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CAREER PATHS OF PSYCHOLOGY GRADUATES

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A thesis submitted for the degree of
Master of Science
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Declaration

I declare that this thesis reports my original work, and that no part of it has been previously accepted or presented for the award of a degree or diploma by any university. To the best of my knowledge no material previously published or written by another person is included except where due acknowledgement is given.

A handwritten signature in black ink, reading "Michael Willem de Looper". The signature is written in a cursive style with a long horizontal stroke at the end.

Michael Willem de Looper

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Abstract

Little is known about the employment patterns and career paths of psychology graduates following their graduation from university. The responses of 576 psychology graduates from five major metropolitan universities to a postal survey were studied in order to ascertain their career paths following graduation. Although a majority of graduates undertook studies in psychology in order to pursue a career in psychology, less than 20 per cent ultimately worked as psychologists. The remainder found careers in a wide variety of occupations and industries, mostly as professionals within the community services industry.

Employment histories of three graduate cohorts were followed throughout the 1980's, in order to examine changes in the psychology labour market over time. Increasing proportions of graduates found employment as managers/administrators and para-professionals, at the expense of traditional positions within the professionals sphere. Specifically, occupations in research, welfare and business increased in popularity, occupations in psychology and personnel remained steady, and clerical and teaching positions declined in popularity. Private sector employment increased steadily throughout the 1980's, whereas government and education sector employment decreased, the latter markedly.

A number of factors were found to influence career paths, notably, whether the undergraduate degree was of three or four years duration, whether the graduate had subsequently undertaken higher degree studies, and the amount of workforce experience the graduate had. The gender of the graduate was not found to be significant, although it was observed that on average male graduates worked in positions with higher occupational prestige. These factors were used to model career path development for psychology graduates.

Contents

1	Introduction	
1.1	The development of psychology in Australia.....	1
1.2	The employment of psychologists and psychology graduates.....	4
1.3	Examining career paths.....	9
2	Method	
2.1	The survey.....	10
2.2	The sample.....	12
2.3	Coding and analysis of the survey.....	14
3	At university	
3.1	Why study psychology?.....	17
3.2	Other majors.....	19
3.3	Level and length of study.....	21
4	Occupations and industries of employment	
4.1	Occupation.....	24
4.2	Industry.....	32
4.3	Occupation by industry.....	36
5	Graduate cohorts	
5.1	Graduate status over time.....	41
5.2	Changes in occupations and industries of employment.....	48
5.3	Comparisons with existing longitudinal data.....	60
6	Post-graduate or further study	
6.1	Type of degree.....	67
6.2	Other characteristics of further study.....	71
6.3	Reasons for undertaking further study.....	72
7	Selected career path determinants	
7.1	Gender.....	75
7.2	Level of degree.....	79
7.3	The effect of further study.....	82

7.4	Relevance of degree, job satisfaction & professional membership	85
7.5	A model of career path development.....	94
8	Conclusions	
8.1	Summary of results	97
8.2	Comparisons with other studies	102
8.3	Implications of results	108
8.4	Further research.....	113
	References	116
	Appendices	
1	Survey questionnaire.....	120
2	Australian Standard Classification of Occupations	125
3	Australian Standard Industrial Classification	129
4	ANU3 Occupational Prestige Scores	135
5	Appendix tables	138

Chapter 1

Introduction

As a science, psychology is quite new, with most of its brief history being confined to the past century. In Australia, psychology is even younger, only achieving real prominence in the decades of the sixties and seventies, when university enrolments began to burgeon. With increasing growth in the discipline came accompanying maturational problems – the eighties saw a number of issues arise, such as appropriate levels of supply and demand of psychology graduates and strategies for training these graduates for an ever-competitive labour market. Psychology researchers began to carry out labour market studies in order to deal with these issues, however most dealt not with psychology graduates as a whole, but the narrower subset of those graduates who were working as psychologists. This thesis will examine the career paths of both psychology graduates who work as psychologists, and those graduates who work in other areas, either related or unrelated to psychology.

1.1 The development of psychology in Australia

Psychology in Australia owes its beginnings to philosophy. In the 1890's, a number of British scholars who had been appointed to chairs of philosophy in Australia began to promote an empirical approach to the application of 'mental philosophy' to society (Taft and Day, 1988). The intellectual streams that provided the basis for psychology's growth in Australia were the empiricism of philosophers such as John Stuart Mill and Alexander Bain, and the biological emphasis of Darwin, Spencer and Galton. The combination of these formative streams led early pioneers such as Henry Laurie of the University of Melbourne and Francis Anderson of Sydney University to promote "psychological and psychometrical investigation in Australia" as early as 1895 (Turtle, in Taft and Day, 1988).

British Mental Philosophy and Biology combined with a third influence – German experimental philosophy. The first experimental psychology laboratory in Australia was established at Melbourne Teachers College in 1903 by Dr John Smyth. He had been impressed to apply experimental psychology to the training of

teachers after visiting Wilhelm Wundt's Leipzig laboratory (Taft, 1982).

The most striking feature of the early pioneers was their interest in the practical applications of psychology – that theory regarding the science of the human mind should be applied to the betterment of society. Nixon (1987) sees Australia's highly empirical psychology as a legacy from these early pioneers, especially those early psychologists working at the Universities of Sydney and Western Australia. Indeed, these early trends still have present-day ramifications in the tenor of Australian psychology – "There are still signs that those pioneers regarded the advancement and dissemination of knowledge as only marginally more important than its application in practical service, especially in education and industry" (Nixon, 1987).

In the 1920's, psychology departments were established at both Sydney University and the University of Western Australia. The only other department founded before the end of World War II was that at Sydney University's subsidiary College of New England, or the University of New England as it is now known. The first full undergraduate course in psychology was offered under Dr Hugh Fowler at the University of Western Australia

Developments in academic psychology during the 1920's and 1930's were influenced strongly by needs in other professions such as teaching and medicine (Taft, 1982), leading to an emphasis on individual differences, the measurement of abilities and psychopathology. The early application of psychology to education and medicine broadened to include problems of education, mental retardation, counselling and child psychopathology.

University lecturers often offered consultancy services to children and adults in both educational and counselling psychology. A.H. Martin founded the Australian Institute of Industrial Psychology in 1927 whilst a lecturer at Sydney University in order to provide services to the public in careers guidance, industrial selection and work analysis and training (Taft and Day, 1988). K.F. Cunningham founded the Australian Council for Educational Research (ACER) in 1930, in order to conduct psychometrical research and testing – clinics offering diagnostic tests, guidance and some therapy were established in all States. Clinical work, however, remained the domain of psychiatrists. Taft and Day (1988) in commenting on this period of development, noted that "The links established over 50 years ago between the universities and the public and between theory and practice in psychology are still strong in Australia". The early university lecturers believed

that the application of the new science of the human mind held great promise for the betterment of life, leading them to offer extension courses and adult education on topics such as child adjustment, parenting, careers guidance, leadership and personnel selection.

World War II led to a rapid development of applied psychology. Government authorities established military and industrial psychology programmes in government departments, war industries and the armed services, designed to train human resources for the war effort. The perceived success of these programmes led State governments to greatly increase "...vocational and educational guidance, counselling and clinical services for both children and adults, and the establishment of industrial psychology facilities in both government and private enterprises" (Taft and Day, 1988). Accompanying this rapid expansion in application was an increase in academic psychology. Psychology as an academic discipline was afforded a legitimacy based on its applied successes within the community. In 1945, an Australian Branch of the British Psychological Society was established in order to cater for the professional needs of psychologists, replaced in 1966 by the Australian Psychological Society.

The post-war expansion of psychology can be tied to the changes occurring in Australian society at this time. A greatly increasing population fuelled by migrant intakes and the increased demand for an educated work force led to an overloaded university system. Figures quoted by Nixon (1987) for the University of Sydney psychology department are typical – "... between 1945 and 1958 the staff increased by 27 percent and between 1945 and 1963 by 173 percent, but the number of undergraduates went up respectively by 83 percent and 317 percent. From 1953 to 1963 students increased from 607 to 2,569." Full-time teaching staff in all Australian universities rose from 36 in 1950 to 67 in 1955, 112 in 1960, 173 in 1965 and 235 in 1970 (Commonwealth Bureau of Census and Statistics, Ref. No. 13.8). A major contributing factor to this growth occurred as a result of the 1957 Murray Committee, established by the Australian Government in order to inquire into university resources. Recommendations of the committee included the establishment of new universities, increased funding, scholarships and financial support for both students and research.

Economic prosperity and an expansion of employment saw the increase in the popularity of psychology continue throughout the 1960's and 1970's. Post-graduate study flourished and new university psychology departments were

established at Flinders, Macquarie, Monash, Wollongong, James Cook and La Trobe universities. Higher education was divided into two sectors so as to create numbers of universities and colleges, both teaching psychology. Applications of psychology continued into an ever-increasing number of new areas. In their 1977 review of Australian psychology, Nixon and Taft detailed the expanding teaching, research and application of psychology, both in the public and private sphere.

The beginning of the 1980's saw this expansion cease. Reductions in funding, a slowing of enrolments, aging staff and less opportunities for new graduates meant cutbacks in research, teaching and applied work (Nixon, 1987). Over (1981) predicted that supply of psychology graduates would soon outstrip demand at a time when the traditional employers of psychology were recruiting on a reduced scale. Graduates, especially those with pass degrees, could expect keen competition for employment from other graduates in a number of related disciplines. It was generally acknowledged that a crisis point in the supply and demand of psychology graduates had been reached.

1.2 The employment of psychologists and psychology graduates

In Australia, most analyses of the employment of psychology graduates have been confined to those graduates working as psychologists. Only a few studies have considered psychology graduates en masse. This is noteworthy, since the majority of graduates in psychology do not work as psychologists; Kidd (1971) found that only about 17 per cent of those majoring in psychology obtained jobs with the label 'psychologist'. A larger number work in psychology-related employment within health and human services. A proportion of graduates will work in employment that is not at all related to psychology.

The employment of psychologists

Kidd's (1971) study, conducted under the auspices of the Australian Psychological Society, was one of the first attempts to systematically document where psychologists were working. He examined 2,154 persons who were reported as undertaking psychology-based employment as at 30 June 1970, and found 20 percent employed as university teachers (in psychology, psychiatry, education and other departments), 13 percent as college teachers, 27 percent in counselling services and educational services, 16 percent in clinical psychology, 9 percent in personnel psychology, 8 percent in vocational guidance and social psychology and

6 percent in market research, marketing and mass media. In canvassing employers of psychologists, he found that they considered psychology a "strong discipline", but found the statistical emphasis of the field of more practical use than its psychological content (Nixon 1987).

Applied psychology at this time was dominated by educational and vocational guidance, mostly centred in New South Wales. Of the 2,154 survey respondents, 45 to 50 percent were employed in New South Wales and the ACT, with 782 psychologists acting as educational and vocational guidance officers in universities, technical colleges and schools. The 184 employed in personnel psychology included 101 persons in government organisations such as the then Department of Labour, QANTAS, the Reserve Bank and Public Service Boards. Only 83 were employed in consultancies or private business firms. Bucklow (in Nixon and Taft, 1977) noted the heavy weighting (some 44 percent of the entire sample) towards personnel recruitment, selection and testing. Although the popular belief was that large numbers of psychologists were working in the mass media and market research, only 12 persons were employed in social psychology, 22 in mass media such as the Australian Broadcasting Commission and 108 in market research, mostly as consultants – a total of 6 percent of the sample.

As psychology's expansion plateaued in the late 1970's and early 1980's, a growing body of research began to assess and to define the role of professional psychologists in Australia (eg. Kirkby, 1978; Byrne, 1982; Over et al., 1985; Thomas and Wearing, 1986; Groth-Marnat, 1988). This can be attributed in part to the minor crisis of oversupply of graduates for traditional psychologist employment areas (Over, 1981). Kirkby (1978) and Thomas and Wearing (1986) both stressed the need for the initiation of new courses to train psychologists for areas of particular need, such as rehabilitation psychology or community health psychology. It was felt that there was also a need for a greater formal role for psychology in health care. Byrne (1982) and Byrne and Reinhart (1990) flagged the need for enhancing public and government awareness of the roles that clinical psychologists play within the health care system by profiling the professional activities and theoretical orientations of psychologists engaged in clinical work.

Over et al (1985) and Read and Lord (1990) noted that relatively few registered psychologists were actually engaged in private practice, and that those who were act mainly on a part-time basis. Three barriers were seen as limiting the private practice of psychology – the low level of public information as to the role of

psychologists in health care, the non-reimbursement of psychologists' fees under Medicare and the lack of standardisation as regards training and qualifications in comparison to many other health professions. Groth-Marnat (1988), in discussing the under-utilisation of hospital psychologists, also noted the narrow role expectations of psychologists by hospital administrators, as well as inadequate academic and professional training and competition from other disciplines.

Taft and Day (1988) identified three main areas for the employment of psychologists in applied areas. The first broad area of clinical and counselling psychology covers psychologists employed in public mental hospitals and outpatient referral clinics, with roles including assessment and therapy. Psychologists are employed in general hospitals in psychiatric, paediatric, neurological and general departments, or in specialised units such as those for drug and alcohol treatment. Psychologists work in repatriation, prisons and courts and offer clinical services for children in education, child welfare and health. Personal counselling is undertaken in schools, universities and some government departments, as well as in private practice. A second broad area, educational psychology, encompasses psychologists providing testing, counselling and careers guidance within schools, as well as other services including curriculum research and consultancies for teachers. The third area identified was organisational and industrial psychology. Psychologists offer careers guidance within the Commonwealth Employment Service, and are employed in other government agencies including Public Service Boards, Telecom and Australia Post. Personnel and organisational psychologists are largely employed by private consultants. The Armed Services have a long history of employing psychologists for recruitment selection, consultancy and the provision of clinical and counselling services.

The employment of psychology graduates

Only three studies have considered the employment of psychology graduates in any detail. Over (1981) reported Kidd's 1971 findings which established the employment status of 1,148 students who had completed a three year pass or four year honours degree at Sydney University between 1965 and 1970. From this sample, 18.3 percent proceeded to undertake a Diploma of Education and 13.2 advanced to other forms of higher education. A further 15.4 percent found employment as school teachers, 3.6 percent were employed in tertiary education and 12.9 percent held what were described as administrative or clerical appointments. Only 15.7 percent of the sample were considered to be employed in

psychology-based positions.

Over also used the annual Graduate Careers Council of Australia (GCCA) survey of first destinations of graduates to examine 1978 pass psychology graduates as at 30 April 1979. Of the graduates who returned the survey, 48 percent were found to be engaged in full-time study (including 9.5 percent undertaking teacher training), 11 percent were teachers, 13 percent found government employment, 8 percent were employed by the private sector and 12 percent were still seeking work. Few pass graduates were found to gain employment as psychologists, and those who entered the labourforce were forced to compete with other graduates for generalist positions. Over noted that many pass graduates proceeded to undertake further study so as to gain the necessary qualifications to meet the academic requirements for APS membership. In turn, this would enable graduates to seek employment as psychologists.

It was further noted by Over that information on the supply-demand and employment of graduates was sorely lacking. No data were available on the enrolment trends or patterns of employment of coursework graduates. There was no possibility of establishing how many psychology graduates ultimately worked in psychology-based occupations, or the importance of factors such as the university or college of graduation, the type of course, age, sex, additional qualifications or experience in employment might have in influencing careers. Although useful, the Graduate Careers Council of Australia survey data were found to be limited, due to the partial coverage of graduates, the emphasis on undergraduates only, the lack of differentiation as regards age, specialisation, work experience, further qualifications or type of work, and the emphasis on first employment destinations of graduates, not subsequent career paths. Over recommended the assembling of meaningful statistics able to be accessed by students, academics, working psychologists, employers and others with an interest in career path issues. The Australian Psychological Society was encouraged to take up the challenge posed by these shortfalls.

A second study by Over (1983) examined the training and career path preferences of psychology majors. Undergraduates at LaTrobe, Melbourne and Monash universities were asked to provide information on their educational background, reasons for training in psychology, course preferences and career objectives. Most students preferred to work in counselling or clinical psychology – areas consistent with their motives in enrolling in psychology. As alternatives,

should they be unable to find employment as psychologists, 38 percent of students nominated social work and 28 percent elected to become teachers. Only 21 percent nominated private sector employment in areas such as administration, advertising, industrial relations, management, market research, personnel, public relations or sales. Few students seemed either educationally or attitudinally prepared for private sector employment.

Over suggested that there would be numbers of graduates who would not fulfil their primary career aspirations due to the limited availability of positions in traditional employment areas. It was recommended, that attempts be made to identify non-traditional employment roles for graduates and adapt university and college training programmes to reflect these roles. Further, employers needed to be convinced as to the range and applicability of skills held by graduates. Students also needed to adjust their expectations as to the particular contexts in which they might find employment. The APS and its membership was again exhorted to play a greater role in job monitoring and creation.

Mullaly, Kelly and Wearing (1985), from the University of Melbourne, considered the destinations of 107 persons who graduated with honours in psychology in 1979, 1980 and 1981. Respondents to their survey were found to be employed in diverse areas in both traditional and non-traditional realms. Three broad groups of occupations were identified – 21.0 percent of employed graduates were classified as having jobs in clinical psychology, 40.5 percent had psychology-related jobs in non-clinical fields and 38.5 percent worked in non-psychology positions. The main psychology-related positions available to graduates were in personnel and related areas, as well as research. Numbers of graduates were employed in administrative, clerical and generalist positions with no immediate relation to psychology. Again, contrary to career preferences, only a minority of graduates worked in clinical or counselling positions, however there was evidence to suggest that this remained a preferred employment setting. Although underemployment occurred, involuntary unemployment was rare.

Substantial proportions of graduates continued with study, reiterating Over's earlier finding that many graduates remained aspiring clinicians. This may also be seen as an admission that a psychology honours degree did not provide enough specialist skills for work in desired fields. Mullaly et al. found little comfort in concluding that there were not sufficient numbers of jobs in psychology for all honours graduates and that regardless of their current satisfaction with their

employment, graduates remained dubious about their long-term career prospects.

1.3 Examining career paths

The current study will attempt to redress some of the information deficiencies noted by Over more than a decade ago. Since the early 1980's, no serious attempt has been made to explore the employment patterns of psychology graduates. In light of the crisis in supply and demand of psychology graduates foreseen by Over (1981, 1983) and any changes in the labour market that may have occurred since his studies were carried out, it would seem to be all-the-more imperative to take both a retrospective and forward look at the state of the psychology graduate labourforce.

Follow-up surveys of university graduates are not new. Kelsall, Poole and Kuhn (1970) traced 10,000 graduates from British universities in 1960 via a postal questionnaire, and explored the postgraduate study and employment patterns of these graduates in the six years since their graduation. Titley (1978) followed 1967 U.S. psychology graduates, monitoring their workforce status one, five and ten years after graduation. In Australia, Coyte (1985) examined graduates of five universities five years after their graduation.

Vocational psychology—which would best describe the current study—is not new either, especially in Australia where much of early psychology was devoted solely to the study of educational and vocational choices. Theories of careers and vocational behaviour have burgeoned since the early 1970's (see Osipow, 1973; Arthur, Hall and Lawrence, 1989), facilitated largely through organisation and management studies, and have been applied in order to carry out efficient human resources management. Lines of career inquiry have focused on occupation matching, careers as social roles, the adult development of both men and women and the interaction of both individual career processes and organisational career dynamics.

The current study makes no attempt to interpret findings with respect to any theory of career development. It does hope to provide empirical data on the career paths of Australian psychology graduates throughout the 1980's and early 1990's, to identify any past trends and to predict a number of possible future scenarios. In doing so, it is hoped that such information might prove beneficial in making the best possible use of our valuable psychology graduate labour force.

Chapter 2

Method

In order to best explore the career paths of psychology graduates and to examine any changes that may have occurred in the psychology labour market over time, it was decided to trace the employment history of three different cohorts of psychology graduates. This was to be done by surveying a sample of the 1980, 1984 and 1988 graduating classes from a number of large metropolitan universities. The employment histories of each of these graduating classes can then be compared and contrasted. By examining these cohorts, a profile of both the different areas of employment of graduates and changes that may have occurred in these areas over time will emerge.

2.1 The survey

A brief self-report questionnaire was designed (Appendix 1), inviting graduates to participate in a survey of "...the type of work, further study or other activity you have been involved in, and the occupation (if any) you may have undertaken since the completion of your degree". The survey was divided into five separate sections:-

About you

This section asked for brief demographic details, including the respondents' sex, age at the survey date, and place of permanent residence.

Your qualifications

This section asked for information on the respondent's first psychology qualification – the type of degree obtained, the level of the degree (pass or honours), the institution of study, the year of graduation, years of study, other subjects studied besides psychology and the main reason for undertaking psychological studies. The second part of this section asked about any postgraduate or further studies that the respondent may have undertaken – the type of degree, level of the degree, institution of study, whether it was full or part-time, commencement/completion dates, major subject studied, and the main reason for undertaking further studies.

Status at 30 April

This section was designed in order to determine what activity respondents were engaged in as of 30 April 1981, 1983, 1985, 1987 and 1989. A number of options were presented to the respondent, enabling them to indicate whether they were engaged in work, study or other activities. The data thus obtained would provide a baseline for comparisons of different sub-categories of graduates. For example, a profile of those graduates working full-time in 1981 could be compared with a profile of those graduates working full-time in 1989.

Your employment history

This section asked respondents to list their employment history since graduation. Each new position where there was either a change in employer or a substantial change in the nature of duties with the same employer was to be recorded. Detail was sought for the following:-

- The type of employer – that is, the area or industry of employment; where the respondent worked
- Job title or designation – that is, the occupation; what the respondent did
- Main tasks or duties required – providing further information in order to accurately determine the occupation of the respondent
- Average hours per week – how much time, on average, the respondent spent working each week
- Dates from/to – month and year of commencing and completing that particular job; enabling calculation of how long the respondent spent in that particular position
- Reasons for leaving – why the respondent left that particular position

And finally...

