
Female Enrolment in Higher Education as Percentage of Total Enrolment in Higher Education.

<table>
<thead>
<tr>
<th>Country</th>
<th>Total - 1970</th>
<th>University - 1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>28.6</td>
<td>24.8</td>
</tr>
<tr>
<td>Denmark</td>
<td>36.4</td>
<td>31.9</td>
</tr>
<tr>
<td>Finland</td>
<td>48.6</td>
<td>47.6</td>
</tr>
<tr>
<td>Germany</td>
<td>24.1</td>
<td>29.6</td>
</tr>
<tr>
<td>Greece</td>
<td>30.4</td>
<td>31.4</td>
</tr>
<tr>
<td>Italy</td>
<td>38.5</td>
<td>38.3</td>
</tr>
<tr>
<td>Netherlands</td>
<td>27.5</td>
<td>19.6</td>
</tr>
<tr>
<td>Norway</td>
<td>37.6</td>
<td>28.6</td>
</tr>
<tr>
<td>Portugal</td>
<td>44.7</td>
<td>47.9</td>
</tr>
<tr>
<td>Spain</td>
<td>28.8</td>
<td>26.4</td>
</tr>
<tr>
<td>Sweden</td>
<td>n.a.</td>
<td>37.2</td>
</tr>
<tr>
<td>Turkey</td>
<td>19.7</td>
<td>19.9</td>
</tr>
<tr>
<td>U.K.</td>
<td>34.0</td>
<td>27.3</td>
</tr>
<tr>
<td>Yugoslavia</td>
<td>39.5</td>
<td>37.0</td>
</tr>
</tbody>
</table>

**TABLE 5**

Source: Levin, 1976
### Table 6: Permanent Appointments in the Australian and West Australian Public Services.

<table>
<thead>
<tr>
<th>Division</th>
<th>Women</th>
<th>Men</th>
<th>Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australian (1973)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Division</td>
<td>0</td>
<td>34</td>
<td>84% Graduates</td>
</tr>
<tr>
<td>Second Division</td>
<td>4</td>
<td>1,122</td>
<td>75% Bachelor Degree</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10% Higher Degree</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>59% Bachelor Degree</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15% Diploma</td>
</tr>
<tr>
<td>Third Division</td>
<td>12,834</td>
<td>59,401</td>
<td>0.4% Higher Degree</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14% Bachelor Degree</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.5% Diploma</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.2% Higher Degree</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15.5% Bachelor Degree</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10% Diploma</td>
</tr>
<tr>
<td><strong>West Australian (1974)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Division</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Administrative Division</td>
<td>0</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td>Professional Division</td>
<td>204</td>
<td>2,116</td>
<td></td>
</tr>
</tbody>
</table>

Source: Skertchley, 1976
REFERENCES

Alexander, C. Norman (Jr.), and Ernest Q. Campbell

Allen, S.

Almquist, Elizabeth M. and Shirley S. Angrist

Almquist, Elizabeth M. and Shirley S. Angrist

Anderson, C. Arnold

Anderson, D.S. and John S. Western

Angrist, Shirley S.

Astin, A.W., M.R. King, J.M. Light and G.T. Richardson

Auvænen, Riita

Ayella, Mary Elizabeth and John B. Williamson

Backtold, M.L.

Bajema, Carl Jay
Balán, Jorg, Harley L. Browning and Elizabeth Jelin
1973 Men in Developing Society: Geographical and Social Mobility in Monterrey. Austin and London; University of Texas Press.

Balson, M.

Bardwick, Judith M. and Elizabeth Douvan

Baruch, Grace K.

Beighton, F.C.L. and A.P. Gallagher

Bem, Sandra L.

Berg, Ivar

Bernard, Jessie

Bernstein, Basil

Beswick, David G.

Bierstedt, Robert

Bishop, Carol et al.

Blandy, Richard and Tony Goldsworthy
Blau, Peter M. and Otis Dudley Duncan, with the collaboration of Andrea Tyree

Bordua, David J.

Boudon, R.

Bourdieu, P. and J.C. Passeron

Bradley, D. and M. Mortimer

Breedlove, Carolyn J. and Victor G. Cicirelli

Breton, R.

Broom, Leonard, and F. Lancaster Jones

Broverman, I.K. et al.,

Butler, Richard R.

Caplow, Theodore

Carnoy, Martin

Cattell, R.B., A.P. Sealy and A.B. Sweeney
1966 "What can personality and motivation source trait measurements add to the prediction of school achievement?" British Journal of Educational Psychology,36:280-295.
Central Advisory Council on Education  

Charters, W.W., Jr.  

Coleman, James S. et al.  

Con nell, D.M. and J.E. Johnson  

Connell, W.F. et al.  
1975 Twelve to Twenty. Sydney: Hicks Smith.

Crowther Report  

Cummings, William K. and Atsushi Naoi  

Currie, Janice K.  

Davis, J.A.  

Diez, Nicholas J. et al.  

Doherty, Edmund G. and Cathryn Culver  

Douglas, J.W.B.  

Douglas, J.W.B., J.M. Ross and H.R. Simpson  

Drabick, Lawrence  
Duncan, Beverly  

Duncan, Otis Dudley and R. Hodge  

Duncan, Otis Dudley, David L. Featherman and Beverley Duncan  

Dyer, William G.  

Dynes, Russel R., Alfred C. Clarke and Simon Dinitz  

Eckland, B.K.  

Edgar, D.E.  

Eicher, Jean Claude and Alain Mingat  

Elder, G.H. (Jr.)  

Entwistle, N.J.  

Epstein, Cynthia F.  

Erickson, Linda G. and Margaret L. Nordin  
1974 "Sex-role ideologies and career salience of college women," A preliminary report. Center for Student Development, Kansas State University, Manhattan, Kansas.

Flegerline, Ingemar  
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title and Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feather, N.T. and Alfred C. Raphelson</td>
<td>&quot;Fear of success in Australian and American student groups: Motive or sex-role stereotype?&quot; Journal of Personality, 42:190-201. 1974</td>
</tr>
</tbody>
</table>
Gurin, Patricia and Carolyn Gaylord

Haller, Archibald O.

Haller, Archibald O., Luther B. Otto, Robert F. Meier and George W. Ohlendorf

Haller, Archibald O. and Alejandro Portes

Halsey, Albert H.

Hansen, David O. and Archibald O. Haller
"Status Attainment of Costa Rican Males: A Cross-Cultural Test of a Model," Rural Sociology, 38, No.3 (Fall) 266-267.

Harrison, Forest

Hartman, John J. et al.
1968 "Relationship of selected Socio-demographic Characteristics and Parental Occupational Aspirations for their Children."
Paper presented at Rural Sociological Society Meeting, Boston, Massachusetts, August.

Haug, Marie R.

Hauser, Robert M.

Hauser, Robert M.

Hauser, Robert M.
1971 Socioeconomic Background and Educational Performance. Washington, D.C; American Sociological Association, Rose Monograph Series.

Hauser, Robert M. and David L. Featherman

Havighurst, Robert J.
Havighurst, Robert J. and Bernice L. Neugarten

Herriott, R.E.

Heyns, Barbara

Holsinger, Donald B.

Homal, Geraldine M., Suzanne Juhasz and Joseph Juhasz

Horner, Matina S.

Howe, F. and C. Ahlum

Humphreys, D.

Hunt, F.J.

Husén, Torsten

Husén, Torsten

Husén, Torsten

Husén, Torsten

Hutchinson, P., A. Gwynne and E. Justins
Ikeda, Hideo

Ito, Sugiyama and E. Wilbur Bock

Jackson, Philip W.

Jacobson, Barbara and John M. Kendrick

Jencks, Christopher et. al.

Jones, F. Lancaster

Kahl, Joseph A.