This final section asked whether respondents were members of the Australian Psychological Society, or were registered with any State psychology boards. Respondents were also asked to complete three Likert-type scales on the relevance of their undergraduate degree to their career, the relevance of their postgraduate studies (if undertaken) to their career, and their general satisfaction with their current position. If dissatisfied, respondents were asked to indicate whether they preferred to be working in some other field using their qualifications. Finally, respondents were asked whether they wished to provide any further comments regarding their training or employment.

2.2 The sample

Heads of the psychology schools of the Universities of Sydney, New South Wales, Melbourne, LaTrobe and Queensland were approached by letter and asked if they were willing to participate in the survey. All agreed, except Sydney and LaTrobe universities preferred to carry out a protected mailout, whereby they undertook the actual mailout, thus not divulging names and addresses to any outside party. This was agreed to.

In each case, universities were asked to provide names and addresses for their 1980, 1984 and 1988 graduating classes. In actuality, the University of New South Wales provided only four year honours graduates and the University of Queensland could only provide their 1988 graduating class, since it was not possible for their computer system to select graduates by psychology major before this date. All other universities were able to carry out the requirements.

A total of 1,290 surveys were posted during June 1991, each containing a reply-paid envelope. By December 1991, 627 surveys were returned, of which 51 had unknown addresses. This left 576 usable surveys, giving a response rate of 44.7 per cent. Allowing for the nature of the survey – a postal questionnaire requiring quite detailed responses, and with no followup procedure for non-respondents – the response rate was considered satisfactory. The costs and time involved in undertaking lengthy follow-up procedures were found to be prohibitive; it was felt that the limited reward in terms of numbers of extra returned surveys did not justify the exercise.

Exactly what constitutes an acceptable response rate for a mailout survey is debatable. Studies have found repeatedly that those people who do not return mail surveys differ significantly from people who do (Moser and Kalton, 1975, pp. 267–8). It is possible that only those persons interested in the survey, or those who have demonstrated a successful career since graduation would be motivated enough to return the survey. Those with less successful careers, disillusioned with their university psychology experience, or those averse to surveys in general may not bother to reply. However, the proportions of graduates working in different occupations for this sample of psychology graduates does not differ greatly from that found in the general population of psychology graduates, as measured by 1986 Australian Bureau of Statistics census results (see Chapter 4.1 for more detail). Thus, there is reason to believe that this sample is not overly biased, at least as far as the profile of graduate occupations is concerned, and so can reasonably be

judged as typical of all psychology graduates. Some of the measures of career satisfaction included in the survey may be biased toward over-rating. There is no immediate solution to the question as to whether career underachievers or disillusioned graduates are under-represented. It should be considered as probable.

Respondents were primarily female (74 per cent), and aged less than 35 years (Table 2.1). This is in accord with the general trend of female psychology graduates outnumbering male graduates by three to one (see Appendix 5, Tables 1, 3 and 4). The mean age of the sample was 31.4 years, with a range from 22 to 70 years.

Table 2.1: Age and sex of all respondents

<i>Age group (years)</i>	<i>Males</i>	<i>Females</i>	<i>Persons</i>
20 to 24	14	92	106
25 to 29	42	130	172
30 to 34	39	119	158
35 to 39	21	31	52
40 to 44	14	22	36
45 to 49	6	19	25
50 and over	8	13	21
No answer	3	3	6
All ages	147	429	576

Of the respondents, 336 (58 per cent) held BA degrees in psychology and 229 (40 per cent) held BSc, BSc(Psych) or BBehavSci degrees (see Table 2.2). The largest proportion of graduates were from Sydney University (30 per cent), followed by approximately equal proportions from LaTrobe University, and the Universities of Queensland and Melbourne (19, 20 and 22 per cent). The remainder of respondents graduated from the University of New South Wales (9 per cent).

Table 2.2: University and first degree of all respondents

<i>University</i>	<i>BA</i>	<i>BSc</i>	<i>BSc(Psych)</i>	<i>BBehavSci</i>	<i>Other</i>	<i>All degrees</i>
New South Wales	7	13	33	—	—	53
La Trobe	—	—	—	111	1	112
Queensland	99	14	—	—	1	114
Melbourne	92	33	—	—	—	125
Sydney	138	24	1	—	9	172
All universities	336	84	34	111	11	576

Degrees were divided between pass, or three year degrees (62 per cent) and honours, or four year degrees (38 per cent) (Table 2.3). Graduates from the

University of New South Wales primarily held four year BSc(Psych) degrees. LaTrobe graduates exclusively held BBehavSci degrees, divided between three year (62 per cent) and four year (38 per cent). Those graduating from the Universities of Sydney, Melbourne and Queensland primarily held BA degrees (80 per cent), divided between three year (68 per cent) and four year (32 per cent).

Table 2.3: Level of first degree of all respondents

<i>Level of degree</i>	<i>BA</i>	<i>BSc</i>	<i>BSc(Psych)</i>	<i>BBehavSci</i>	<i>Other</i>	<i>All degrees</i>
Pass						
Major	229	48	—	69	9	355
Fourth year	6	1	—	—	2	9
Honours	101	35	34	42	—	212
All levels	336	84	34	111	11	576

Although the 1980, 1984 and 1988 graduating classes were requested, the year of graduation of respondents varied from pre-1979 right through to 1989 (Table 2.4). The modal years, however, did match the request, being 1979–80, 1983–84 and 1987–88. All returned questionnaires, regardless of year of graduation, were used for data analysis.

Table 2.4: Year of graduation and sex of all respondents

<i>Year of graduation</i>	<i>Males</i>	<i>Females</i>	<i>Persons</i>
Before 1979	7	11	18
1979	6	17	23
1980	24	62	86
1981	0	10	10
1982	3	6	9
1983	16	35	51
1984	14	38	52
1985	10	19	29
1986	3	7	10
1987	13	56	69
1988	41	128	169
1989	8	31	39
No answer	2	9	11
All years	147	429	576

2.3 Coding and analysis of the survey

All survey responses were numerically coded and entered into a machine readable database for analysis using SAS software (SAS Institute Inc., 1985). A maximum of two postgraduate qualifications, and five different jobs were coded.

This was found to be more than sufficient for most graduates. A minority of respondents (6 per cent), especially those graduating in the early 1980's listed more than five different jobs in which they had worked. If this was the case, a decision was made as to which of the jobs listed were to be considered primary, or most important. A field was included in the database which noted how many different jobs each respondent listed. The maximum number of jobs worked by any one graduate following their graduation was 12, however several of these were concurrent.

Since several of the questions were open-ended, further methods of classification were required in order to adequately code responses. A number of existing classifications were employed in order to facilitate this process. These classifications were:-

Australian Standard Classification of Occupations (ASCO)

All occupations given by respondents were coded to the Australian Bureau of Statistics' Australian Standard Classification of Occupations, or ASCO (ABS, 1987) (see Appendix 2). Developed in order to process the results of the 1986 census, ASCO is a skill-based classification reflecting different educational and training requirements of jobs. The full ASCO uses a six-digit coding system – the first digit represents one of eight major groups, the first two digits represent one of 52 minor groups, the first four digits represent one of 282 unit groups, and all six digits represent one of 1,079 individual occupations. For the purposes of this study, only the first four digits of the full classification were used. These 282 unit groups more than adequately describe the range and nature of the different occupations carried out by this sample of psychology graduates. The eight major groups were also used to provide summary information for all occupations.

Australian Standard Industrial Classification (ASIC)

All areas of employment were coded to the Australian Bureau of Statistics' Australian Standard Industrial Classification, or ASIC (ABS, 1985) (see Appendix 3). ASIC identifies groupings of businesses which carry out similar economic activities, and defines such groupings as an industry. The economic activities which characterise the businesses concerned are referred to activities primary to that industry. These primary activities are organised hierarchically into 13 divisions labelled A to M, 50 two digit subdivisions, 129 three digit classes, and 476 four digit classes. For the purposes of this study, the four digit classification was used. Again, this was considered to be adequate to describe the different industries in which this

sample of graduates worked. The 13 divisions were also used in order to provide summary information for all industries.

Occupational prestige – the ANU3 scale

One method of drawing conclusions about career paths and career advancement is to ask for information about salaries. This survey did not ask for salary information, as it was felt that this may infringe upon areas of privacy and confidentiality. An alternative is to use a measure of occupational prestige, widely considered to be the most powerful indicator of social advantage (Quine, 1986). Several such measures have been developed in order to investigate social class and structure in Australia (Broom et al, 1977; Quine, 1986).

Building on earlier work, Jones (1988) has developed the ANU3 scale for use with the ASCO occupational classification (see Appendix 4). All four digit ASCO unit groups are rated and scaled from 0 to 100 in order of how the community perceived their relative prestige. Occupations such as cleaners are seen as having low occupational prestige (rated 3.7), whereas doctors are seen as having high occupational prestige (rated 91.9).

The classification is used in this study in order to draw conclusions about the occupational prestige of various jobs, career advancement of different cohorts of graduates and the measurement of difference between various subgroups, such as males versus females or pass versus honours graduates. The assumption held here is that as graduates advance in their careers, they seek to work in occupations with greater prestige, and thus, higher occupational prestige scores.

Chapter 3

At university

During the 1970's, psychology increasingly became the preferred choice for many prospective tertiary students. A greatly increased demand for tertiary education resulted in dramatic rises in student numbers (Lovibond, 1977). In 1976, 6,100 of the 125,000 equivalent full-time students were enrolled in psychology. By 1986 this number had levelled to 6,000 out of 140,000 (McNicol, 1988). In the early 1980's, Australian universities were producing approximately 2,000 psychology graduates per year. By the start of the 1990's, commencements in psychology were maintaining a similar level (see Appendix 5, Tables 1 and 2). Psychology had arrived as a discipline, and in McNicol's words, had become "big business".

The rise in the popularity of psychology raises the question as to why students decide to choose psychology in the first instance. This chapter will explore some of these reasons. It will also consider other factors that help to prepare the psychology graduate for the transition to the work place. Some of these other factors include the choice of major besides psychology, the level and length of study and the type of degree undertaken.

3.1 Why study psychology?

The 576 respondents were asked why they first decided to study psychology. Eleven options were given in the questionnaire, which for purposes of classification could be divided into two groups – 'self directed' and 'other directed' motivations. The self directed motivations were primarily to meet the respondents own needs:–

- I was interested in psychology as a career 38.0 per cent
- To increase my knowledge and skills 15.3 per cent
- To find out more about myself 3.6 per cent

The other directed motivations were primarily to meet the needs of others:–

- I wanted to help others 13.2 per cent
- I enjoy working with people 9.5 per cent

Also worth noting is that almost 6 per cent of respondents felt that their study

of psychology was an unplanned occurrence, and 2.6 per cent were influenced by someone else to study psychology. Other less common determinants were a family connection with psychology (1.6 per cent), and to enter a secure career (0.5 per cent). Non-specified reasons, i.e. the 'Other' category accounted for the remaining 10 per cent.

Only one motivation showed a significant gender difference. Some 23.1 per cent of males studied psychology in order to increase their knowledge and skills, whereas only 12.6 per cent of females gave this as a reason ($\chi^2(1) = 9.40, p < 0.005$). There were several other notable (but not statistically significant) differences. Only 0.7 per cent of males were influenced by someone else to study psychology, whereas 3.3 per cent of females were; 10.5 per cent of females decided to study psychology primarily because they enjoyed working with people, as opposed to 6.8 per cent of male respondents.

The most popular response was an interest in psychology as a career. This is important in light of the fact that most students who enrol in psychology courses are not destined for professional careers in psychology (McNicol, 1988), even though most will be oriented towards working in clinical (or counselling) psychology (Over, 1983). This implies that those graduates not fulfilling their primary career aspirations will need to compromise their career choice, or sacrifice prestige level in order to maintain their vocational interest (Over, 1983; Pryor and Taylor, 1986).

A significant proportion of those studying psychology did so even though they were not considering a career in the field, even at the outset of their degree. As the second most popular response, 15.3 per cent of respondents answered that they were studying psychology in order to increase their knowledge and skills, often as an adjunct to prospective or already existing careers in education, business, social work and other areas. In fact most psychology graduates do not go on to work as psychologists after graduation, whether intentionally or unintentionally due to limited career opportunities.

A strong motivation to study psychology is the one traditionally associated with the helping professions – altruism. 'I wanted to help people' was the reason given by 13.2 per cent of the sample. It is also possible that many of those who gave their reason as 'interest in psychology as a career' would do so with an underlying altruistic motivation. In other words, 'I was interested in psychology as a career, so that I could help people, or work with others.' If this is so, then the division of

reasons given above into 'self' and 'other' directed motivations may be too simplistic.

Another study has addressed the question as to why students choose to study psychology. Over (1983) reported that fewer than 25 per cent of respondents had decided by their second last year at school to train in psychology. The decision was either reached during the final year at school or subsequently. Further, students had enrolled in psychology because of a desire to work for and with people, or through interest in the work of a psychologist – reasons compatible with those indicated here. Other reasons found by Over included a desire for self-employment, the status attached to the profession, the anticipated level of income, failure to meet the quota requirements in other courses, and the likely compatibility of employment with anticipated family commitments.

Having decided to study psychology, it is one more step to then actually pursue a career in psychology. Undergraduates may decide to become psychologists only after several years of study, finding that they enjoy the field, and wish to pursue it further. The decision to become a career psychologist is contingent upon a number of factors, such as honours performance at the undergraduate level, usually followed by post-graduate study. Following graduation, competition takes place for the limited number of psychologist positions available. As we will see in Chapter 4, only a minority of psychology graduates actually become psychologists. The remainder of graduates, although desiring to become psychologists, may need to compromise their career choice, or find other less prestigious positions whilst waiting for suitable opportunities (Pryor and Taylor, 1986).

3.2 Other majors

Almost half the sample (48.6 per cent) indicated that they had majored only in psychology (Table 3.1). The remainder of the sample undertook a wide variety of other majors in arts, science, business or health –related fields. It would be of interest to consider these other majors, especially since they may play a role in determining future career preferences. Although students may study subjects out of necessity and/or limited choice, it is also likely that they choose to study subjects that they enjoy or that they feel will benefit them in their future careers.

The majority of other majors (23.4 per cent) could broadly be termed arts-related subjects. These included English (6.3 per cent), history (4.2 per cent),

languages (3.7 per cent), philosophy (3.1 per cent) and literature (2.1 per cent). More males than females chose philosophy, whereas more females than males chose literature and languages.

Noticeably less graduates chose science-related majors such as biology (2.4 per cent), criminology (1.7 per cent) and mathematics (1.6 per cent). Proportionally more males than females chose biology, whereas more females than males chose criminology. Business-related majors are becoming increasingly popular, at least amongst males (14.3 per cent) as compared to females (5.8 per cent). Some of the more popular subjects in this group include economics (2.6 per cent), law and legal studies (2.4 per cent), computer science (0.9 per cent), government (0.9 per cent) and industrial relations (0.7 per cent). Health-related majors (besides psychology) were almost entirely dominated by sociology (5.4 per cent), with social work (0.7 per cent), human movement (0.7 per cent) and physiology contributing to the remainder.

Table 3.1: Broad majors of all respondents, by sex

<i>Major</i>	Per cent		
	<i>Males</i>	<i>Females</i>	<i>Persons</i>
Psychology only	39.5	51.8	48.6
Arts related	22.5	23.8	23.4
Science related	8.8	8.9	8.9
Business related	14.3	5.8	8.0
Health related	9.5	6.8	7.5
Other	3.4	2.6	2.8
No answer	2.0	0.5	0.9
All majors	100.0	100.0	100.0
<i>Number of respondents</i>	<i>147</i>	<i>429</i>	<i>576</i>

The increase in business-related majors since Over (1983) found that almost no students were taking business-related subjects reflects the changing nature of the labour market, and more importantly, the graduate understanding of that market. This change means that more students will be educationally and attitudinally prepared for employment within the private sector. Business-related majors, however, still only account for 8.0 per cent of the current sample.

The preponderance of arts-related and other subjects with only vague relevance to psychology has been lamented in some quarters. Day (1991) has argued for teaching psychology

“... as a ‘package course’ to include compulsory subjects that are obviously

relevant to psychology in much the same way as medicine, architecture, dentistry and engineering have done for a long time."

This may be useful for those considering psychology as a career, but may be less so for those taking psychology for other reasons, as discussed above. This latter group may well desire to gain a broad-based education, involving study in a number of different and varied areas.

3.3 Level and length of study

Table 2.2 showed that 58 per cent of the sample graduated with BA degrees and 40 per cent with BSc, BSc(Psych) or BBehavSci degrees. Community attitudes towards Arts and Science degrees differ – Science degrees are generally seen as more 'employable' and although neither the Australian Psychological Society nor the State psychology registration boards discriminate between an Arts or Science degree, employer attitudes may differ.

Table 2.3 showed the level of degree undertaken by all respondents. Degrees were divided amongst pass, or three year degrees (62 per cent) and honours, or four year degrees (38 per cent). In actual fact, one third of respondents took longer than three years to complete their degree (Table 3.2). This is attributable to several factors, including a large proportion of part-time students, a number of students deferring for one or more years, and a number of students having to repeat failed subjects.

Table 3.2: Level of first degree and years of study for all respondents

Level of degree	Years of study							No answer	All degrees
	Three	Four	Five	Six	Seven	Eight	Nine or more		
Pass									
Major	232	66	17	19	3	3	7	8	355
Fourth year	2	4	–	2	–	–	–	1	9
Honours	7	145	32	14	8	2	2	2	212
All levels	241	215	49	35	11	5	9	11	576

For those students undertaking a four year degree, 28 per cent took longer than the minimum required time. Two fifths (38 per cent) of these students worked either part-time or full-time during part or all of their degree. For those undertaking a three year degree, 34 per cent required more than three years, and of this proportion, 41 per cent worked during their degree. There were basically two

reasons for working during one's study – either for financial support, or the study was undertaken as an adjunct to an already existing career.

Study at honours (or fourth year) level is possible through two means. The first is to enrol in a four year course with an automatic final honours year, such as the University of New South Wales BSc(Psych)(Hons) program. The second is to be invited, or to earn a fourth year, through meritorious performance during the major sequence (Academic Standards Panel, 1992). This is commonly accepted as performance at a credit level or better.

It should be born in mind that Associate Membership of the Australian Psychological Society requires a fourth year of study. Those students wishing to embark upon a career in psychology will require this extra year. Besides an honours year, alternative fourth year programmes include the last year of a four-year pass degree (such as a BPsych), an MA or MSc qualifying year, or a postgraduate diploma in psychology. Only nine respondents took such a four-year pass degree (Table 3.2).

The completion of legislation in all States for psychologist registration will also mean an increased demand for fourth year courses. A number of universities have recently introduced, or are planning to introduce an 'alternative' fourth year. Unlike traditional honours programs, this alternative generally does not require an average credit grade for entry, has a lesser research component (usually weighted at 20 per cent) and places a greater emphasis upon the teaching of practical and professionally oriented skills.

A recent study (Franklin and Van Dyke, 1991) found that about half the number of graduating students intended to undertake a fourth year. On being advised of the possible availability of new alternative fourth year courses, this figure increased to 79 per cent. The aim of the alternative fourth year is to ensure that graduates emerge with an acceptable level of competence which will meet professional and community standards. Maintaining the integrity of the 'supply' of adequately trained graduates is one side of this issue. An appropriate increase in demand for trained psychologists is the other. Whether or not such a demand exists in the work place will determine if graduates find employment commensurate with their training upon graduation.

Undergraduate study of psychology prepares the graduate for the labour market in a number of different ways. Basically, two broad groups of graduates are discernable – those with three year degrees and those with four year degrees. It is

widely presumed that the occupational prestige and level of employment reached after graduation is commensurate with these two broad groups. Later we shall explore whether this is the case. For now, we note that graduates leave university with differing motivations for study, differing majors, and differing levels and lengths of study. Initially at least, their careers will be largely dependent upon these factors.

Chapter 4

Occupations and industries of employment

The transition from university to labour force can be daunting. Moving from a predictable environment to one in which graduates need to compete in order to find employment involves stress and uncertainty. As far back as the early 1980's studies showed that the percentage of new psychology graduates obtaining employment in positions related to psychology was decreasing, and would continue to decrease as the supply of graduates outnumbered the demand (Lawson, 1980; Over, 1981). Researchers forecast that graduates would need to find employment in areas less traditionally related to psychology. Mullaly et al (1985), in a survey of University of Melbourne honours graduates, found that a substantial proportion managed to secure psychology-related positions in business, industry or administration, and that a minority of graduates were working in clinical or counselling psychology. There were also indications that many of those currently working outside clinical psychology remained aspiring clinicians.

So what do psychology graduates do? This chapter will seek to explain not only what occupations graduates are engaged in, but also the settings in which they are carrying out their occupations – i.e. what they 'do' and where they 'do it'. The chapter will also note how many graduates are working as psychologists, how many are working in psychology-related positions, and how many are working in areas completely unrelated to psychology.

4.1 Occupation

Respondents were asked to give details about all the occupations they had worked in since graduation. From this information, a maximum of five jobs were coded for statistical analysis. Most respondents (92 per cent) had worked in five or less jobs, although a minority (6.5 per cent) had worked in more than five. The average number of jobs worked, for all 576 survey respondents, was 2.8, although this figure is largely dependent upon the respondents' year of graduation and the number of years they had spent in the labour force. Those respondents graduating during 1979–80 had worked in 3.7 jobs on average, whereas 1987–88 graduates had

worked in 2.2 jobs on average.

Almost all respondents (98.5 per cent) had worked in at least one job since graduation. Graduates found employment in a wide variety of settings; 105 different occupations were given in this survey, often bearing no direct relation to psychology.