Kahl, Joseph A.

Kenniston, Ellen and K. Keniston

Kerckhoff Alan C.

Kohn Melvin L. and Carmi Schooler

Komarovsky, Mirra

Kuhn, T.S.

Kuvelsky, William P. and George W. Ohlendorf
Larson, Wayne L. and Walter Slocum

Leipold, L.E.

Lenney, Ellen

Levin, Henry M.

Lin, Nan and Daniel Yauger

Lipset, Seymour Martin

Lipset, Seymour Martin and Reinhard Bendix

Liversidge, William

Lowe, James L.

Maccoby, Eleanor

Maccoby, Eleanor

Maccoby, Eleanor and C.N. Jacklin

MacKinnon, G.C.
1976 Males and Females in the State Education System of Western Australia, Report to the Minister for Education, July, Education Department of Western Australia.
Mahone, C.H.  

Marriott, Stuart  

Mason, W.S., R.J. Dressel and R.K. Bain  

McNally, Gertrude B.  

Mercer J.  

Miller, Gordon W.  

Miller, S.M.  

Müller, Walter  

Müller, Walter and Karl Ulrich Mayer  

Musgrave, P.W.  

Oberle, Wayne, et. al.  

O.E.C.D.  

Olson, Jerry B.  

Peschet, Jules  

Peterson, Esther,  
Pfaff, Martin and Gerhard Fuchs with the assistance of Peter Koppl  

Picou, J. Steven  

Picou, J. Steven, Michael T. Carter  

Picou, J. Steven, and Arthur J. Cosby  

Plowden Report  

Porter, James N.  

Porter, Richard J.  

Prewitt, Kenneth  

Psathas, George  

Pugh, M.D.  

Radford, W.C.  
1962 School Leavers in Australia. Melbourne: ACER.

Rehberg, Richard A. and David L. Westby  

Reissman, Leonard  

Richardson, Mary Sue  
Rodman, Hyman et. al.  

Rosenbaum, James E.  

Rosenthal, R. and L. Jacobsen  

Rossi, Alice S.  

Sampson, S.  

Scarf, Maggie  

Sewell, William H., Archibald O. Haller and George W. Ohlendorf  

Sewell, William H., Archibald O. Haller and Alejandro Portes  

Sewell, William H. and Robert M. Hauser  

Sewell, William H. and Robert M. Hauser  

Sewell, William H. and Vimal P. Shah  

Shafer, Susanne M.  

Sharp, Emmet F. and G. Albert Kristjanson  
Shinar, Eva H.  

Simmons, John  

Simpson, R.L. and Simpson I.  

Sister Josephina  

Skertchley, Allan  

Slocum, W.L.  

Slotnick, Robert S. and Joseph Bleiberg  

Smith, I.D.  

Spence, Janet T.  

Spencer, William A.  

Steinmann, Ann and David Fox  

Super, Donald E.  

Sussmann, Leila  

Suter, Larry E. and Herman P. Miller  
Svalastoga, Kaare  

Swift, D.F.  

Taylor, L.  

Tenenbaum, Samuel  

Treiman, Donald J & Kermit Terrell  

Tumin, Melvin M. and Arnold S. Feldman  

Turner, Ralph H.  

Turner, Ralph H.  

Turner, Ralph H.  

Tyree, Andrea and Judith Teas  

Wexler, Philip  

Whitehurst, Carol A.  

Wilson, Alan B.  

Windham, Gerald O.  
Winkler, Anne

Wiseman, R.

Wolff, P. de and A.R.D. Van Slijpe

Wright, A.

Wylie, Ruth C.