Table 4.1: Occupation, first to fifth jobs, by ASCO major group

ASCO major group	Per cent					
	Job					
	First	Second	Third	Fourth	Fifth	All jobs
Managers/Administrators	3.8	7.4	13.3	16.5	23.6	8.8
Professionals	66.5	67.2	65.9	66.2	63.9	66.4
Para-professionals	9.4	10.5	9.7	7.2	5.6	9.3
Tradespersons	0.4	0.2	—	—	—	0.2
Clerks	13.7	10.5	6.5	5.0	4.2	10.1
Sales/Service	4.5	3.6	3.9	3.6	2.8	4.0
Plant/Machine operators	0.2	0.2	—	—	—	0.1
Labourers and related	1.6	0.5	0.7	1.4	—	1.0
All groups	100.0	100.0	100.0	100.0	100.0	100.0
<i>Number of respondents</i>	<i>555</i>	<i>421</i>	<i>279</i>	<i>139</i>	<i>72</i>	
Average occupational prestige score	54.0	58.0	60.5	60.0	63.5	57.4
Average hours worked	35.7	36.0	35.9	34.9	34.6	35.5
Average duration (months)	25.4	21.0	20.8	20.5	20.2	22.6

The first to fifth jobs of all respondents were classified into ASCO major groups (Table 4.1). The proportion of graduates working in each of these eight major groups are shown for jobs one to five, with the final column of Table 4.1 showing proportions of **all** occupations, regardless of whether it was the respondents' first job, or their fifth job.

It is apparent that most psychology graduates (66.4 per cent) work as what can be broadly termed 'professionals'. This major group includes scientists, health diagnosis and treatment practitioners, teachers, and social and business professionals. Approximately equal proportions of graduates work as clerks (10.1 per cent), para-professionals (9.3 per cent) and managers or administrators (8.8 per cent). The remainder work in sales and service (4.0 per cent), as labourers (1.0 per cent), as tradespersons (0.2 per cent), or as plant and machine operators (0.1 per cent).

The proportion of persons working as professionals across all jobs remained

fairly constant at about 66 per cent. This is in marked contrast to those working as clerks – this major group dropped fairly sharply from 13.7 per cent of respondents' first jobs to 4.2 per cent of respondents' fifth jobs. It is proposed that a proportion of graduates' first jobs are seen as temporary and of lower prestige, often serving as 'launching pads' for higher career aspirations. Those working as clerks may well fall into this category. Alternatively, some graduates working as clerks may move on to become managers and administrators, partly accounting for this groups' large increase across jobs one to five.

Managers and administrators increased over the five jobs, from 3.8 per cent to 23.6 per cent of respondents. Managerial and senior administrative positions take time to achieve, and hence are more strongly represented later in career development. Number of graduates from other groups will move into this group over time; this is especially the case for clerks. Besides the manager/administrator and professional major groups, all other groups showed a net decrease across jobs one to five. As respondents move into their jobs of choice (which for psychology graduates often lie in the professionals major group), representation in other groups declines.

Data from this sample can be compared with data from the 1986 census (Appendix 5, Table 5). The data from the census shows all persons who indicated that their highest qualification was in psychology, classified by occupational major groups, as of census night. Theoretically, the data represents the entire 'universe' of psychology graduates as at 1986. Table 4.1 shows all jobs held since graduation, and not at any particular point in time as does the census. Regardless of the methodological problems, the census showed that 62.0 per cent of graduates were working as professionals, as compared to 66.4 per cent for the current sample. A further 11.7 per cent of psychology graduates were working as clerks on census night, as opposed to 10.1 per cent for the current sample. Similarly, 11.6 per cent were working as managers and administrators on census night – this sample showed 8.8 per cent. Para-professionals and sales / service totalled 7.1 and 5.2 per cent respectively for the census. Here it was 9.3 and 4.0 per cent. If nothing else, we can conclude that this is not an atypical sample.

As expected, occupational prestige increased across jobs one to five. Using the ANU3 scale (Jones, 1988) we note that the average score for the first job was 54.0, on a par with, for example, a librarian or a policeman (see Appendix 4). By the fifth job, this had increased to 63.5, a similar score to a finance manager, an engineer or

an occupational therapist. A psychologist in contrast, is rated at 80.8, well above the highest average score for any of the five jobs given here. On the one hand this may be seen as underachievement in not attaining the prestige expected of a graduate in psychology. On the other it should again be stressed that most psychology graduates do not work as psychologists. Furthermore, a number of other criteria need to be met before the ability to work as a practising psychologist. These include post-graduate qualifications, supervised work experience and appropriate registration. This may not occur until some years into a graduates' career.

There was little variation in the average number of hours worked across jobs. Rising slightly from 35.7 to 36.0 hours, the figure then decreased to 34.6 hours by job five. Note that this includes part-time jobs; defined here as any job less than 35 hours per week. Indeed, there is evidence of a trend toward part-time or reduced hours work later in one's career, especially for females.

The duration of each job worked decreased across jobs one to five, from 25.4 to 20.2 months, with the most notable decrease occurring between the first and second job (25.4 to 21.0 months). On first impression this may seem somewhat unexpected since, as noted above, the first job after graduation is often a stepping-stone to better and/or higher positions. However, it may take time to accumulate the work experience and expertise needed to carry out the duties of higher positions. It may also take time for a more preferred position to arise. Searching and applying for other jobs also involves effort, competition and uncertainty.

A more detailed breakdown of occupations is given in Table 4.2. The most common occupations are classified by four digit ASCO unit group and ranked by popularity. As has been seen, most of the occupations fall within ASCO major group two – professionals. There is a small number of occupations from groups one (managers and administrators), three (para-professionals), five (clerks) and six (sales and service).

The most popular occupation is that of psychologist. Within this category are those graduates who have recently graduated from university and are working as assistants, as well as those graduates well established in their careers and working as lecturers, senior researchers, chief psychologists or private practitioners. Note that at no time did the proportion of graduates working as a psychologist rise above 20 per cent. Only one in five graduates in psychology actually worked as a psychologist. This figure compares well with Kidd's 1971 survey, which found that

about 17 percent of those majoring in psychology obtained jobs with the label 'psychologist' (reported in Nixon 1987).

Table 4.2: Most common occupations, first to fifth jobs, by ASCO unit groups

ASCO unit group	Per cent					
	Job					All jobs
	First	Second	Third	Fourth	Fifth	
2903 Psychologists	14.4	19.0	17.6	16.5	19.4	16.8
2999 Other professionals	15.1	9.5	7.2	7.2	6.9	10.9
2603 Counsellors	4.1	5.0	5.7	13.7	11.1	5.9
2705 Personnel specialists	4.7	5.0	5.7	5.0	1.4	4.8
2405 Secondary school teachers	6.7	4.0	3.2	0.7	1.4	4.4
3901 Welfare para-professionals	4.9	4.3	3.2	1.4	1.4	3.9
2501 University & CAE teachers	2.7	5.7	4.3	2.9	1.4	3.8
2601 Social workers	3.1	4.0	3.6	3.6	1.4	3.4
3999 Other para-professionals	2.3	4.5	2.9	4.3	2.8	3.3
5999 Other clerks	5.4	3.1	0.4	0.7	1.4	3.1
2799 Other business professionals	2.3	2.9	1.8	1.4	8.3	2.6
2707 Computing professionals	2.0	1.9	2.9	—	1.4	1.9
1313 Public policy managers	—	—	1.4	5.8	11.1	1.6
1399 Other specialist managers	1.0	1.4	2.9	2.2	1.4	1.6
5101 Office secretaries	1.1	2.1	1.4	1.4	2.8	1.6
5301 Accounting clerks	2.2	1.2	1.8	0.7	—	1.6
1309 Personnel managers	0.7	1.2	2.5	2.2	4.2	1.5
2407 Special education teachers	—	1.4	1.4	2.2	—	1.2
3401 Registered nurses	1.3	1.0	1.8	0.7	—	1.2
1301 Finance managers	0.4	1.2	1.4	1.4	2.8	1.0
2505 Extra-systemic teachers & instruct	0.9	1.0	1.1	1.4	1.4	1.0
2605 Lawyers	1.3	1.0	1.1	0.7	—	1.0
2703 Public relations officers	0.4	—	1.8	2.2	—	1.0
2907 Other social scientists	0.7	1.2	1.1	2.2	—	1.0
2107 Life scientists	0.2	0.2	1.4	2.2	2.8	0.8
2905 Education researchers & related	1.3	0.2	1.1	—	—	0.8
2807 Journalists	0.5	0.7	1.1	0.7	1.4	0.8
5303 Insurance & broking clerks	1.1	1.0	0.4	—	—	0.8
6101 Securities & finance dealers	0.4	0.7	—	2.2	—	0.7
— All other occupations	18.8	15.6	17.8	14.4	13.8	16.0
All groups	100.0	100.0	100.0	100.0	100.0	100.0
<i>Number of respondents</i>	<i>555</i>	<i>421</i>	<i>279</i>	<i>139</i>	<i>72</i>	

On first impression, this would lead one to conclude that a degree in psychology is a 'generalist' degree, enabling and preparing the graduate to find employment in a wide variety of settings. An alternative explanation is that large numbers of psychology graduates are being forced to compromise their first career choices due to a lack of suitable positions, and work in other areas. We have already seen that the most popular reason (38 per cent of respondents) given for

studying psychology is 'interest in psychology as a career'. If these figures are correct, then about half (38 minus 20) of those studying in order to commence a career in psychology will either be disappointed upon graduation, or will have changed their minds during the course of their studies.

Data from the 1986 census provides us with further information as to the number of psychology graduates actually working as psychologists. Appendix 5, Table 3 shows both the number of persons holding some qualification in psychology, and those actually working as psychologists, as of census night. Of the 15,553 persons whose highest qualification was in psychology, only 3,848 (or 24.7 per cent) gave their occupation as psychologist. This figure is slightly higher than the corresponding proportion for the current sample, which ranged from 14.4 per cent of psychology graduates working as psychologists in their first occupation to 19.4 per cent in their fifth occupation. Note also that the current survey includes occupations throughout the 1980s, and not at one particular point in time, as for the census. The census figures also show a higher proportion of male graduates working as psychologists (27.3 per cent of males versus 23.1 per cent of females). A number of female graduates may have opted out of the labour force in order to concentrate on home duties or raising families. It may also be that proportionally more men than women find employment as psychologists. This issue will be explored further in Chapter 7.1.

The career path undertaken in order to become a psychologist may involve a number of intermediate steps. Besides further study and accreditation or registration, there may be supervised work experience, or work in psychologically related positions in order to gain appropriate experience. The most common occupations of respondents prior to working as psychologists include ASCO 2999 (Other professionals) (i.e. research assistants or research officers), ASCO 2603 (Counsellors), ASCO 3901 (Welfare para-professionals), ASCO 2501 (University and CAE teachers), and ASCO 2705 (Personnel specialists). All these occupations have, in one form or another, a psychological component. It was not typical for respondents to work in totally unrelated occupations (such as, say, sales and service), whilst waiting for an appropriate position in psychology to arise. The career path to becoming a psychologist was more 'focused'.

The second most common occupation is ASCO unit group 2999 (Other professionals). This somewhat euphemistic group is almost exclusively composed of research assistants and research officers. The proportion of persons working in

this occupation decreased sharply between the first and fifth jobs. These jobs are often temporary or part-time, undertaken whilst engaged in further study or other activities. Again, they may serve as a stepping-stone to more permanent or higher positions.

There is quite a large gap between the second and third most popular occupation, ASCO 2603 (Counsellors). This group showed a net increase in popularity across the five jobs, possibly as a result of people taking part-time counselling positions as an addition to other employment, or mothers returning to the labour force. Counselling includes a number of fields, such as marriage, school, family court, careers, drug and alcohol, and rehabilitation.

Another 4.8 per cent of graduates work in the fourth most common occupation, ASCO 2705 (Personnel specialists). This area includes personnel officers, training officers and staff development officers. This was followed closely by the fifth most common occupation, ASCO 2405 (Secondary school teachers). During the 1980's, psychology was introduced as a subject of study in many secondary schools. Accordingly, numbers of teachers interrupted their careers in order to undertake studies in psychology. First-time graduates also chose to specialise in psychology for their teaching career. This group more often than not continued their studies in order to gain a DipEd before entering the labour force.

Several of the remaining most popular jobs fall within the managerial area. These include ASCO 1313 (Public policy managers), ASCO 1399 (Other specialist managers), ASCO 1309 (Personnel managers) and ASCO 1301 (Finance managers). All bar one of these positions showed net increases in proportion across jobs one to five. As has been noted, this may be due to the amount of time needed to gain seniority and managerial experience.

Again, the 1986 census gives further understanding as to the occupations of psychology graduates. The most common occupations were ordered by type of degree (Appendix 5, Table 6), and showed a statistically significant level of similarity to the current sample ($\chi^2(28)=655.4$, $p<0.001$). The most common occupations in both instances include psychologist, university and CAE teacher, counsellor, welfare para-professional, personnel specialist and secondary school teacher. Note that in this sample ASCO 2999 (Other professionals) ranked second, whereas in the census it ranked quite low. This reflects differences in occupational coding procedures. It would be more appropriate to combine the census' ASCO 2999 (Other professionals) and ASCO 2000 (Professionals, no further description) in

order to better reflect the composition of the current sample's ASCO 2999.

Although all the respondents are graduates in psychology, not all are working in occupations utilising their skills in psychology. We have seen that less than 20 per cent of graduates in psychology actually go on to work as psychologists. Many of the most popular occupations, such as ASCO 2903 (Psychologist), 2603 (Counsellors), 3901 (Welfare para-professionals) and 2601 (Social workers) are either explicitly psychological in nature, or have duties involving skills in psychology. Other occupations with more general descriptions, such as ASCO 2999 (Other professionals), 2705 (Personnel specialists) and even 5999 (Other clerks) may have psychological components. Others such as ASCO 2707 (Computing professionals) and ASCO 5301 (Accounting clerks) have no psychological components at all.

The general nature of many of the job descriptions can lead to uncertainty as to the amount of psychological content. An example of where this may take place is within the State and Federal Public Services, where many of the positions involving psychological skills are given generic labels such as 'Administrative Services Officer' or 'Professional Services Officer'. It is possible then, that respondents may state that their job is clerical or managerial in nature, when in fact it has a substantial psychological component.

It would be difficult to quantify this and ascertain how many respondents actually work in occupations utilising their psychological skills. This would involve a more elaborate survey, asking questions in order to determine the exact nature of the tasks carried out within the occupation. This was not attempted here. However, questions were asked as to whether respondents felt that their study in psychology was relevant to their careers, or whether they wished to work in a field which would better utilise their psychology qualifications. This is expanded upon in Chapter 7.4.

As is evident from Table 4.2, psychology graduates work in a wide variety of occupations – in health, education, welfare, business, sciences, the media and the public service, amongst others. The sheer number of different positions is in marked contrast to more clearly defined careers, such as architecture, medicine, engineering or physiotherapy. Only a minority (some 20 per cent) of psychology graduates will work as psychologists during their careers.

4.2 Industry

Apart from considering occupation, or what graduates 'do', it is also necessary to consider the industry, or setting of their employment – where they 'do it'. One can be a psychologist, for example, in any number of different settings, such as a hospital, university, business, prison or government department. Thus, for each occupation, respondents were also asked to give their type of employer. These responses were then coded to the ABS Australian Standard Industrial Classification (ASIC). Just as for occupation, jobs one to five were coded. The individual ASIC classes were then classified into broad ASIC divisions for jobs one to five (Table 4.3), followed by a summary column for all 1,453 different jobs aggregated together.

Table 4.3: Industry of employment, first to fifth jobs, by ASIC division

	Per cent					
	Job					
ASIC division	First	Second	Third	Fourth	Fifth	All jobs
Agric, forest, fish & hunt	—	0.2	—	—	1.4	0.1
Mining	1.6	1.2	1.1	1.4	1.4	1.4
Manufacturing	2.0	1.9	2.2	2.2	4.2	2.1
Electricity, gas & water	—	0.5	—	—	—	0.1
Construction	0.4	0.2	—	0.7	—	0.3
Wholesale & retail trade	2.4	2.6	4.7	5.1	2.8	3.2
Transport & storage	2.9	3.6	2.2	2.9	4.2	3.0
Communication	1.5	0.7	1.1	—	—	1.0
Finance, prop & business	15.1	16.1	14.7	10.1	15.3	14.8
Public admin & defence	9.3	10.8	11.9	18.1	13.9	11.3
Community services	62.2	59.2	60.4	55.8	55.6	60.1
Rec, pers & other	2.6	2.9	1.8	3.6	1.4	2.5
Non-classifiable	—	—	—	—	1.4	0.1
All divisions	100.0	100.0	100.0	100.0	100.0	100.0
Number of respondents	548	417	278	138	72	

By far the most common employment setting is ASIC Division K – Community services (60.1 per cent), which includes such subdivisions as health, education and welfare. The division showed a small net decrease across the five jobs. The second most common setting is Division I – Finance, property and business services (14.8 per cent). This division remained fairly stable across the five jobs; at any time about 15 per cent of graduates worked in this setting. Division J – Public administration and defence rated similarly (11.3 per cent), with a large number of public servants finding employment within this division. This division

showed a net increase, perhaps capturing some of the 'leakage' from Division K Community services. The remaining divisions were quite small in number, and were mainly blue-collar settings. Some of the more prominent were Wholesale and retail trade, Transport and storage, Recreation, Personal and other services, Manufacturing and Mining. Graduates in psychology, by and large, are employed in the Community services, Finance, property and business, or Public administration and defence industries.

Table 4.4: Most common industry of employment, first to fifth jobs, by ASIC class

ASIC class	Per cent					
	Job					All jobs
	First	Second	Third	Fourth	Fifth	
8241 Universities	13.1	10.1	10.1	4.4	5.6	10.5
8305 Welfare & charitable serv nec	10.4	10.8	8.3	9.4	4.2	9.7
8233 Secondary schools	8.0	6.2	5.8	5.8	2.8	6.6
8157 Commty hlth centre (paramed)	4.2	7.4	7.9	8.0	9.7	6.5
7112 State government admin	4.4	6.0	6.1	10.9	5.6	5.9
8141 Hospitals (except psychiatric)	4.7	6.5	6.5	5.8	8.3	5.9
6144 Savings banks	4.2	5.0	4.0	3.6	2.8	4.3
6383 Market & business consultancy	3.8	2.9	2.9	3.6	6.9	3.5
7111 Federal government admin	2.6	1.9	3.6	3.6	4.2	2.8
8158 Health services nec	2.9	2.6	2.5	2.2	5.6	2.8
8151 Medicine	2.6	2.2	2.9	2.9	5.6	2.7
8242 College of advanced education	1.5	1.4	1.4	2.9	—	1.5
7113 Local government admin	1.6	0.5	1.4	2.2	2.8	1.4
8243 TAFE's	0.6	1.7	1.4	2.9	1.4	1.3
8461 Research & scientific instit	0.9	1.7	1.1	2.2	1.4	1.3
4814 Department stores	0.7	1.0	2.2	2.2	—	1.2
6371 Legal services	2.0	0.7	0.7	0.7	—	1.2
8232 Primary schools	1.8	0.7	0.7	—	2.8	1.2
8491 Employment services	1.3	1.2	1.1	0.7	1.4	1.2
1300 Oil and gas	0.9	0.7	1.1	1.5	1.4	1.0
5900 Communication	1.5	0.7	1.1	—	—	1.0
8142 Psychiatric hospitals	0.9	1.0	1.1	2.2	—	1.0
8244 Education nec	1.1	1.4	0.4	0.7	1.4	1.0
8306 Religious institutions	1.3	0.7	1.1	0.7	—	1.0
8156 Commty hlth centre (medical)	0.7	0.5	1.4	0.7	2.8	0.9
8235 Special schools	0.7	0.7	1.4	1.5	—	0.9
5405 International air transport	0.4	1.0	0.7	1.5	1.4	0.8
6232 Superannuation funds	0.6	1.0	1.4	—	—	0.8
8493 Prison reformatories	1.5	0.2	0.7	—	—	0.8
7120 Justice	0.4	0.7	0.7	1.5	1.4	0.7
8492 Police	0.6	0.2	1.8	—	1.4	0.7
— All other industries	18.1	20.7	16.5	15.7	19.1	17.9
All groups	100.0	100.0	100.0	100.0	100.0	100.0
<i>Number of respondents</i>	<i>548</i>	<i>417</i>	<i>278</i>	<i>138</i>	<i>72</i>	

A detailed breakdown of employment settings is given in Table 4.4. The most common employment setting is the university (10.5 per cent of all jobs), although the proportion employed within this setting decreased across the five jobs – again, the university is often a launching pad for future employment.

ASIC 8305 (Welfare and charitable services not elsewhere classified) was the second most common setting (9.7 per cent of all jobs). This class includes such primary activities as adoption services, childminding centres (but not pre-schools), charity or welfare counselling services, family welfare agencies, marriage guidance centres, refuges, sheltered workshops and other such welfare centres and services.

ASIC 8233 (Secondary schools) ranked third with 6.6 per cent of graduates on average employed within this setting. We see that 8 per cent of graduates found their first employment within a secondary school, however less than 3 per cent of those graduates working a fifth job were so employed. Graduates opted out of this setting for employment elsewhere. The reverse is true for ASIC 8157 (Community health centres, para-medical). About the same number of graduates (6.5 per cent) worked in this setting, but the class showed a steady increase in popularity between jobs one and five. This class consisted of establishments mainly engaged in providing para-medical, nursing and/or health related social workers' services, mainly on the account of government agencies or non-profit organisations. It includes such primary activities as community health centre operation, child health centre operation, drug referral centre operation and other paramedical services. It does not involve the provision of medical services.