Yanowitch, Murray, and Norton Dodge
APPENDIX I

ADDITIONAL TABLES AND GRAPHS WITH AUSTRALIAN FIGURES

RE: PARTICIPATION OF WOMEN IN TRADES, HIGHER EDUCATION AND PROFESSIONS AND INFLUENCE OF TYPE OF SCHOOL ATTENDED.
GRAPH I
FEMALE PARTICIPATION IN AUSTRALIAN EDUCATION

### Ratios of Female to Male Enrolments at Different Educational Levels

<table>
<thead>
<tr>
<th>Level</th>
<th>Ratio</th>
<th>Female</th>
<th>Male</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Certificate</td>
<td>1:1</td>
<td>![Female Icon]</td>
<td>![Male Icon]</td>
<td>1973</td>
</tr>
<tr>
<td>Higher School Certificate</td>
<td>1:1.5</td>
<td>![Female Icon]</td>
<td>![Male Icon]</td>
<td>1973</td>
</tr>
<tr>
<td>University First Degree</td>
<td>1:2</td>
<td>![Female Icon]</td>
<td>![Male Icon]</td>
<td>p 81 1971</td>
</tr>
<tr>
<td>Technical Colleges</td>
<td>1:3</td>
<td>![Female Icon]</td>
<td>![Male Icon]</td>
<td>p 75 1970</td>
</tr>
<tr>
<td>Colleges of Advanced Education</td>
<td>1:4</td>
<td>![Female Icon]</td>
<td>![Male Icon]</td>
<td>p 78 1971</td>
</tr>
<tr>
<td>Higher Degree</td>
<td>1:5</td>
<td>![Female Icon]</td>
<td>![Male Icon]</td>
<td>p 79 1967 - 1971</td>
</tr>
</tbody>
</table>

1 School figures, year 1973, from N.S.W. Department of Education, Division of Research and Planning, 1974.
### SOME EXAMPLES OF MALE ECONOMIC ADVANTAGE IN AUSTRALIA

<table>
<thead>
<tr>
<th>ITEM</th>
<th>RATIO FEMALE:MALE FUNDING</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHOOL (1:1.5)</td>
<td><img src="image1" alt="Image" /></td>
<td>80</td>
</tr>
<tr>
<td>Post Secondary Scholarships</td>
<td><img src="image2" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td>FAMILY (1:1.5)</td>
<td><img src="image3" alt="Image" /></td>
<td>83</td>
</tr>
<tr>
<td>Parent donations school fees</td>
<td><img src="image4" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td>EMPLOYER (1:2)</td>
<td><img src="image5" alt="Image" /></td>
<td>109</td>
</tr>
<tr>
<td>Median taxable incomes</td>
<td><img src="image6" alt="Image" /></td>
<td></td>
</tr>
</tbody>
</table>

1 O.E.C.D. Report, 1973
GRAPH 3

RATIO OF FEMALES' TO MALES' GRANTS

AUSTRALIA: Commonwealth grants for Universities and Colleges of Advanced Education,

<table>
<thead>
<tr>
<th>Year</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964-6</td>
<td>180.9</td>
<td></td>
</tr>
<tr>
<td>1967-9</td>
<td>249.6</td>
<td>47.9</td>
</tr>
<tr>
<td>1970-72</td>
<td>351.2</td>
<td>111.42</td>
</tr>
<tr>
<td>1973-5</td>
<td></td>
<td>465.8</td>
</tr>
</tbody>
</table>


AUSTRALIA: Proportion of students entering secondary school who remained to final year of secondary school, August 1972 (%)
### TABLE 7