Equal fifth is ASIC 7112 (State government administration) and ASIC 8141 (Hospitals, except psychiatric). Those graduates working in State government administration were exclusively government administrators. Numbers of other graduates worked for State governments, however their primary activity was other than government administration, and their setting other than government offices. Respondents were not coded as to who their employer was, rather they were coded to the class that best represented the economic activity that the respondent was engaged in (ABS, 1985). For example, an administrator could be employed in a State government-owned hospital, yet be coded to ASIC class 8141 (Hospitals), and not ASIC class 7112 (State government administration).

The remainder of Table 4.4 shows a large variety of ASIC classes, mostly falling within ASIC Division K – Community services, but also within Division I – Finance, property and business services and Division J – Public administration and

defence. Division I classes included 6144 (Savings banks), 6383 (Market and business consultancy services), 6371 (Legal services) and 6232 (Superannuation funds). Division J classes included, apart from 7112 (State government administration), 7111 (Federal government administration), 7113 (Local government administration) and 7120 (Justice). These three divisions account for over 86 per cent of respondents' settings of employment.

One of the most striking features of Table 4.4 is the sheer number of different settings in which psychology graduates found employment – 123 separate ASIC classes. In this respect, the variety of industries mirrors the variety of occupations. Although there are a number of common settings, there is no one class in which the psychology graduate typically finds employment. This may change, however, were we to consider different graduate sub-populations, such as pass versus honours or higher degree graduates. It may well be that those with higher qualifications find employment in more specific areas. We can say, however, that there is one main industry of employment - Community services, and two lesser, but significant industries – Finance, property and business, and Public administration and defence.

4.3 Occupation by industry

Having ascertained the occupations and industries of psychology graduates, it now remains to cross-classify the two, in order to give a full picture of graduates' occupations, and the industries in which these occupations are carried out.

The cross-classification of ASCO major groups and ASIC divisions in Table 4.5 is based on an aggregation of all respondents' jobs, regardless of whether it was the first job or the fifth job following graduation. Almost 1,500 different jobs were included, since many of the 576 respondents had worked in several jobs following the completion of their psychology degree. The table shows that almost half (47.7 per cent) of the respondents worked as professionals in the area of community services. This was by far the largest single cell.

Table 4.5: Occupation (ASCO major group) and industry of employment (ASIC division), all respondents' jobs aggregated^a

Per cent									
ASCO major group									
ASIC division	Manage/ Admin	Prof	Para- prof	Trades	Clerks	Sales/ Service	Plant/ Machine	Labour	All groups
Agric	—	0.1	—	0.1	—	—	—	—	0.1
Mining	0.3	0.6	0.1	—	0.3	—	—	—	1.4
Manuf	0.5	1.0	0.1	0.1	0.3	0.1	0.1	0.1	2.1
Elect,gas,water	—	0.1	—	—	0.1	—	—	—	0.1
Constr	—	0.1	0.1	—	0.1	—	—	0.1	0.3
Trade	0.8	1.0	0.3	—	0.3	0.7	—	0.1	3.1
Transp, store	0.2	1.7	0.3	—	0.3	0.5	—	—	3.0
Communication	0.1	0.8	0.1	—	—	—	—	—	1.0
Finance, prop, bus	2.4	6.8	0.4	—	3.6	1.3	—	0.2	14.7
Public admin, def	2.0	5.3	1.6	—	2.1	0.1	—	0.1	11.2
Comm serv	1.8	47.7	6.3	—	2.7	0.6	—	0.4	59.5
Rec, pers	0.4	1.0	—	0.1	0.1	0.8	0.1	0.1	2.5
Non-classif	—	0.1	—	—	—	—	—	—	0.1
All divisions	8.8	66.4	9.3	0.2	10.1	4.0	0.1	1.0	100.0

(a) First to fifth jobs of all respondents were aggregated. N=1,466.

Professionals also found employment in the Finance, property and business class (6.8 per cent), as well as the Public administration and defence class (5.3 per cent). Clerks are scattered amongst these same three divisions, as are Managers and administrators, although the latter found employment more commonly in the Finance, property and business class (2.4 per cent) as well as the Public administration and defence class (2.0 per cent), as opposed to the Community services class (1.8 per cent). Para-professionals worked largely in the Community

services class (6.3 per cent). The remainder of respondents were scattered amongst the various ASCO major groups and ASIC divisions – some professionals found employment in the Manufacturing, Wholesale and retail trade, Transport and storage, and Recreation, personal and other services divisions.

We have seen that most of the occupations (85.8 per cent) carried out by respondents fall within three ASCO major groups – Professionals, Clerks and Para-professionals. Similarly, most of the industries in which graduates worked (85.4 per cent) were within the Community services, Finance, property and business services, and Public administration and defence ASIC divisions.

Presentation of cross-classified data for the next level of classification (ASCO unit groups and ASIC classes) poses some problems. A 'scattergram' of the most common ASCO unit groups and ASIC classes within the three most common ASIC divisions is presented in Table 4.6. All respondents' jobs (be it their first or their fifth) were again aggregated, but in this case were shown as numbers of jobs, not proportions. The 'scattergram' summarises the most popular industries and occupations in which psychology graduates found employment.

Previously we found that the most common occupation was ASCO unit group 2903 (Psychologists). The 'scattergram' shows that those psychology graduates who go on to work as psychologists most typically work in the following industries:–

- ASIC 8157 Community health centres (paramedical) 25.2 per cent

Primary activities carried out in ASIC 8157 include community health centre operation, child health centre operation, drug referral centre operation and nursing and other para-medical services.

- ASIC 8141 Hospitals (except psychiatric) 17.5 per cent
- ASIC 8151 Medicine 13.4 per cent

The primary activities carried out in ASIC 8151 include private practice clinical psychology, i.e. counselling and therapy carried out either full- or part-time on one's own account.

- ASIC 8305 Welfare and charitable services not elsewhere classified 9.8 per cent

Primary activities carried out in ASIC 8305 include adoption services, adult day care centre operation, Alcoholics Anonymous, charity services, childminding centre operation, counselling services, family welfare agency operation, marriage guidance services, refuge operation, sheltered workshop operation and operating

other social welfare centres or services.

Table 4.6: Most common occupations (ASCO unit group) by industries of employment (ASIC class), all respondents aggregated^a

	Number														
	ASCO unit group														
ASIC class	1399	2405	2501	2601	2603	2705	2707	2799	2903	2999	3901	3999	5999	Other	All Total
Division I: Finance, property and business services															
6144						8	2	4	1	3		4	13	27	62
6232						1								10	11
6240	1						1							5	7
6371				1						1				15	17
6372								1	1					7	9
6383	5					1	5	8	8	3			6	15	51
Division J: Public administration and defence															
7111						2			4	4	1	5	4	20	40
7112	3			3	1	13		9	10	6	1	9	4	26	85
7113										2	3		3	12	20
7120					5				1	2	1			1	10
7200						1			2	1				4	8
Division K: Community services															
8141			1	5	2	1			43	12				21	85
8142									11	1				3	15
8151									33	1				5	39
8156					4			1	4					4	13
8157				7	12	1			62	1	2	1		8	94
8158	1			2	6			2	15	4	2	1		8	41
8232								1						16	17
8233		65		1	11	1			6				1	11	96
8235														13	13
8241	2		36		4		2	1	5	73		11		18	152
8242			17		1					2		1		1	22
8243			1		8					1		1		8	19
8244			1		1	1				2			4	6	15
8251														7	7
8304				1							6			2	9
8305	1			30	22	4	2		24		32	2	3	21	141
8306					2	1		1		1	6			3	14
8461	1					1	1		1	10			1	4	19
8472	1				1			1		2		1		2	8
8491	1					6			4	2		1		3	17
8492									3	3	2			2	10
8493					3		1		4	1				4	13
All other	7				4	28	14	9	4	17		11	6	187	287
Total	23	65	56	50	87	70	28	38	246	155	56	48	45	499	1,466

(a) First to fifth jobs of all respondents were aggregated. N=1,466. Refer to Appendix 2 and 3 for full titles of ASIC classes and ASCO unit groups.

Graduates finding employment in the second most popular occupation ASCO 2999 (Other professionals), which includes mainly research assistants and officers, most typically work in the following industries:-

- ASIC 8241 Universities 47.1 per cent
- ASIC 8141 Hospitals (except psychiatric) 7.7 per cent
- ASIC 8461 Research and scientific institutions 6.5 per cent

The third most popular occupation was ASCO 2603 (Counsellors), and they most typically found employment in:-

- ASIC 8305 Welfare and charitable services not elsewhere classified 25.3 per cent
- ASIC 8157 Community health centres (paramedical) 13.8 per cent
- ASIC 8233 Secondary schools 12.6 per cent

Some other notable settings were:-

- ASCO 2405 (Secondary school teachers) working in ASIC 8233 (Secondary schools)
- ASCO 2501 (University and CAE teachers) working in ASIC 8241 (Universities) and ASIC 8242 (CAE's)
- ASCO 2601 (Social workers) working in ASIC 8305 (Welfare and charitable services not elsewhere classified)
- ASCO 2705 (Personnel specialists) working in ASIC 7112 (State government administration) and ASIC 6144 (Savings banks)
- ASCO 2707 (Computing professionals) working in ASIC 6383 (Market and business consultancy services)
- ASCO 3901 (Welfare para-professionals) working in ASIC 8305 (Welfare and charitable services not elsewhere classified)

Some comparisons with data from the 1986 Census are possible (Appendix 5, Table 7). The census data shows in which industry psychologists (ASCO 2903) are working. Whereas the current sample showed that 4.1, 6.9 and 87.4 per cent of psychologists were working in Divisions I, J and K respectively, the census showed 3.2, 10.2 and 83.1 per cent respectively. However, at a finer level of classification, differences between the two samples are more marked. For example, 8.7 per cent of census respondents found employment in ASIC 8141 (Hospitals, except psychiatric), as opposed to 17.5 per cent of the current sample finding employment in the same setting. Education at all levels (ASICs 8232 Primary schools, 8233

Secondary schools, 8241 Universities and 8244 Education not elsewhere classified) is markedly under-represented in the current sample, in comparison with the 1986 census. The sample size for the current sample (246 different positions across all five jobs) may preclude too detailed a comparison.

The cross-classification of both occupations and industries of employment reveal that almost half (47.7 per cent) of this sample of psychology graduates work as Professionals within the Community services industry. More specifically, the Professionals major group is largely composed of two sub-categories – firstly, psychologists working in community health centres, hospitals, privately, or in a wide variety of miscellaneous settings; and secondly, research assistants and officers working in universities, hospitals and research and scientific institutions. Although these are the major areas, we have noted that psychology graduates find employment in a whole host of different occupations and industries.

Chapter 5

Graduate cohorts

Chapter four has shown in detail the various occupations and industries of employment for psychology graduates. The data aggregated all respondents, regardless of their year of graduation, and thus masked any longitudinal trends. If there had been any changes in the labour market over time, this cross-sectional analysis would not have shown it.

An alternative is to adopt a longitudinal approach, measuring the career status of cohorts of graduates over time. Sampling different graduating years will then allow longitudinal comparisons (members of the same cohort at different times after graduation), cross-sectional comparisons (members of different cohorts at the same point in time), and time-lag comparisons (graduates from different cohorts at the same time after graduation).

This chapter will seek to examine changes in the psychology labour market during the 1980's and early 1990's, by examining the employment trends of three different cohorts of graduates.

5.1 Graduate status over time

Table 5.1 shows the career status of three different graduate cohorts – those graduating in 1979 or 1980, those graduating in 1983 or 1984 and those graduating in 1987 or 1988. Respondents were asked to indicate what their status was at two yearly intervals, and were presented with a number of options from which to choose (Appendix 1, survey part 3). The options included whether graduates were studying, working, otherwise engaged, or combinations of these.

Further study full-time

For all three cohorts, the net proportion of students engaged in further full-time study decreased over time. As students complete post-graduate or other studies, they generally move into the labour force. The greatest proportion of students undertaking post-graduate study were doing so in the first few years after graduation. Many of these students would have done so in order to gain the fourth

year qualifications required for Associate Membership of the Australian Psychological Society, or registration with State psychology boards, after which they too would presumably enter the labour force.

Table 5.1: Graduate cohort status, selected years 1981 to 1991

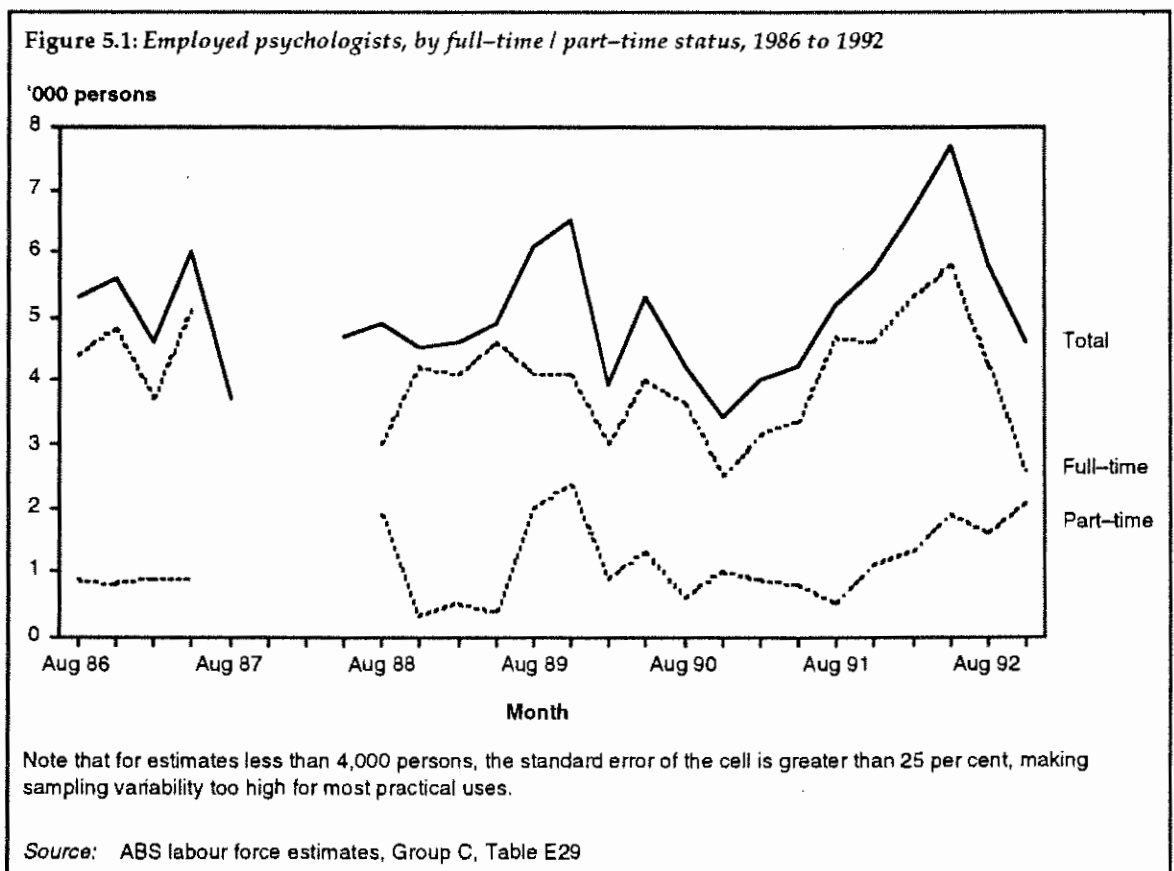
Graduate cohort	Per cent					
	Status at 30 April—					
	1981	1983	1985	1987	1989	1991
1979–80 graduates						
Study full-time	16.5	11.9	11.9	2.8	5.5	—
Work full-time	66.1	69.7	72.5	75.2	64.2	58.7
Work full-time, study part-time	1.8	1.8	1.8	0.9	1.8	10.1
Work part-time	7.3	6.4	1.8	5.5	10.1	14.7
Work part-time, study part-time	0.9	1.8	0.9	1.8	1.8	1.8
Unavailable	1.8	6.4	10.1	11.9	13.8	13.8
Not working or seeking work	0.9	—	—	0.9	1.8	—
Unemployed	3.7	1.8	0.9	0.9	0.9	—
No answer	0.9	—	—	—	—	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
<i>Number of respondents</i>	<i>109</i>	<i>109</i>	<i>109</i>	<i>109</i>	<i>109</i>	<i>109</i>
1983–84 graduates						
Study full-time			22.3	5.8	5.8	7.8
Work full-time			55.3	73.8	70.9	64.1
Work full-time, study part-time			1.9	6.8	6.8	11.7
Work part-time			3.9	7.8	9.7	5.8
Work part-time, study part-time			2.9	—	—	1.9
Unavailable			6.8	3.9	3.9	5.8
Not working or seeking work			3.9	1.0	1.9	1.0
Unemployed			2.9	1.0	1.0	—
No answer			—	—	—	1.9
Total			100.0	100.0	100.0	100.0
<i>Number of respondents</i>			<i>103</i>	<i>103</i>	<i>103</i>	<i>103</i>
1987–88 graduates						
Study full-time					20.6	14.7
Work full-time					55.0	52.1
Work full-time, study part-time					3.8	16.0
Work part-time					8.8	7.6
Work part-time, study part-time					2.9	3.4
Unavailable					4.6	2.5
Not working or seeking work					—	—
Unemployed					2.9	0.8
No answer					1.3	2.1
Total					100.0	100.0
<i>Number of respondents</i>					<i>238</i>	<i>238</i>

From these data, it is not entirely clear whether more students returned to post-graduate study throughout the 1980's. The proportions continuing study or

returning to study in the first year after graduation across the three cohorts increased from 16.5 per cent to 22.3 per cent, but then dropped slightly to 20.6 per cent. For the third year after graduation, the proportion decreased from 11.9 per cent to 5.8 per cent, but then increased to 14.7 per cent. A recent study (Franklin and Van Dyke, 1991) has pointed out that expected demand for fourth year courses will increase since registration has been legislated in all Australian states. This may affect the numbers of graduates returning to study in future years. If this is so, we can expect to see more graduates returning to study in the future.

Work full-time

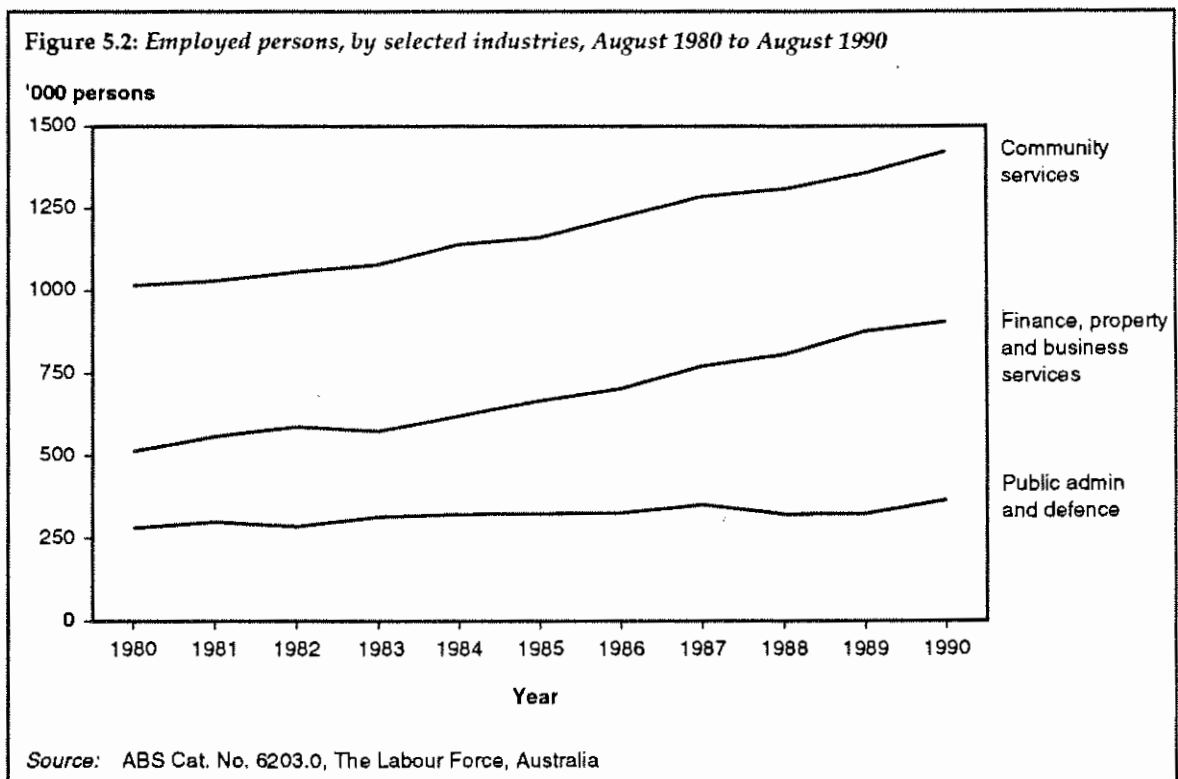
Data for each cohort shows the proportion of graduates working full-time increasing to a point, then decreasing. Instead of occurring at approximately the same point within each cohort's career, this phenomenon occurred at about the same fixed point in time for each of the three cohorts – 1987.



One possible explanation is that the economic climate of the late 1980's led to retrenchments, or forced graduates to adopt other work patterns, such as part-time work. However, ABS estimates of both the size of the psychology labour force (Figure 5.1) and the size of the three main industries employing psychology

graduates (Figure 5.2) over this period do not lend conclusive weight to this hypothesis. Unfortunately, labour force estimates for psychology are not available for part of 1987–88, so it is not possible to comment on this with any degree of certainty.

It is clear that the size of the psychology labour force (both part-time and full-time) fluctuates. Figure 5.1 shows a low point of about 3,500 persons towards the end of 1990, and a high point approaching 8,000 persons in mid 1992. The reasons for these marked fluctuations are not immediately obvious.



Employment trends in the three main industries employing graduates in psychology give no indication of labour force reductions around 1987 (Figure 5.2). Indeed, the trend during this period of time was towards an increased labour force. The main contributor to labour force expansion during the late 1980's was the increase in the participation rate of women (ABS, 1993). Between 1986 and 1991, the participation rate for all women increased from 61.5 per cent to 67.3 per cent. For married women, the increase was even more notable – from 57 per cent in 1986 to 65 per cent in 1991. As previously noted, about two thirds of psychology graduates are female.

For this current sample, the point at which the proportion of persons engaged

in full-time work begins to decrease may represent numbers of women who opt out of the labour force in order to begin families. It may also be artefactual that this phenomenon seemed to occur at the same point in time for all three cohorts.

It is worth noting that the highest proportion of graduates working full-time (including those also studying part-time) was 76.1 per cent (the 1979–80 cohort in 1987). The lowest proportion was 57.2 per cent (the 1983–84 cohort in 1985). Thus, at any one point in time, between 23.9 and 42.8 per cent of graduates (representing a sizeable potential labour force) were engaged in study, part-time work, were looking for work or were otherwise unavailable.

Also to be noted is the fact that for the two later cohorts, working full-time and studying part-time became an increasingly popular option, perhaps to increase employment opportunities through higher degree qualifications. Economic factors may also force graduates to adopt this option – Austudy and other social welfare may not be sufficient for mature age students who might have families to support. However, it is more likely that the latter group would adopt the work part-time, study part-time option.

Work part-time

Accompanying the decrease in full-time work was a proportionate increase in part-time work. This effect is partly mirrored in Figure 5.1, which confirms a net increase in persons working part-time between 1986 and 1992. This option became less popular during the first few years of graduates' working lives, then became more popular later in their careers. We can hypothesise that as new graduates found stable, full-time employment, they no longer relied on the work experience or part-time jobs gained whilst still studying or straight after graduation. Later, numbers of (female) graduates may also leave the full-time labour force in order to take up home duties. At this point, they may opt to take up part-time employment. Graduates who returned to study when further advanced in their careers may also do the same.

Unavailable / Not working or seeking work

There was also a general increase in the unavailability for work or study over the time period considered. Anecdotal evidence suggests that many graduates chose to travel or take a year off following completion of their studies and prior to entering the labour force. Later in their careers, numbers of female graduates (who composed the bulk of the sample) may choose to start families. It is possible that

there were also a number of retirees, especially amongst those who enrolled as mature-age students. For the earliest cohort, almost 14 per cent of graduates were unavailable for employment ten years after graduation. This represents a sizeable proportion of the labour force.

Appendix 5, Table 4, detailing census data, shows comparable figures. At the time of the 1981 census, 16.8 per cent of those persons whose highest qualification was in psychology were either not participating in the labour force, or did not reply. In 1986, the proportion was 15.4 per cent. If these figures are disaggregated by sex, they become even more revealing. In 1981, 9.1 per cent of male graduates and 23.1 per cent of female graduates were not in the labour force or did not reply. In 1986, the figures were 9.3 per cent of males and 19.5 per cent of females. For both males and females, the higher the university qualification gained, the higher the labour force participation rate. In 1981, 16.6 per cent of females with higher degrees were not in the labour force. For those with diplomas, this figure rose to 34.2 per cent. In 1986, the corresponding figures were 15.4 per cent and 32.1 per cent. For males, the rate is about half of those for females. This lends weight to the idea that those persons who have invested more time in their study, and have gained higher degrees, are less likely to opt out of the labour force.

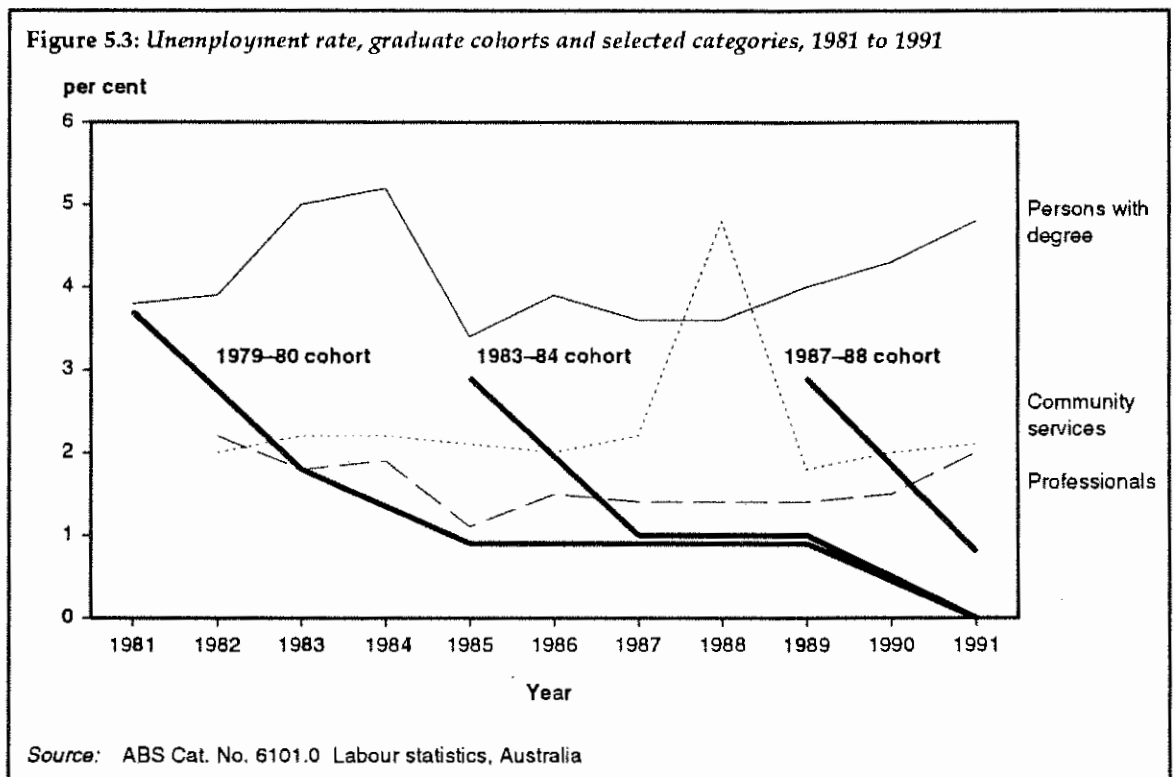
Unemployed

Apart from the first year after graduation, when many respondents were still searching for jobs, the unemployment rate in the current sample never rose above two per cent. This is somewhat in contrast with the census results (Appendix 5, Table 4) of 3.5 per cent unemployment in 1981 and 3.9 per cent in 1986, and may reflect an element of sample bias on the part of the present survey. Again, the higher the degree, the less the unemployment rate – in 1986, census results showed that 2.4 per cent of those with higher degrees were unemployed, rising to 5.5 per cent of those with diplomas. Unemployment rates at all degree levels were consistently higher (but only marginally) for women.

The cohort unemployment rates are compared with a number of other unemployment rates derived from Australian Bureau of Statistics labour force surveys in Figure 5.3, including all persons holding a degree, all persons last employed as professionals and all persons last employed in the community services industry. These are the categories that best describe psychology graduates.

In each case, the cohort unemployment rates compare favourably. This is hardly surprising however, since the graduates responding to this survey are more

likely to be those who have demonstrated successful careers. It is possible, therefore, that the real unemployment rate amongst psychology graduates is somewhat under-represented.



5.2 Changes in occupations and industries of employment

Those persons working full-time in each of the three graduate cohorts were classified into ASCO major occupational groups and ASIC industry divisions (Table 5.2). Apart from showing the areas of employment at two-yearly intervals, the table also shows an average across all the years surveyed. This average serves as a rough indicator for each of the occupational groups and industry divisions, however it will mask any longitudinal trends over time.

Occupational major groups

Psychology graduates typically find employment within four ASCO major groups – managers and administrators, professionals, para-professionals and clerks. Few graduates begin their careers as managers/administrators; longitudinally however, more graduates find employment within this setting. The 1979–80 cohort saw only 1.6 per cent of psychology graduates employed as managers or administrators after one year, rising to 15.9 per cent after ten years. The average measure shows little change in this group over each of the three cohorts – 10.9 per cent of all 1979–80 graduates worked in this group, rising slightly to 12.8 per cent of 1983–84 graduates, and then settling to 10.1 per cent of 1987–88 graduates. This average measure is not a good indicator for this particular group, because of the marked longitudinal effect. Thus, 1987–88 graduates may not have had enough time to move into this group, assuming this cohort will show similar trends to the two earlier cohorts. There is evidence that employment within the managers/administrators group is becoming a more popular first option for graduates. One year after graduation saw 1.6 per cent of all 1979–80 graduates employed within this group. This rose to 7.4 per cent of 1983–84 graduates one year after graduation and 9.6 per cent of 1987–88 graduates one year after graduation. More psychology graduates are finding employment as managers/administrators earlier in their careers.

The largest occupational group, professionals, remained fairly stable for each of the three cohorts if considered longitudinally. Cross-sectionally, however, professionals became a less popular choice. Three years after graduation, 74.0 per cent of the 1979–80 graduates, 69.0 per cent of the 1983–84 graduates and 64.1 per cent of the 1987–88 graduates were employed as professionals. If measured on average, 73.4, 68.8 and 61.2 per cent of each cohort worked as professionals. From these data, it seems that throughout the 1980's, less new graduates chose to work as professionals. Those who began work as professionals chose to stay within this

major occupational group.

Table 5.2: Graduate cohorts, major occupational groups and industry divisions of employment, selected years 1981 to 91

	Per cent						
	Status at 30 April—						
Graduate cohort	1981	1983	1985	1987	1989	1991	Average
1979–80 graduates							
Managers/Administrators	1.6	5.5	10.3	13.4	17.1	15.9	10.9
Professionals	70.5	74.0	75.6	74.4	72.9	72.5	73.4
Para-professionals	9.8	6.8	6.4	6.1	7.1	8.7	7.4
Clerks	14.8	12.3	5.1	3.7	2.9	2.9	6.7
All other occupational groups	3.2	1.4	2.6	2.4	—	—	1.6
Number of respondents	61	73	78	82	70	69	
Finance, property & business	13.8	14.3	14.5	9.9	13.0	10.3	12.6
Public admin and defence	15.5	15.7	18.4	19.8	15.9	17.6	17.3
Community services	67.2	65.7	59.2	60.5	62.3	61.8	62.6
All other industry divisions	3.5	4.3	7.9	9.8	8.8	10.3	7.5
Number of respondents	58	70	76	81	69	68	
1983–84 graduates							
Managers/Administrators			7.4	8.3	18.4	16.2	12.8
Professionals			68.5	69.0	65.8	71.6	68.8
Para-professionals			3.7	7.1	5.3	2.7	4.9
Clerks			13.0	11.9	3.9	1.4	7.3
All other occupational groups			7.4	3.7	6.6	8.1	6.2
Number of respondents			54	84	76	74	
Finance, property & business			24.5	14.3	16.0	20.8	18.3
Public admin and defence			7.5	7.1	9.3	5.6	7.4
Community services			52.8	64.3	57.3	58.3	58.8
All other industry divisions			15.2	14.3	17.4	15.3	15.5
Number of respondents			53	84	75	72	
1987–88 graduates							
Managers/Administrators					9.6	10.5	10.1
Professionals					57.6	64.1	61.2
Para-professionals					11.2	15.0	13.3
Clerks					17.6	7.2	11.9
All other occupational groups					4.0	3.2	3.5
Number of respondents					125	153	
Finance, property & business					27.5	26.1	26.7
Public admin and defence					10.8	12.4	11.7
Community services					42.5	49.0	46.2
All other industry divisions					19.2	12.5	15.4
Number of respondents					120	153	

A minority of graduates worked as para-professionals. Longitudinally, the cohorts showed a degree of stability, but in contrast, each cohort showed quite different proportions working as para-professionals. About 7 per cent of the 1979–

80 cohort worked in this major occupational group, dropping slightly to about 5 per cent of the 1983–84 cohort, and then rising to about 13 per cent of the 1987–88 cohort. Three years after graduation, 6.8, 7.1 and 15.0 per cent of each cohort were working within the para-professional major group. It could be conjectured that occupations within this group are becoming a more popular option.

For each cohort, working as a clerk became a less popular option over time. For the 1979–80 cohort, almost 15 per cent were working as clerks one year after graduation. This had fallen to less than 3 per cent ten years after graduation. It may well be that the rapid decrease in the proportion of each cohort working as clerks is mirrored in the accompanying increase of graduates working as managers / administrators. Those clerks who gain work experience, seniority and promotions may progress to the managerial / senior administrative level. Employment as a clerk, however, did rise in popularity as a first employment option – from 14.8 per cent of 1979–80 graduates to 17.6 per cent of 1987–88 graduates. Again in this case, using the average measure as an indicator of overall trends may be misleading, due to the marked longitudinal effect. There may be some indication that employment within this occupational group is becoming less popular – three years after graduation, 12.3 per cent of employed 1979–80 graduates were working as clerks. This fell to 11.9 per cent of 1983–84 graduates and 7.2 per cent of 1987–88 graduates.

The other occupational groups, including tradespersons, sales/service, plant/machine operators and labourers account for the remainder. Only the middle cohort, 1983–84 graduates, ever rose above 4 per cent of graduates working within these other occupational groups. About 6 per cent of the 1983–84 graduates worked at any one time within these remaining major groups.

On a broad level, each of the three cohorts showed similar longitudinal trends. Professionals and para-professionals tended to maintain a balance across time, whereas managers/administrators grew in popularity and clerks decreased in popularity. Cross-sectionally, however, working as a professional became a less popular option. Graduates were more likely to find employment as managers/administrators, para-professionals or possibly clerks. What may once have been a typical area of employment for psychology graduates, a professional, became less so throughout the 1980's. Graduates began to find employment in different major groups.

Industry divisions

Table 5.2 also shows the main industry divisions for those respondents

working full-time within each graduate cohort. Psychology graduates typically find employment in either the finance, property and business industry, the public administration and defence industry or the community services industry.

The finance, property and business industry became increasingly popular as the area in which graduates chose to work. About 13 per cent of 1979–80 graduates were working in this industry at any one time. This rose to about 18 per cent of 1983–84 graduates and 27 per cent of 1987–88 graduates. This industry division also became an increasingly popular first choice for graduates. One year after graduation, 13.8 per cent of 1979–80 graduates, 24.5 per cent of 1983–84 graduates and 27.5 per cent of 1987–88 graduates were working within this industry. The industry represents one of the major growth areas for psychology graduates during the 1980's. This growth was mirrored Australia-wide. Figure 5.2 shows growth within this division from 515,000 to 904,300 persons (ABS, 1993). In 1980, this division accounted for 8.2 per cent of the entire employed labour force. By 1990 this figure had risen to 11.6 per cent. Psychology graduates were not slow to exploit these new employment opportunities.

Public administration and defence showed a net decrease across the first two cohorts, from 17.3 per cent of 1979–80 graduates to 7.4 per cent of 1983–84 graduates. The proportion increased for the final cohort to 11.7 per cent. Each cohort showed longitudinal stability. Figure 5.2 shows that this industry, which includes much of the public service, employed about the same number of persons throughout the 1980's – 4.5 per cent of the labour force in 1980, and 4.7 per cent in 1990. The current sample showed no growth in this industry between the three cohorts – in fact there was a net loss. Public administration, especially the State and Federal Public Services, has been a traditional employer of psychology graduates, and in the light of flat, or decreased traditional opportunities within this industry, graduates sought employment in more promising areas of the industry, or different industries altogether.

Although stable longitudinally for each cohort, the community service industry decreased substantially across the three cohorts, from 62.6 per cent of 1979–80 graduates to 58.8 per cent of 1983–84 graduates and 46.2 per cent of 1987–88 graduates. This decrease is against the Australia-wide trend of an increase in the community services industry (Figure 5.2). Between 1980 and 1990, employment rose from 1,014,600 persons to 1,422,800 persons – an increase from 16.2 to 18.2 per cent of the labour force. For this current sample, although the majority of graduates

found employment within this industry, its domination was substantially eroded throughout the 1980's.

The remaining industries such as manufacturing, wholesale and retail trade, transport and storage, and recreation, personal and other services, showed some evidence of becoming increasingly popular as the preferred sphere of employment. The trend for the 1979–80 cohort showed that employment in these industries steadily increased, from 3.5 per cent to 10.3 per cent over ten years. The two later cohorts showed a steady level of participation of about 15 per cent for all years.

It is possible that by the mid-80's, the later cohorts understood that the graduate psychology market was no longer as predictable as it once was. Decreased opportunities in traditional areas of employment, combined with increased opportunities in newer areas meant a shift in the composition of the psychology labour market. This is born out by the rapid increase in the finance, property and business industry, the decrease in the community service industry, and the sluggish performance of the public administration and defence industry.

This effect was foreseen by a number of researchers. Over (1981, 1983) argued that as a result of decreased recruitment quotas within traditional employment sectors, graduates would need to seek employment in a wider variety of roles and settings. Reports by Scott and also Wearing (see Kelly, Mullaly, Macleish, Francey and Wearing, 1983), analysing advertisement studies between 1977 and 1981 indicated that during this period there was a decline in available positions in explicitly psychological areas, such as counselling, clinical psychology and tertiary teaching, and a rise in opportunities in personnel, management training and administration. A later study by Mullaly, Kelly and Wearing (1985) found that a substantial proportion of their sample of honours psychology graduates were being employed in psychology-related positions in business, industry or administration.

Occupational unit groups

In order to best gauge specific changes in the popularity of occupations between the three cohorts, it was decided to examine those working full-time in each cohort at a certain point after their graduation. Table 4.2 showed what were the most common occupations for graduates in psychology. Thus, Table 5.3 shows what were the most common occupations for each cohort three years after graduation. It was decided to use the three year mark, since one year would have given graduates only limited time to embark upon or settle into a career. Any more

than three years would mean neglecting the 1987–88 cohort. Table 5.3 allows conclusions to be drawn about changes in specific preferred employment settings during the 1980's.

Table 5.3: Most common occupations, graduate cohorts three years after graduation

<i>ASCO unit group</i>	Per cent		
	<i>1979–80 cohort as at 1983</i>	<i>1983–84 cohort as at 1987</i>	<i>1987–88 cohort as at 1991</i>
2903 Psychologists	12.7	20.8	16.6
2999 Other professionals	4.2	9.1	8.6
2603 Counsellors	2.8	2.6	6.0
2705 Personnel specialists	7.0	5.2	6.6
2405 Secondary school teachers	16.9	10.4	3.3
3901 Welfare para-professionals	2.8	3.9	7.3
2501 University & CAE teachers	2.8	1.3	0.7
2601 Social workers	1.4	1.3	3.3
3999 Other para-professionals	2.8	2.6	3.3
5999 Other clerks	7.0	3.9	2.7
2799 Other business professionals	2.8	2.6	3.3
2707 Computing professionals	–	1.3	5.3
1313 Public policy managers	–	–	0.7
1399 Other specialist managers	1.4	2.6	2.7
5101 Office secretaries	1.4	1.3	0.7
5301 Accounting clerks	–	–	2.0
1309 Personnel managers	1.4	1.3	1.3
2407 Special education teachers	2.8	–	0.7
3401 Registered nurses	–	1.3	2.0
1301 Finance managers	1.4	2.6	2.6
2505 Extra-systemic teachers & instruct	–	–	0.8
2605 Lawyers	4.2	1.3	0.8
2703 Public relations officers	–	2.6	1.1
2907 Other social scientists	2.8	1.3	0.8
2107 Life scientists	–	–	–
2905 Education researchers & related	1.4	2.6	0.4
2807 Journalists	–	1.3	0.8
5303 Insurance & broking clerks	–	–	1.5
6101 Securities & finance dealers	–	1.3	–
2403 Primary school teacher	2.8	–	0.8
2503 TAFE teacher	1.4	–	–
1201 General managers	–	1.3	0.8
2399 Other health diagnosis and treat	1.4	–	2.2
2701 Accountants	–	–	2.2
– All other occupations	14.4	14.2	8.1
All groups	100.0	100.0	100.0
<i>Number of respondents</i>	<i>71</i>	<i>77</i>	<i>151</i>

The most common occupation across all three cohorts was ASCO 2903 (Psychologist). Only 12.7 per cent of the 1979–80 cohort were employed as

psychologists three years after graduation. This is somewhat unexpected, since this is the most common traditional destination of graduates. Both later cohorts show greater proportions employed in this field. The field remained the most popular destination for graduates, but showed only moderate growth over the three cohorts. Again, it should be noted that no more than one fifth of psychology graduates were actually working as psychologists at any one time.

ASCO 2999 (Other professionals) showed a net gain during the 1980's, from about 4 per cent to 9 per cent. This occupation includes mainly graduates working as research assistants and research officers, often in a university setting. The position may also serve as a springboard to other positions of employment. Other research positions, such as ASCOs 2907 (Other social scientists), 2107 (Life scientists) and 2905 (Education researchers) showed negligible fluctuations.

Welfare positions, including ASCO 2603 (Counsellors), 3901 (Welfare para-professionals) and 2601 (Social workers) showed increases across cohorts. Welfare became something of an opportune field for graduates during the decade. Personnel positions, such as ASCO 2705 (Personnel specialists), 1309 (Personnel managers) and 2703 (Public relations managers) remained steady. By 1981, the rise in opportunities in this field reported by Kelly et al. (1983) may have peaked. Certainly these data show little fluctuation in personnel-related positions.