**PERCENT FEMALES ENROLLED IN STAGE I TRADE COURSES 1970**

<table>
<thead>
<tr>
<th>School/course</th>
<th>Female enrolment % of total enrolment ((\pm) less than 0.5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APPLIED ELECTRICITY</strong></td>
<td></td>
</tr>
<tr>
<td>Electrical</td>
<td>((N=2217))</td>
</tr>
<tr>
<td>Radio</td>
<td>((N=53))</td>
</tr>
<tr>
<td>Telegraph )</td>
<td>((N=57))</td>
</tr>
<tr>
<td>Mechanics )</td>
<td></td>
</tr>
<tr>
<td><strong>AUTOMOTIVE &amp; AIRCRAFT</strong></td>
<td></td>
</tr>
<tr>
<td>Automotive</td>
<td>((N=1524))</td>
</tr>
<tr>
<td>Aircraft</td>
<td>((N=122))</td>
</tr>
<tr>
<td><strong>BUILDING</strong></td>
<td></td>
</tr>
<tr>
<td>Bricklaying</td>
<td>((N=168))</td>
</tr>
<tr>
<td>Cabinetmaking</td>
<td>((N=114))</td>
</tr>
<tr>
<td>Carpentry and joinery</td>
<td>((N=1249))</td>
</tr>
<tr>
<td>Painting and decorating</td>
<td>((N=179))</td>
</tr>
<tr>
<td>All other</td>
<td>((N=273))</td>
</tr>
<tr>
<td><strong>ENGINEERING TRADES</strong></td>
<td></td>
</tr>
<tr>
<td>Boilermaking</td>
<td>((N=639))</td>
</tr>
<tr>
<td>Fitting and machining</td>
<td>((N=2375))</td>
</tr>
<tr>
<td>All other</td>
<td>((N=448))</td>
</tr>
<tr>
<td><strong>FOOD</strong></td>
<td></td>
</tr>
<tr>
<td>Bread manufacture</td>
<td>((N=68))</td>
</tr>
<tr>
<td>Butchery</td>
<td>((N=244))</td>
</tr>
<tr>
<td>Cookery/commercial cookery</td>
<td>((N=124))</td>
</tr>
<tr>
<td></td>
<td>15.5</td>
</tr>
<tr>
<td><strong>GRAPHIC ARTS</strong></td>
<td></td>
</tr>
<tr>
<td>All trades</td>
<td>((N=106))</td>
</tr>
<tr>
<td><strong>HAIRDRESSING</strong></td>
<td></td>
</tr>
<tr>
<td>Ladies'</td>
<td>((N=1150))</td>
</tr>
<tr>
<td>Men's</td>
<td>((N=48))</td>
</tr>
<tr>
<td></td>
<td>94.2</td>
</tr>
<tr>
<td></td>
<td>16.7</td>
</tr>
<tr>
<td><strong>PLUMBING &amp; SHEET METAL</strong></td>
<td></td>
</tr>
<tr>
<td>Plumbing</td>
<td>((N=654))</td>
</tr>
<tr>
<td>Sheet metal</td>
<td>((N=250))</td>
</tr>
<tr>
<td><strong>VEHICLE TRADES</strong></td>
<td></td>
</tr>
<tr>
<td>Panel beating</td>
<td>((N=448))</td>
</tr>
<tr>
<td>Vehicle painting</td>
<td>((N=154))</td>
</tr>
<tr>
<td><strong>ALL TRADES</strong></td>
<td>((N=12,963))</td>
</tr>
<tr>
<td></td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>0.4 (excluding ladies hairdressing)</td>
</tr>
</tbody>
</table>

Hawke, G.A. "Summary of Descriptive Data on Trade and Certificate Courses of the N.S.W. Dept. of Technical Education" Research Report, Student Counsellor (Research) June, 1974
### TABLE 8

Distribution of males and females in selected occupations, 1966

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architects, engineers, surveyors</td>
<td>31.560</td>
<td>197</td>
</tr>
<tr>
<td>Chemists, physicists, geologists</td>
<td>9.230</td>
<td>902</td>
</tr>
<tr>
<td>Medical practitioners, dentists</td>
<td>15.491</td>
<td>1.673</td>
</tr>
<tr>
<td>Nurses</td>
<td>4.563</td>
<td>72.674</td>
</tr>
<tr>
<td>Teachers</td>
<td>59.325</td>
<td>75.591</td>
</tr>
<tr>
<td>Law professions</td>
<td>7.694</td>
<td>377</td>
</tr>
</tbody>
</table>

Coppell, 1974