The teaching field showed a marked decrease in popularity between the three cohorts. ASCOs 2405 (Secondary school teachers), 2501 (University and CAE teachers), 2407 (Special education teachers), 2403 (Primary school teachers) and 2503 (TAFE teachers) all reported decreasing proportions. Becoming a secondary school teacher was once a preferred destination for graduates in psychology. Fully 16.9 per cent of the 1979-80 cohort were working as secondary school teachers three years after graduation, this being the most common occupation for that cohort. Only 3.3 per cent of the 1987-88 cohort were working as secondary school teachers three years after graduation. These trends may be tempered, however, by the fact that most psychology graduates entering teaching as a profession graduate from a university or college with an education school, for example Deakin University. The current sample may not fully represent these.

Both of the clerical positions shown here, ASCO 5999 (Other clerks) and 5101 (Office secretaries) showed decreases across the three cohorts. Three years after graduation, 7.0 per cent of the 1979-80 cohort were employed as ASCO 5999 (Other clerks), often in the Public Service. Less than three per cent of the 1987-88 cohort

were similarly employed. Three years into their careers, graduates may well have attained more senior managerial or administrative positions. Alternatively, they may have progressed from a general clerical position to a more specialised research or other position.

Business-related positions generally showed increases in proportions – the largest being ASCO 2707 (Computing professionals), from none of the 1979–80 cohort to 5.3 per cent of the 1987–88 cohort. No doubt this reflects advances in technology and industry, and the creation of positions involving computers. At the beginning of the decade, such positions would have been few in number. Other business-related positions showing more moderate gains include ASCOs 2799 (Other business professionals), 5301 (Accounting clerks), 5303 (Insurance and broking clerks) and 2701 (Accountants). These data bear out findings by Over (1983) and Mullaly et al. (1985) indicating increased involvement of psychology graduates in business-related positions.

Managerial positions also showed moderate gains in popularity. ASCOs 1399 (Other specialist managers), 1301 (Finance managers) and 1313 (Public policy managers) all showed small percentage increases. Other positions, such as ASCOs 1309 (Personnel managers) and 1201 (General managers) remained steady. It has previously been noted that three years may not be long enough for graduates to attain senior managerial positions. Earlier it was also noted that managers / administrators made quite substantial gains across the three cohorts (see Table 5.2).

Table 5.3 generally shows increases in popularity across the three cohorts for a number of occupations, including positions in research, welfare, business and management. Occupations in psychology and personnel remained steady, whereas clerical and teaching positions declined in popularity.

Industry classes

Again, each cohort was examined to ascertain in which particular industries graduates were working three years after graduation. Table 4.4 had shown the most common industries of employment for graduates' first to fifth jobs, regardless of the year of graduation. In that particular table, ASIC 8241 (Universities) was shown to be the most common employment setting. Note that in Table 5.4, ASIC 8241 (Universities) scored quite low as the preferred employment setting, although the proportions of each cohort did increase somewhat. The reason for this is that Table 5.4 examines graduates three years after graduation. Graduates may often choose to work within a university setting immediately following graduation,

whilst undertaking post-graduate study, or whilst searching for more permanent employment. Many of these university positions involve working as research assistants, tutors, or in a clerical capacity. They are often temporary, and short-term in duration. Note also that in Table 4.4, the proportion of graduates employed within a university fell sharply between their first and fifth jobs.

Table 5.4: Most common industry of employment, graduate cohorts three years after graduation

ASIC class	Per cent		
	1979-80 cohort as at 1983	1983-84 cohort as at 1987	1987-88 cohort as at 1991
8241 Universities	1.5	3.9	4.6
8305 Welfare & charitable serv nec	9.1	5.2	9.3
8233 Secondary schools	16.7	14.3	5.3
8157 Commty hlth centre (paramed)	9.1	5.2	7.3
7112 State government admin	7.6	3.9	7.3
8141 Hospitals (except psychiatric)	6.1	7.8	4.6
6144 Savings banks	4.5	6.5	7.3
6383 Market & business consultancy	4.5	3.9	5.3
7111 Federal government admin	6.1	1.3	1.3
8158 Health services nec	—	6.5	2.0
8151 Medicine	1.5	—	2.0
8242 College of Advanced Education	1.5	3.9	1.3
7113 Local government admin	1.5	2.6	2.6
8243 TAFE's	1.5	1.3	—
8461 Research & scientific institution	1.5	1.3	1.3
4814 Department stores	—	—	2.6
6371 Legal services	3.0	1.3	0.7
8232 Primary schools	6.1	1.3	0.7
8491 Employment services	1.5	2.6	0.7
1300 Oil and gas	—	2.6	0.7
5900 Communication	3.0	—	1.3
8142 Psychiatric hospitals	—	1.3	—
8244 Education nec	3.0	—	—
8306 Religious institutions	1.5	1.3	2.0
8156 Commty hlth centre (medical)	—	2.6	—
8235 Special schools	1.5	—	0.7
5405 International air transport	—	2.6	—
6232 Superannuation funds	—	—	2.0
8493 Prison reformatories	—	1.3	4.0
7120 Justice	1.5	—	1.3
8492 Police	—	—	2.6
— All other industries	6.2	15.5	19.2
All groups	100.0	100.0	100.0
<i>Number of respondents</i>	<i>66</i>	<i>77</i>	<i>151</i>

Previously it was observed that the welfare field became something of a growth area during the 1980's (Table 5.3). Welfare-oriented industry classes, such

as ASIC 8305 (Welfare and charitable services, not elsewhere classified), and 8157 (Community health centres), remained steady across the three cohorts, falling from 9.1 per cent of the 1979–80 cohort to 5.2 per cent of the 1983–84 cohort, and then rising to 9.3 and 7.3 per cent respectively for the 1987–88 cohort. Hence, although more persons found employment in welfare positions during the 1980's, the number of settings in which they carried out their employment showed no substantial change.

Education, on the other hand, declined substantially in popularity during the 1980's. Since persons employed in the education field can only carry out their functions in the corresponding educational settings, we would expect these settings to show comparable decreases in popularity. This is indeed the case. ASIC classes 8233 (Secondary schools), 8232 (Primary schools), 8243 (TAFEs) and 8235 (Special schools) all showed decreases in the proportions of each cohort working within each setting. The most notable decrease was in ASIC 8233 (Secondary schools). Almost 17 per cent of the 1979–80 cohort were employed in this setting three years after graduation. Just over 5 per cent of the 1987–88 cohort were similarly employed. ASIC 8242 (Colleges of Advanced Education) was the only education-related class that remained steady across the three cohorts, showing a small rise from 1.5 per cent of the 1979–80 cohort to 3.9 per cent of the 1983–84 cohort, and then settling to 1.3 per cent of the 1987–88 cohort.

These decreases in the number of psychology graduates finding employment within the educational field are not mirrored Australia-wide. In 1983, 4.8 per cent of the entire employed labour force were working as teachers of some description. For both 1987 and 1991 the figure remained at 4.7 per cent (ABS Cat. No. 6203.0). There is, however, more evidence that first-degree psychology graduates are choosing other fields besides education for their first jobs. Graduate Careers Council of Australia data show that for 1980 graduates, 9.9 per cent were employed full-time as teachers or lecturers in the year following their graduation. For 1986 graduates this figure had fallen to 8.7 per cent, and for 1990 graduates it had fallen further to 5.3 per cent (Appendix 5, Table 8). It appears that as regards education, quite fundamental changes in employment preferences took place during the 1980's that may well be specific to psychology graduates.

Government administration is divided into a number of different sectors – Federal, State and local. The number of graduates finding employment in these sectors varied throughout the 1980's. ASIC 7111 (Federal government

administration) decreased substantially from 6.1 per cent of the 1979–80 cohort to 1.3 per cent of the 1987–88 cohort. ASIC 7112 (State government administration) fell from 7.6 to 3.9 per cent, but then rallied to 7.3 per cent of the 1987–88 cohort. ASIC 7113 (Local government administration), on the other hand, rose slightly from 1.5 to 2.6 per cent. Both Federal and State Public Services have been seen as ‘traditional’ employment settings for psychology graduates (Morison, 1977). With changes and upheavals in the labour market, graduates forgo these ‘traditional’ settings if there are not enough positions to satisfy demand, and seek employment in other spheres.

Health-oriented employment settings also showed ambivalent results. ASICs 8141 (Hospitals, excluding psychiatric), 8142 (Psychiatric hospitals), 8156 (Community health centres, medical) and 8158 (Health services not elsewhere classified) all showed an increase in proportion from the 1979–80 cohort to the 1983–84 cohort, then decreases for the 1987–88 cohort. ASICs 8151 (Medicine) and 8157 (Community health centres, paramedical) showed the reverse – a decrease in proportion from the 1979–80 cohort to the 1983–84 cohort, then an increase to the 1987–88 cohort. Many of these settings are also ‘traditional’ employment settings for psychology graduates, again showing that as the labour market undergoes change, graduates will seek out and utilise opportunities in new fields.

Psychology graduates actually working as psychologists (ASCO 2903) usually find employment within these afore-mentioned health-orientated settings (see, for example, Table 4.6). The jobs in these settings are in high demand, and more often than not the market becomes quickly saturated. The excess candidates for these positions are forced to seek employment elsewhere. Pryor and Taylor (1986) noted that graduates who did not fulfil their primary career aspirations either compromised their career choice, or sacrificed job prestige level in order to maintain their vocational interest. Many psychology graduates aspiring to employment in these industry settings would find themselves in this position.

Business-related employment settings generally increased in popularity across the three cohorts. ASICs 6144 (Savings banks), 6383 (Market and business consultancy), 4814 (Department stores) and 6232 (Superannuation funds) were the most popular industries. The increases within these industries mirror those occurring within the accompanying occupations. This is not surprising; as business-related occupations increased in popularity, so should business-related industries. Many of these business-type occupations can only be carried out in an

appropriate, non-traditional employment setting.

It could be asked whether business-related occupations will come to dominate the graduate field if these trends continue. Certainly from these data, the rise in business-related employment shows no sign of peaking, and graduates will generally seek employment where the opportunities are. The trend will be mitigated by at least three factors – whether opportunities in business continue to rise, how the ‘traditional’ psychology employment market fares, and how universities structure their psychology training, i.e. whether they aim to educate practitioners in psychology, or graduates with an all-round education who can utilise their skills in any number of settings. The employment trends in the 1980’s were partly driven by market forces, and partly by graduates utilising their skills in new, non-traditional occupations and settings.

It is interesting to note that the 1979–80 cohort found employment in 28 different industry settings, or ASIC classes. This rose to 35 different industries for the 1983–84 cohort, and 47 different industries for the 1987–88 cohort. This represents more than just the number of graduates that happen to be in each cohort – it represents graduates seeking out diverse employment, being driven by the market and being drawn to new areas and opportunities for which they are equipped.

5.3 Comparisons with existing longitudinal data

A number of data sources exist which also provide longitudinal information about the employment of psychologists and psychology graduates. The most important of these sources are:

- Australian Bureau of Statistics census data for 1981 and 1986.
- Graduate Careers Council of Australia graduate destination surveys (GCCA, 1980–1991).
- UK graduate destination surveys, published by the University Grants Committee (1980–1990). These afford an interesting comparison with Australian trends.
- A study by Coyte (1985), examining graduates (including those in psychology) in the labour market five years after graduation.

It would be useful to briefly consider each of these data sources, in order to compare and contrast trends with the current sample.

Census data

We have already had occasion to consider data from the census in several instances. The relevant data are presented in Appendix 5, Tables 3 to 7.

Appendix 5, Table 3 indicates that in 1986 only 24.7 per cent of persons qualified in psychology were actually working as psychologists. This compares with 12.7 per cent for the 1979–80 cohort of the current sample, 20.8 per cent for the 1983–84 cohort and 16.6 per cent for the 1987–88 cohort.

Appendix 5, Table 4 shows an increase in the number of persons who indicated that their highest qualification was in psychology, from 10,925 in 1981 to 15,555 in 1986. This reflects the increased interest in psychology amongst university and college students during the 1970's and 1980's. Again, note that the study of psychology is dominated by women – 55 per cent in 1981, and 60 per cent in 1986.

Appendix 5, Table 5 shows the major occupational groups in which persons qualified in psychology were working as of census night 1986. Comparisons with the current sample (Table 5.2) shows quite similar results. The census indicated that 11.6 per cent of graduates were working as managers or administrators. The current sample showed a ten year average of 10.9 per cent for the 1979–80 cohort, 12.8 per cent of the 1983–84 cohort and 10.1 per cent of the 1987–88 cohort working in this field. The census indicated 62.0 per cent of graduates working as

professionals. Results for the three cohorts were 73.4, 68.8 and 61.2 per cent of graduates respectively. Just over 7 per cent of graduates worked as para-professionals as of census night. The cohorts averaged 7.4, 4.9 and 13.3 per cent respectively.

Appendix 5, Table 6 can be compared and contrasted with Table 5.3, as can Appendix 5, Table 7 with Table 5.4, in order to give information on individual occupations and industries. Although possible, the comparisons are, in a number of important respects, academic. The census shows graduates without regard to their year of graduation. Hence it is not possible to determine shifts in employment patterns, except at a gross level across each census. As it stands, 1981 census data are not directly comparable to 1986 census data, due to a change in occupational classifications introduced for the 1986 census. (Prior to 1986, the Classifications and Classified List of Occupation, or CCLO, was used. The Australian Bureau of Statistics has published a CCLO:ASCO link [Cat. No. 2182.0], but the difficulties involved preclude detailed analysis). Data for the 1991 census, although comparable, have not yet been released. Thus, cohort comparisons are not possible, only whole sample comparisons.

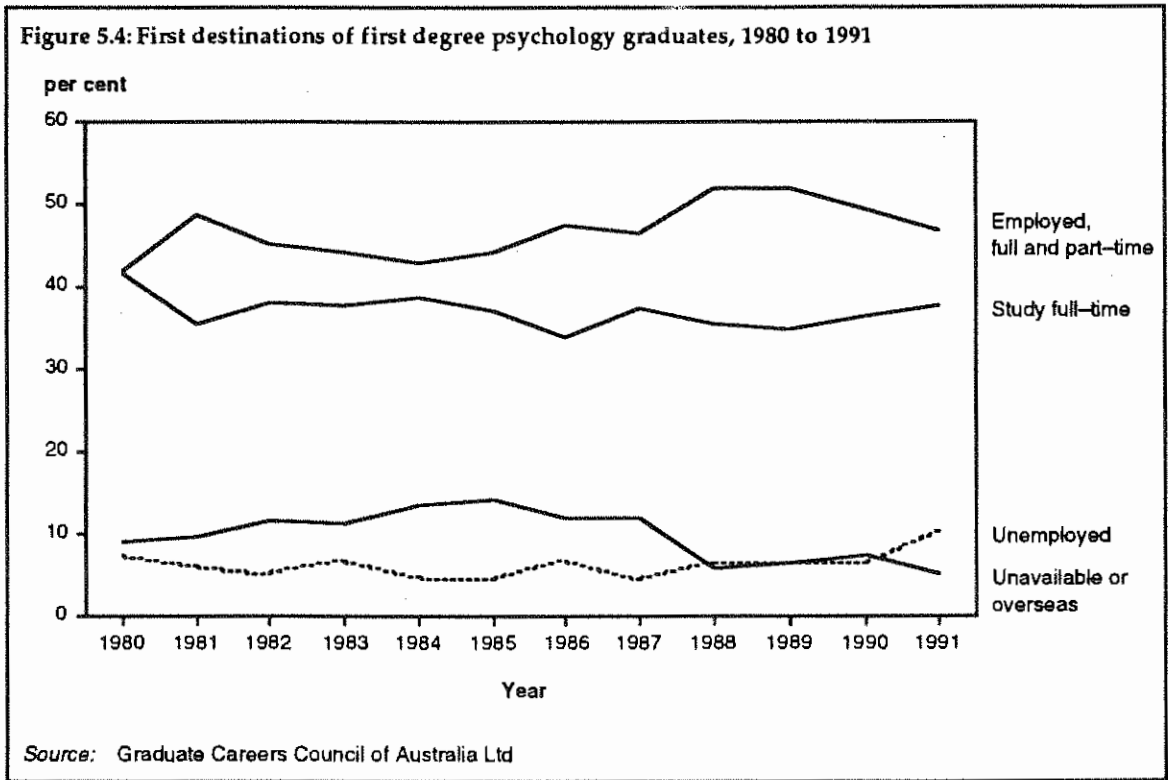
Graduate Careers Council of Australia data

Each year the Graduate Careers Council of Australia Ltd (GCCA) surveys the previous years' graduates to determine their employment status as at 30 April – whether employed (and if so where), unemployed, still studying or other. The results for university psychology graduates are presented in Figures 5.4, 5.5 and in Appendix 5, Table 8.

If we compare GCCA data with corresponding data for the cohorts (Table 5.1), we see that several notable differences emerge. The proportion of GCCA respondents employed full-time one year after graduation ranged from 42.2 per cent (1981) to 31.5 per cent (1991). The proportions of the current sample working full-time one year after graduation were much higher, ranging from 67.9 per cent (1979–80 cohort) to 57.2 per cent (1983–84 cohort). Similarly, a higher proportion of GCCA respondents were unemployed over the same time period. More were engaged in full-time study, at the expense of full-time employment. The proportions engaged in part-time employment were approximately the same.

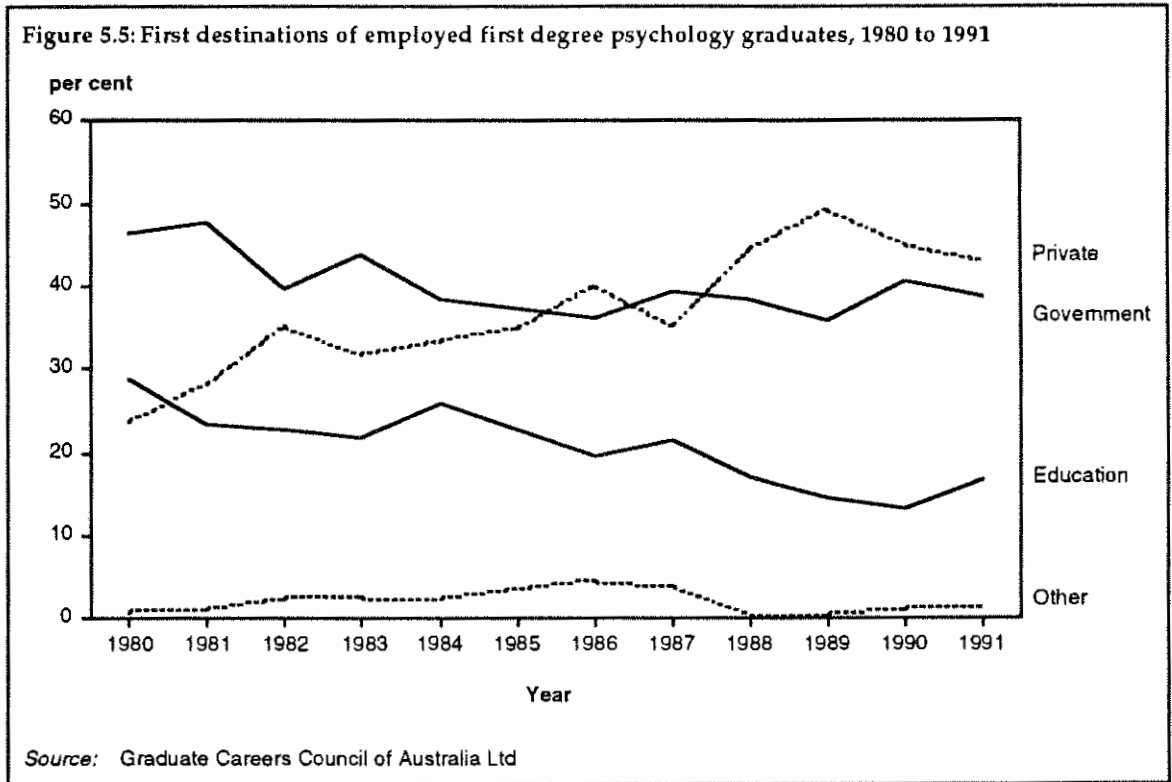
Although both surveys are voluntary, it is suspected that respondent bias is the main reason for the difference. The GCCA surveys have an established profile, and a routine follow-up procedure. The current survey attracted motivated

respondents who wished to provide details concerning their careers.



Methodological difficulties notwithstanding, the GCCA data clarifies some uncertainties raised by the current data (see Chapter 5.1). From the present sample, it was difficult to ascertain whether more graduates are continuing in order to undertake post-graduate study. The GCCA data show little fluctuation across the 1980's. The trend toward employment increases slightly, although the major contributing factor here is the rise in part-time employment, as compared to a small fall in full-time employment. The proportion of those unavailable or overseas settled in the late 1980's, after showing a rise and fall across most of the decade. The unemployment rate mostly fluctuated between 4 and 7 per cent; the 1991 figure of 10.3 per cent unemployed one year after graduation is somewhat alarming. These figures are higher than the cohort figures.

GCCA first destinations of **employed** graduates are shown in Figure 5.5. Note the sharp rise in private sector employment, accompanied by a moderate fall in government sector employment and a sharp fall in education sector employment. These trends confirm similar trends for each of the current sample's cohorts. Employment in business-related industries is increasing, at the expense of both the government and education sectors. As once traditional sectors show limited opportunity or appeal, new areas of employment are sought out.



UK graduate destination surveys

In a similar fashion to the GCCA data, the UK University Grants Committee surveys graduates to ascertain their first employment destinations in the year following their graduation. Data for the years 1981 to 1991, showing first destinations and areas of employment, are presented in Figures 5.6, 5.7 and Appendix 5, Table 9.

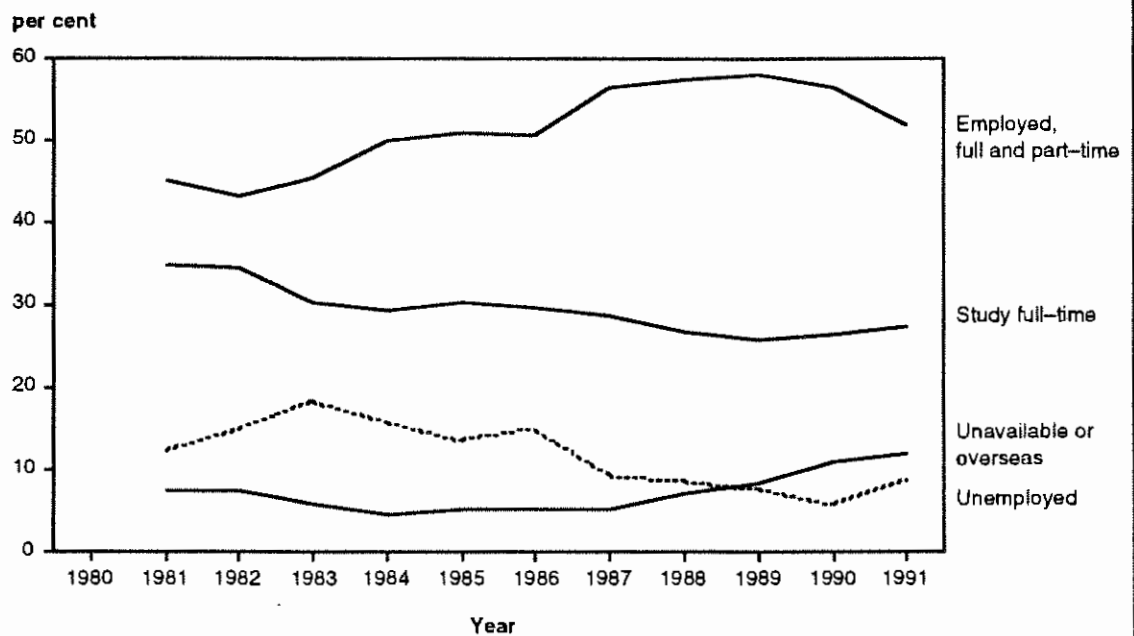
Generally, first time UK psychology graduates tend towards higher rates of employment and lower rates of continuing full-time study than their Australian counterparts (Figure 5.6). There were also marginally higher rates of graduate unemployment in the UK in the year following graduation.

As in Australia, UK graduates are increasingly favouring private sector employment at the expense of the Public Service (Figure 5.7). However, the trend towards private sector employment is less pronounced than that in Australia over the same time period. UK graduates showed a steady increase, but began the decade with higher rates. The trend away from government (or public service) employment is somewhat more marked in the UK.

Unlike Australia, the UK education sector does not seem to be a traditional employer of psychology graduates. The proportion tending towards educational

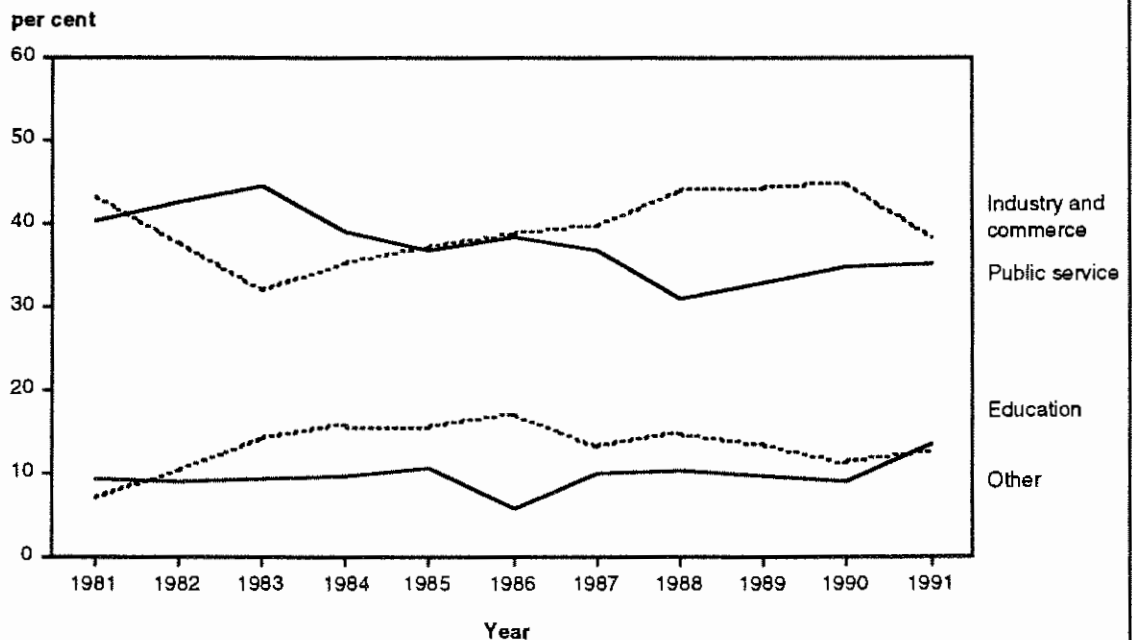
employment in the UK showed a small increase in the early 1980's and has shown only a small net decrease since. At the end of the 1980's the proportion of first time graduates finding employment in the educational sector were at a similar level in both countries.

Figure 5.6: First destinations of first degree UK psychology graduates, 1980 to 1991



Source: University Grants Committee, 1980-1991

Figure 5.7: First destinations of employed first degree UK psychology graduates, 1980 to 1991



Source: University Grants Committee, 1980-1991

Many of the general trends experienced by Australian psychology graduates throughout the 1980's were mirrored by the British experience. Ball and Bourner (1984), detailing first destinations of graduates, found increased numbers of graduates but decreased employment opportunities in specifically psychological areas. Increasing numbers of graduates were entering post-graduate training in order to qualify at a professional level in psychology. Ball and Bourner also raised the issue of the reliance on the public sector as an employer, considering what they saw as the likelihood of contraction in this sector, and the consequent loss of job opportunities.

Over (1984) reported on decreased career prospects within British universities, due to an end in university growth, and low turnover in academic positions. Rose and Radford (1986) noted the large number of psychology graduates having to compete with graduates from many other disciplines in the search for career opportunities. They found that a psychology degree was not necessarily seen as a 'valuable commodity' in such a market, partly due to employers not being fully informed as to the variety of usable skills offered by graduates. All these findings apply just as well to the Australian experience.

Coyte's (1985) study

Coyte (1985), on behalf of the University of Sydney, surveyed all 1979 graduates of the Universities of Sydney, Melbourne, Western Australia, ANU and Newcastle. The survey, which included 344 psychology majors, asked a number of questions relating to graduate work and study experience, at both 30 April 1979 and 1984. Summary results for psychology graduates are presented in Appendix 5, Table 10.

Although no cohort comparisons are possible for Coyte's study, it is possible to make broad comparisons with the GCCA data (Appendix 5, Table 8), and the current sample data (Table 5.1). Coyte found that in the year immediately following course completion, 44.8 per cent of graduates were still studying. This proportion is about 7 per cent higher than GCCA figures. Fully 18 per cent of those graduates still studying were undergoing teacher training. Five years later, only 5.3 per cent of graduates were still studying full-time, mostly for higher degrees.

Only 31.0 per cent of graduates were employed full-time in 1979. Five years later, this had increased to 78.1 per cent, employed mainly in the government sector (34.0 per cent) and education sector (27.4 per cent). Education, as an employment destination, was still highly popular. This would change somewhat later in the

decade, as noted above.

Five years after graduation, Coyte found that the 263 employed psychology graduates were employed in the following industries:

- Community services – 60.9 per cent, comprising mainly of education (36.9 per cent), health (13.3 per cent) and welfare (8.4 per cent)
- Public administration and defence – 18.3 per cent
- Finance, property and business services – 8.8 per cent
- Manufacturing – 4.2 per cent
- All other industries – 7.8 per cent

These figures compare well with the status of the 1979–80 cohort as in 1985 (Table 5.2). Coyte also found that 57 per cent of graduates were still with their first employers five years after graduation. At that time (1984), the average salary for psychology graduates was \$24,500 – 9 per cent higher than the average weekly earnings.

Chapter 6

Post-graduate or further study

Many graduates, after completing their first psychology degree, went on to engage in some form of further or post-graduate study. This may have been to either advance a career, or purely for interest's sake. It may have been full- or part-time. It may have been in psychology, or in some other discipline altogether. This chapter will seek to examine post-graduate or further study trends for this sample of psychology graduates, and to describe the main features of their study. Note that these are completely new degrees or diplomas commenced following completion of the graduate's first psychology qualification. Thus, the fourth year of an undergraduate honours sequence would not be included here, as it is apportioned to the original psychology qualification.

Respondents were asked to list details regarding further studies undertaken since the completion of their original psychology degree. These details included the name of the course, the level of the qualification, the institution where the studies were undertaken, whether the qualification was full- or part-time, how long the qualification took, the major subject studied and the reason why further studies were undertaken (see Appendix 1, survey question 2h and 2i).

Although respondents could list as many qualifications as they wished, a maximum of two extra qualifications were coded. Since almost no respondents listed more than two post-graduate or further degrees, this was felt to be more than sufficient. Details regarding graduates' further study are presented in Table 6.1.

6.1 Type of degree

Over two thirds (67.7 per cent) of the entire sample of graduates undertook further university studies leading to a post-graduate degree, a second Bachelor's degree or a Graduate Diploma. A sizeable proportion of the entire sample (13.7 per cent) completed two such further degrees or diplomas. The proportion of graduates completing extra qualifications is substantial, but again needs to be understood within the context of the peculiarities of the sample. Firstly, only those graduates motivated enough to return the survey are included. It is presumed that

these graduates would have displayed some success in their career and/or studies following graduation. Secondly, psychology is a profession that requires further study. Professional registration as an Australian Psychological Society (APS) Member or Associate Member, or registration with a State Psychology Board require a minimum of four years study. Three year pass degree graduates, if they are not proceeding to an honours year, will need to complete an extra qualification in order to fulfil registration requirements.

Table 6.1: Characteristics of post-graduate or further study

	Per cent	
	<i>First extra qualification</i>	<i>Second extra qualification</i>
Type of degree		
Graduate diploma	35.4	34.2
Second Bachelor	18.2	10.1
Master	40.8	41.8
PhD	5.6	13.9
Level of degree		
Pass	90.5	88.6
Honours	7.7	6.3
Discontinued	1.8	5.1
Full or part-time		
Full-time	57.2	30.4
Part-time	42.6	67.1
External	0.5	2.5
Length of study		
1 to 12 months	25.4	15.3
13 to 24 months	35.7	29.2
25 to 36 months	17.6	25.0
37 to 48 months	11.1	9.7
49 to 60 months	4.1	6.9
More than 60 months	6.2	13.9
Major of degree		
Psychology	47.8	44.9
Other health and related	20.3	9.0
Arts and related	6.2	11.5
Science and related	2.6	5.1
Business and related	15.7	15.4
Education	6.7	12.8
Other major	0.8	1.3
<i>Number of respondents</i>	<i>390</i>	<i>79</i>

The need to gain further training for one's career in a specialised area may be another incentive for further study. Graduates may also undertake further study in order to gain required prerequisites for some other profession besides psychology.

Finally, numbers of graduates will undertake further studies purely for interest's sake.

Graduate Diploma

Many undergraduate psychology degrees require only three years of study – 62 per cent of the current sample's first psychology degrees were three year degrees. Those graduates wishing to undertake a career as a psychologist, or wishing to achieve the aforementioned registration would thus need to undertake at least one extra year of study. This was often done via a Graduate Diploma; 138 graduates, or 35.4 per cent of those undertaking further study did so through this means.

Of these 138 graduates, 28.2 per cent gained a Diploma of Education (Dip Ed) in order to gain the necessary prerequisites to teach in public secondary schools. The second and third most popular diplomas were a diploma in psychology, or Dip Psych (15.4 per cent), and a graduate diploma in Applied Psychology (10.3 per cent). These three diplomas account for more than half of all the diplomas undertaken by the current sample. Graduate diplomas in Finance and Business Studies (8.5 per cent), Child and Adolescent Psychology (6.8 per cent), Counselling (5.1 per cent) and Behavioural Health Care (5.1 per cent) account for the third quartile. Graduate diplomas in Educational Psychology (4.3 per cent), Applied Science (4.3 per cent), Industrial Relations (3.4 per cent), Teaching (3.4 per cent) and Audiology (2.6 per cent) comprise most of the remainder. A small number of graduates also undertook a one year Masters degree qualifying programme.

Apart from the almost thirty percent of graduates undertaking a Dip Ed, most of the remainder of diplomas were in explicitly psychological areas, or were psychology-related. The notable exceptions are those graduates undertaking diplomas in Finance or Business Studies. As we have seen in Chapter 5.2, the business field was one of the growth areas for the employment of psychology graduates throughout the 1980's.

Of those graduates undertaking a second extra qualification, 34.2 per cent undertook a diploma. This is a similar proportion as for the first extra qualification, except in this case it only represents some 27 individuals. Again, the Dip Ed predominated (10 persons), followed by graduate diplomas in Applied Psychology (3 persons), Personnel Management, Humanities, and Law (each 2 persons). Areas covered for this second diploma were less explicitly psychological. Besides those subjects mentioned, graduates also undertook diplomas in mathematics,

information management, rehabilitation, theology and quality management.

Bachelor

Following their degree in psychology, 18.2 per cent of those graduates undertaking further study completed a second Bachelor degree (Table 6.1). Almost one third (31.0 per cent) of these were Bachelors of Social Work. Numbers of these may well be graduates who were unable to gain employment as psychologists, or employment utilising their psychology qualification, but were still interested in the 'helping professions'. Thus, they returned to university in order to study social work. Alternatively, the study of social work may well be a useful adjunct for those pursuing careers in psychology or a related field.

A further 12.7 per cent of graduates pursued a career or interest in law, gaining a LLB. Other career options followed were education (9.9 per cent gaining a BEd), science (4.2 per cent gaining a BAppSci) and business (5.6 per cent gaining a BBus). Further, 8.5 per cent of graduates gained a BA, and 5.6 per cent a BSc with no further description. Other Bachelor degrees gained included business management, medicine, theology and economics. Many of these degrees have no direct relation to psychology, and the respondents undertaking these degrees are most likely pursuing careers with only a marginal relationship to psychology.

Only 8 of the 79 respondents completing a second post-psychology qualification undertook a Bachelor degree. Three of these were BA's, and the remaining five were in a variety of different areas.

Master

The Masters degree represents an important step for those graduates pursuing careers in psychology or as psychologists. Study at a Masters level is often completed in order to fulfil full APS membership requirements, and is now more usually preferred by employers for employment as a psychologist. Thus, it is not surprising that over forty per cent (40.8 per cent) of those graduates undertaking a post-graduate qualification did so at a Masters level.

Of those graduates completing a Masters degree, 80 per cent did so in a field directly related to psychology. Degrees completed included an MA in psychology or clinical psychology (36.5 per cent), MPsych (34.6 per cent), MSc in psychology (3.8 per cent), MOrgPsych (3.1 per cent), MBehavSci (1.3 per cent) and MCogSci (0.6 per cent). Other Masters degrees completed were in business (3.8 per cent), commerce (2.5 per cent), public health, administration and education (all 1.3 per

cent). By far the greatest proportion of Masters degrees were completed in order to satisfy professional psychology requirements.

Thirty three individuals completed a second extra qualification at a Masters level, following their original psychology qualification. Many of these were less explicitly psychological – only 48.5 per cent were related to psychology. The remainder were in fields such as business, education, social work, nursing studies, engineering and criminology.

Doctor of Philosophy

For many, the Doctor of Philosophy (or PhD) represents the pinnacle of educational aspiration. In the current sample, only 5.6 per cent of those completing post-graduate qualifications did so at a PhD level – this represents 22 individuals out of 390 post-graduate/further study students. The proportion of those completing a PhD as their second extra qualification is higher – 13.9 per cent. All degrees, bar one of the second extra degrees were completed in psychology or clinical psychology.

6.2 Other characteristics of further study

About 90 per cent of both first and second extra qualifications were completed at a pass level (Table 6.1). Only 7.7 per cent of first and 6.3 per cent of second extra qualifications were completed at an honours level or merited an honours grading. A small proportion (1.8 per cent) of students discontinued their first extra qualification for various reasons – five of these seven students were enrolled part-time. The proportion discontinuing their second extra qualification was much more sizable at 5.1 per cent. All of these students were enrolled part-time.

Whereas most undergraduate degrees are completed full-time, much post-graduate study is completed part-time whilst also engaged in employment. Fully 42.6 per cent of first extra qualifications and 67.1 per cent of second extra qualifications were completed part-time. Part-time study results in an accompanying increase in the amount of time required to complete the qualification.

Over 60 per cent (61.1 per cent) of first extra qualifications were completed in two or less years. Some qualifications however (6.2 per cent), took more than five years to complete, most likely due to the competing demands of part-time study, employment, family and other commitments. On average, first extra qualifications

took 29 months to complete. Second extra qualifications took longer, with almost 60 per cent taking more than two years to complete – the average duration being 36 months. Again, this is due to a higher proportion of second extra qualifications being undertaken part-time.

Not surprisingly, almost half (47.8 per cent) of first extra qualification majors were in psychology, representing those graduates who continue their studies by undertaking Graduate Diplomas, Masters or PhD degrees in psychology. Another 20.3 per cent of majors were in health and related fields, such as social work (5.9 per cent), counselling (2.3 per cent), public health (1.5 per cent), sociology and audiology (0.8 per cent each). Business and related majors were undertaken by a further 15.7 per cent of post-graduates. Popular majors included business and business administration (3.3 per cent), law and legal studies (3.1 per cent), human resource management (2.3 per cent), finance and investment (1.8 per cent), insurance and superannuation, economics, marketing and advertising, and industrial relations (all 0.8 per cent). Another 6.7 per cent of postgraduates majored in education, and a further 6.2 per cent in arts-related subjects such as English (2.8 per cent), linguistics (1.0 per cent) and art (0.5 per cent). Surprisingly, only 2.6 per cent of postgraduates majored in a science-related field, the most notable being pure mathematics (0.5 per cent).

For persons undertaking a second extra qualification, the majors were different to those for first extra qualifications in a number of ways. Whilst similar proportions undertook majors in psychology (44.9 per cent), business (15.4 per cent) and science (5.1 per cent), majors in health (9.0 per cent) were substantially lower, whereas majors in arts (11.5 per cent) and education (12.8 per cent) were substantially higher. Not too much can be read into this however, as only 79 persons undertook a second extra qualification.

6.3 Reasons for undertaking further study

The 390 respondents who undertook further studies were asked to indicate why they decided to pursue these studies. Although the question they were asked was open-ended (i.e. respondents were not forced to choose from already existing options), responses were grouped into a number of 'typical' areas. These were:–

- To further career or employment prospects 25.4 per cent
- To gain qualifications for clinical work, State registration

or APS membership	21.9 per cent
• To increase knowledge or skills	16.8 per cent
• To extend an area of interest	12.3 per cent
• To access a research career	4.3 per cent
• Change of direction or career	3.7 per cent
• To upgrade professional standing	3.7 per cent
• To teach, or increase teaching qualifications	3.2 per cent
• Other reasons	8.6 per cent

A quarter of those undertaking further study indicated that they had done so in order to further their career or their prospects for employment. This is especially relevant for those respondents working as psychologists, which, as previously noted, is a profession requiring further study. Regardless of the profession, it is evident that graduates feel they can increase their employability or career aspirations by gaining a higher degree or further qualifications.

Another quarter of graduates stated explicitly that they had undertaken another degree so as to be able to work as psychologists – to gain the qualifications needed for work in clinical psychology, registration with State psychology boards or Membership of the Australian Psychological Society.

Maintenance and increase of knowledge or skills was given as a reason by 16.8 per cent of those respondents undertaking further studies. This is especially relevant for those graduates working as professionals or para-professionals. Many of these fields require the individual to stay abreast of new methods or technologies. It is also possible that some of these respondents were returning to work after an absence, and thus wanted to familiarise themselves with the current standing of their field of interest.

The next most popular reason, 'To extend an area of interest', given by 12.3 per cent of respondents, is similar in fashion. This reason, however, may not be employment related, in that numbers of respondents may have undertaken studies purely for interest sake, especially those majoring in arts-related subjects. Others may have undertaken study in areas related to their current area of employment, in order to broaden their understanding of that area. Consider, for example, those psychology graduates who undertake social work degrees, or those graduates working in business-related areas who undertake a degree in economics or

marketing.

Approximately equal proportions gave their reason as one of either wanting to access a research career, wanting to change direction or career, wanting to upgrade their professional standing, or wanting to teach / increase their teaching qualifications. Those students wanting to become involved in research normally took up academic positions, and studied at a Masters or PhD level. Those students wanting to change direction or career embarked on a course of study not related to their current area of employment, believing that other areas held more promise or more interest. Those students wanting to teach normally undertook a one year Dip Ed course. Another 8.6 per cent gave reasons that could not be classified into any of the categories above.

This chapter has briefly described the type of further study undertaken by respondents, and the reasons for that study. Most graduates undertook Diplomas or Master's degrees in psychology, in order to gain professional qualifications, or to further their career prospects. It remains to be seen whether further study really has any beneficial effect on graduates' career or employment prospects. This issue will be explored further in the following chapter.

Chapter 7

Selected career path determinants

There are a number of different factors that may play a part in determining the career paths and employment histories of graduates. Some of these factors, such as the gender of the graduate, are not open to change. Others, such as undertaking further study, are, and graduates can take steps to advance their careers by improving or manipulating these factors in some way.

This chapter will consider three such determinants of career paths –

- Gender, male and female
- Level of degree, whether graduates undertook a 3 year pass or 4 year honours degree
- Further study, whether graduates undertook a Graduate Diploma, a second Bachelor, Master, or PhD qualification subsequent to the completion of their undergraduate psychology degree.

The chapter will attempt to find out what role, if any, each of these factors play in determining employment history. We will attempt to show whether any significant differences exist between graduates within each of these determinants. We will also use the ANU3 scale of occupational prestige (introduced in Chapter 2) in order to further demonstrate whether differences in social advantage exist between graduates within each of the determinants.

The chapter will also make comments on job satisfaction – how satisfied graduates were with their employment, how long they stayed in their jobs and why they left them, how relevant they perceived their studies to be, and whether they were members of any professional associations such as the Australian Psychological Society. Finally, we will attempt to model career path development, using occupational prestige as an outcome measure, and regressing the determinants mentioned above against this outcome measure.

7.1 Gender

Gender issues in employment have the potential for raising accusations of bias and inequality on the part of employers. It could be argued that the gender of a

graduate can have an effect in determining a career path, as well as access to different occupations. Whether it is that males and females are attracted to different areas of employment, or whether bias still operates in the job market is open to question. This section will briefly examine the employment patterns of our sample of male and female psychology graduates to see whether they exhibit different patterns of employment.

Male and female respondent's jobs were classified into ASCO major groups (Table 7.1), with up to five sequential jobs listed. A total of 136 males and 419 females (from a total of 576 respondents) had worked in at least one job, whereas only 19 males and 53 females had worked in five different jobs. The proportions working in each ASCO major group are also given, with the final 'All' column acting as an average measure for every job worked by each sex. This average provides a reasonable overall picture of where psychology graduates are working, regardless of their year of graduation or the date of commencement of various jobs.

Table 7.1: Occupation, first to fifth jobs, by gender and ASCO major group

ASCO major group	Per cent											
	Male jobs						Female jobs					
	1st	2nd	3rd	4th	5th	All	1st	2nd	3rd	4th	5th	All
Managers/Admin	4.4	5.8	11.8	12.1	21.1	7.8	3.6	7.9	13.7	17.9	24.5	9.1
Professionals	67.6	73.8	70.6	72.7	63.2	70.2	66.1	65.1	64.5	64.2	64.2	65.2
Para-professionals	8.1	6.8	11.8	6.1	10.5	8.4	9.8	11.6	9.0	7.5	3.8	9.7
Tradespersons	0.7	—	—	—	—	0.3	0.2	0.3	—	—	—	0.2
Clerks	14.0	8.7	4.4	6.1	—	9.2	13.6	11.0	7.1	4.7	5.7	10.4
Sales/Service	2.2	3.9	1.5	3.0	5.3	2.8	5.3	3.5	4.7	3.8	1.9	4.3
Plant/Machine op	0.7	—	—	—	—	0.3	—	0.3	—	—	—	0.1
Labourers	2.2	1.0	—	—	—	1.1	1.4	0.3	0.9	1.9	—	1.0
All groups	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>No of respondents</i>	136	103	68	33	19		419	318	211	106	53	
Av hrs worked	37.5	37.1	36.0	34.8	34.9	36.7	35.1	34.9	35.8	34.9	34.4	35.1
Av dur (months)	31.4	21.1	23.9	22.1	24.7	25.8	23.4	21.0	19.9	20.0	17.3	21.5
Av occ prest score	56.6	60.1	64.6	63.0	60.0	59.4	53.2	57.7	59.1	59.6	64.6	56.7

Using the average measure, we can conclude that there is no statistically significant relationship between gender and ASCO major group ($\chi^2(7)=4.94$, n.s.). Similarly, there are no significant relationships between gender and choosing to work in one ASCO major group over all others (for each major group, $\chi^2(1)<3.84$, n.s.). There are small, non-significant percentage differences between males and

females for each ASCO major group. Hence, we cannot conclude, for example, that males are more likely to work as professionals than females, or that females are more likely to work as clerks than males. However, at the ASCO unit group level, four particular jobs showed significant gender differences. Significantly more males than females worked as ASCO 2501 (University and CAE teachers) ($\chi^2(1)=6.89$, $p<0.01$), and ASCO 2605 (Lawyers) ($\chi^2(1)=6.82$, $p<0.01$). More females than males worked as ASCO 3999 (Other para-professionals) ($\chi^2(1)=5.31$, $p<0.01$) and ASCO 5101 (Office secretaries and stenographers) ($\chi^2(1)=7.58$, $p<0.01$). Note that equal proportions of males and females found employment as psychologists.

For every job (except the fourth), and on average, males worked slightly longer hours than females. This may reflect women's need to also deal with family responsibilities. For every job, and on average, males also worked longer in an individual position than females. This was especially so for the first job, in which males worked on average 31.4 months, as compared to 23.4 months for females. The higher turnover rate for females may again be partly explained by interruptions due to family commitments. Gender differences in reasons for leaving jobs are further explored in Chapter 7.3.

Even though psychology graduates are predominantly female, it is male graduates, on average, that work in positions with higher occupational prestige. The average occupational prestige score for all male jobs was 59.4, in comparison to the average female score of 56.7. This is a significant difference ($t=2.26$, $df=1,468$, $p<0.05$). Only in the fifth job did females score higher, and this may be due to the small size of the male sample for this job (only 19 males had worked in five different jobs since graduation).

There is no immediate explanation for this difference in occupational prestige scores – one is loath to conclude that any element of gender bias is in operation on the part of employers. It may well be that females choose to work, although not by design, in jobs which the community perceives as having lower occupational prestige. Some of these jobs, such as sales/service or clerical positions, are seen as 'traditional' female employment, and almost exclusively attract females. It may also reflect the fact that females have impaired opportunities in competing with males for jobs. Choice of lower status jobs may be driven by such factors as competing family commitments, previous employment history, or reduced self-image (ABS, 1993b).

The industries in which male and female psychology graduates worked are

shown in Table 7.2. There is a significant relationship between gender and ASIC division ($\chi^2(12)=28.35$, $p<0.005$). Men and women do work disproportionately in different industries. At the individual division level, significantly more women than men worked in the Wholesale and Retail Trade industry ($\chi^2(1)=10.48$, $p<0.005$), whereas significantly more men than women worked in the Transport and Storage industry ($\chi^2(1)=8.48$, $p<0.005$). Chi-squared analysis also showed that men were more likely to work in twelve specific ASIC classes, the most important being – 1300 (Oil and gas), 6142 (Trading banks), 6371 (Legal services), 7200 (Defence), 8242 (Colleges of Advanced Education), 8306 (Religious institutions) and 9144 (Sport and recreation not elsewhere classified). Women were more likely than men to work in only one industry class – ASIC 8305 (Welfare and charitable services not elsewhere classified), however this class had large numbers of respondents – a total of 117 female and 24 male jobs across the five positions listed.

Table 7.2: Industry of employment, first to fifth jobs, by gender and ASIC division

ASIC division	Per cent											
	Male jobs						Female jobs					
	1st	2nd	3rd	4th	5th	All	1st	2nd	3rd	4th	5th	All
Agric, forest	–	–	–	–	–	–	–	0.3	–	–	1.9	0.2
Mining	1.5	2.0	2.9	3.0	5.3	2.2	1.7	1.0	0.5	1.0	–	1.1
Manufacturing	4.4	1.0	1.5	–	–	2.2	1.2	2.2	2.4	2.9	5.7	2.1
Elect, gas, water	–	–	–	–	–	–	–	0.6	–	–	–	0.2
Construction	–	–	–	–	–	–	0.5	0.3	–	1.0	–	0.4
Trade	0.7	1.0	–	–	–	0.6	2.9	3.2	6.2	6.7	3.8	4.0
Transp, store	4.4	4.9	5.9	6.1	10.5	5.3	2.4	3.2	1.0	1.9	1.9	2.3
Communication	3.0	–	1.5	–	–	1.4	1.0	1.0	1.0	–	–	0.8
Finance, business	15.6	14.7	10.3	12.1	15.8	14.0	15.0	16.5	16.2	9.5	13.2	15.1
Pub admin, def	9.6	12.7	7.4	18.2	15.8	11.2	9.2	10.2	13.3	18.1	13.2	11.3
Comm serv	57.0	59.8	67.6	57.6	47.4	59.4	63.9	59.0	58.1	55.2	58.5	60.3
Rec, pers	3.7	3.9	2.9	3.0	–	3.4	2.2	2.5	1.4	3.8	1.9	2.3
Non-classifiable	–	–	–	–	5.3	0.3	–	–	–	–	–	–
All groups	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>No of respondents</i>	<i>135</i>	<i>102</i>	<i>68</i>	<i>33</i>	<i>19</i>		<i>413</i>	<i>315</i>	<i>210</i>	<i>105</i>	<i>53</i>	

Thus, gender does have a role in determining where psychology graduates find employment. Males and females are disproportionately employed in several occupations and industries. On average, men also work slightly longer hours, remain in an occupation longer, and enjoy a higher level of occupational prestige than do women.

7.2 Level of degree

An undergraduate degree in psychology can be completed at a pass, or three year level, or at an honours, or four year level. More often than not, those students completing four year degrees do so in order to undertake some sort of career in psychology, or a psychology-related field.

It should follow that the higher the level of tertiary education, the greater the reward in the form of employment with higher occupational prestige and salary. Thus, graduates with four year degrees should on average be working in employment with a higher occupational prestige rating than graduates with three year degrees. This section will determine if this is the case.

Table 7.3: Occupation, first to fifth jobs, by level of degree and ASCO major group

ASCO major group	Per cent											
	Pass degree jobs						Honours degree jobs					
	1st	2nd	3rd	4th	5th	All	1st	2nd	3rd	4th	5th	All
Managers/Admin	5.1	8.5	10.7	15.9	19.5	8.8	1.4	5.6	17.1	17.6	29.0	8.7
Professionals	56.9	57.7	59.5	58.0	61.0	57.9	82.6	82.6	75.7	80.4	67.7	80.2
Para-professionals	10.9	13.8	15.5	11.4	7.3	12.5	6.8	5.0	0.9	—	3.2	4.3
Tradespersons	0.6	0.4	—	—	—	0.3	—	—	—	—	—	—
Clerks	19.0	13.8	7.7	8.0	7.3	13.8	4.8	5.0	4.5	—	—	4.1
Sales/Service	5.5	4.6	5.4	4.5	4.9	5.1	2.9	1.9	1.8	2.0	—	2.1
Plant/Machine op	—	0.4	—	—	—	0.1	0.5	—	—	—	—	0.2
Labourers	2.0	0.8	1.2	2.3	—	1.4	1.0	—	—	—	—	0.4
All groups	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>No of respondents</i>	<i>348</i>	<i>260</i>	<i>168</i>	<i>88</i>	<i>41</i>		<i>207</i>	<i>161</i>	<i>111</i>	<i>51</i>	<i>31</i>	
Av hrs worked	36.8	36.2	35.9	35.4	34.2	34.8	33.8	34.1	35.9	34.0	35.1	34.4
Av dur (months)	26.2	27.6	21.8	21.3	21.5	23.5	24.0	19.7	19.4	19.3	18.4	21.1
Av occ prest score	50.4	53.0	55.3	55.6	57.4	52.9	60.2	65.8	68.2	67.5	71.6	64.7

Again, respondents with pass degrees and honours degrees were classified into ASCO major groups (Table 7.3). Of the 576 respondents to the survey, 348 with pass degrees and 207 with honours degrees had worked in at least one job. If we examine the proportions working in each ASCO major group, we immediately note that disparate proportions are working in several of the major groups. For example, across all five jobs, 57.9 per cent of pass graduates worked as professionals in comparison to 80.2 per cent of honours graduates. Indeed, there is a statistically significant relationship between the level of a psychology graduates' degree and the ASCO major group in which they find employment ($\chi^2(7)=96.82$, $p<0.005$). Honours degree graduates are significantly more likely to be employed as

professionals ($\chi^2(1)=77.33$, $p<0.005$), whereas pass degree graduates are significantly more likely to be employed as para-professionals ($\chi^2(1)=27.54$, $p<0.005$), clerks ($\chi^2(1)=35.99$, $p<0.005$), sales/service ($\chi^2(1)=7.90$, $p<0.005$) or labourers ($\chi^2(1)=3.99$, $p<0.05$).

Of the 106 different occupations in which psychology graduates found employment in this study, 19 showed a significant difference between pass and honours degree graduates. Honours degree graduates were more likely to work as ASCO 1313 (Public policy managers), 2107 (Life scientists), 2501 (University and CAE teachers), 2903 (Psychologists), 2907 (Other social scientists) and 2999 (Other professionals). Pass degree graduates were more likely to work as ASCO 2399 (Other health diagnosis and treatment practitioners), 2405 (Secondary school teachers), 2503 (TAFE teachers), 2505 (Extra-systemic teachers and instructors), 2601 (Social workers), 2605 (Lawyers), 2705 (Personnel specialists), 3901 (Welfare para-professionals), 3999 (Other para-professionals), 5101 (Office secretaries and stenographers), 5301 (Accounting clerks), 5303 (Insurance and broking clerks) and 5999 (Other clerks). It is not surprising that of these ASCO groups, the group with the highest significant difference is ASCO 2903 (Psychologists) ($\chi^2(1)=119.00$, $p<0.005$), since it is generally recognised that in order to work as a psychologist, a four year degree is required.

The fruits of a higher level of education also seem to include working less hours. For jobs one to four, and on average, honours degree graduates worked less hours than did pass degree graduates. Only for those graduates working a fifth job did honours graduates work longer. Honours graduates also tended to have higher turnover rates, working in a job for an average of 21.1 months, as opposed to pass graduates' 23.5 months. Finally, as predicted, honours degree graduates enjoyed higher levels of occupational prestige in each of the jobs they worked. On average, pass degree graduates worked in jobs with an occupational prestige score of 52.9. Honours degree graduates worked in jobs with an occupational score of 64.7. This difference is significant ($t=11.47$, $df=1,463$, $p<0.001$).

The industries in which pass and honours graduates worked are shown in Table 7.4. As for ASCO major groups, there is a significant relationship between the level of degree and the ASIC division in which graduates work ($\chi^2(12)=49.78$, $p<0.005$). Pass degree graduates are more likely to work in the blue-collar manufacturing industry ($\chi^2(1)=11.10$, $p<0.005$), the trade industry ($\chi^2(1)=12.98$, $p<0.005$) and the finance and business industry ($\chi^2(1)=7.24$, $p<0.01$). Honours

degree graduates are more likely to work in the community services industry ($\chi^2(1)=25.81$, $p<0.005$). All other industries showed no significant relationship between the level of degree and preferring to work in those particular industries.

Graduates found employment in 123 different ASIC industry classes. Chi-squared analysis reveals that honours graduates are significantly more likely to work in eight of these – ASICs 1300 (Oil and gas), 6240 (Services to insurance), 8141 (Hospitals, except psychiatric), 8157 (Community health centres, paramedical), 8158 (Health services not elsewhere classified), 8241 (Universities and CAEs), 8461 (Research and scientific institutions) and 8492 (Police). Pass graduates were significantly more likely to work in ten industry classes – ASICs 3487 (Manufacturing not elsewhere classified), 4814 (Department stores), 6144 (Savings banks), 6232 (Superannuation funds), 6371 (Legal services), 8233 (Secondary schools), 8243 (TAFE colleges), 8244 (Education not elsewhere classified), 8251 (Libraries) and 8305 (Welfare and charitable services not elsewhere classified).

Table 7.4: Industry of employment, first to fifth jobs, by level of degree and ASIC division

ASIC division	Per cent											
	Pass degree jobs						Honours degree jobs					
	1st	2nd	3rd	4th	5th	All	1st	2nd	3rd	4th	5th	All
Agric, forest	–	0.4	–	–	2.4	0.2	–	–	–	–	–	–
Mining	1.8	1.2	0.6	–	–	1.1	1.5	1.3	1.8	3.9	3.2	1.8
Manufacturing	2.6	3.1	3.6	3.4	4.9	3.1	1.0	–	–	–	3.2	0.5
Elect, gas, water	–	0.4	–	–	–	0.1	–	0.6	–	–	–	0.2
Construction	0.6	0.4	–	1.1	–	0.4	–	–	–	–	–	–
Trade	3.2	3.9	7.2	5.7	4.9	4.5	1.0	0.6	0.9	3.9	–	1.1
Transp, store	3.5	4.3	2.4	3.4	2.4	3.5	1.9	2.5	1.8	2.0	6.5	2.3
Communication	1.2	0.8	1.2	–	–	0.9	1.9	0.6	0.9	–	–	1.1
Finance, business	18.7	18.3	15.6	8.0	14.6	16.8	9.2	12.5	13.5	13.7	12.9	11.6
Pub admin, def	9.6	10.1	12.0	20.7	12.2	11.4	8.7	11.9	11.7	13.7	16.1	11.1
Comm serv	55.8	53.7	56.3	51.7	56.1	54.9	72.8	68.1	66.7	62.7	54.8	68.3
Rec, pers	2.9	3.5	1.2	5.7	2.4	3.0	1.9	1.9	2.7	–	–	1.8
Non-classifiable	–	–	–	–	–	–	–	–	–	–	3.2	0.2
All groups	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>No of respondents</i>	<i>342</i>	<i>257</i>	<i>167</i>	<i>87</i>	<i>41</i>		<i>206</i>	<i>160</i>	<i>111</i>	<i>51</i>	<i>31</i>	

The level of undergraduate degree can be seen to play a role in determining a career path. Honours graduates typically find employment in a number of different occupations and industries in comparison to pass graduates. On average honours enjoy slightly shorter working hours, have a higher turnover rate, and were seen to

have markedly higher levels of occupational prestige.

7.3 The effect of further study

In order to gauge what effect post-graduate or further study has on employment, we need to examine respondents who had undertaken such study and compare them to those who had not. For those respondents who had completed post-graduate qualifications, only those jobs worked in following completion of the post-graduate qualification are included for analysis. These are compared with jobs worked by respondents who had not completed any post-graduate qualifications. Table 7.5 shows the proportions of graduates working in each ASCO major group and the average occupational prestige scores for respondents with just a pass or honours degree, in comparison to respondents with a post-graduate Diploma, second Bachelor, Master or PhD degree.

Table 7.5: Occupation, all jobs, by level of further study and ASCO major group

ASCO major group	Per cent					
	No further study		Further study			
	Pass	Honours	Grad Dip	Bachelor	Master	PhD
Managers/Admin	10.3	13.1	10.1	5.5	11.4	—
Professionals	44.8	70.3	71.3	84.6	83.7	100.0
Para-professionals	11.2	7.4	11.1	9.0	1.6	—
Tradespersons	0.4	—	—	—	—	—
Clerks	22.0	6.3	4.8	1.0	1.3	—
Sales/Service	7.8	2.3	2.8	—	2.1	—
Plant/Machine op	—	0.6	—	—	—	—
Labourers	3.4	—	1.0	—	—	—
All groups	100.0	100.0	100.0	100.0	100.0	100.0
<i>No of respondents</i>	<i>111</i>	<i>72</i>	<i>138</i>	<i>71</i>	<i>159</i>	<i>22</i>
<i>Av occ prest score</i>	<i>47.5</i>	<i>59.9</i>	<i>59.2</i>	<i>62.4</i>	<i>72.7</i>	<i>72.5</i>

Generally, the higher the level of completed degree, the greater the tendency to find employment as a professional, at the expense of all other groups. Respondents with just a pass degree often found employment as clerks, para-professionals, managers and administrators and sales/service providers. Those with honours degrees have reached a level of education enabling them to work as psychologists. This partly explains the sharp rise in those working as professionals between the pass and honours groups. Increased proportions also worked as managers/administrators at the honours level. All other ASCO major groups showed substantial decreases.

Most of those respondents with post-graduate qualifications worked as professionals. Those psychology graduates who had also completed a Graduate Diploma worked mainly as ASCO 2903 (Psychologists) (15.9 per cent), 2405 (Secondary school teachers) (13.9 per cent), 2603 (Counsellors) (8.6 per cent), 2705 (Personnel specialists) (8.1 per cent) and 3999 (Other para-professionals) (7.1 per cent). Graduates who had completed a second Bachelor degree worked mainly as ASCO 2601 (Social workers) (29.4 per cent), 2603 (Counsellors) (10.9 per cent) or 2903 (Psychologists) (10.0 per cent). Graduates who had completed a Masters degree worked mainly as ASCO 2903 (Psychologists) (54.1 per cent), 2999 (Other professionals) (8.0 per cent), 2603 (Counsellors) (6.5 per cent), 1313 (Public policy managers) (5.7 per cent), and 2501 (University and CAE teachers) (5.4 per cent). Finally, graduates who had completed a PhD worked as ASCO 2107 (Life scientists) (26.7 per cent), 2501 (University and CAE teachers) (26.7 per cent), 2903 (Psychologists) (26.7 per cent) and 2999 (Other professionals) (20.0 per cent).

If we compare all graduates with no further study to all graduates with higher degree qualifications, we find typically that they are employed in different occupations. This is true at the ASCO major group level ($\chi^2(7)=136.37$, $p<0.005$), as well as the unit group level. Graduates with higher degree qualifications are more likely to be employed as professionals ($\chi^2(1)=79.29$, $p<0.005$), whereas graduates with no higher degree qualifications are more likely to be employed as clerks ($\chi^2(1)=78.63$, $p<0.005$), sales/service providers ($\chi^2(1)=12.54$, $p<0.005$) or labourers ($\chi^2(1)=19.75$, $p<0.005$).

Chi-squared analysis showed significant differences for 27 different ASCO unit groups. Those graduates who had undertaken further study were more often employed as ASCOs 1313 (Public policy managers), 2405 (Secondary school teachers), 2407 (Special education teachers), 2501 (University and CAE teachers), 2601 (Social workers), 2603 (Counsellors), 2903 (Psychologists) and 2999 (Other professionals). Graduates who had not undertaken any further study significantly more often worked as ASCOs 1201 (General managers), 1301 (Finance managers), 2799 (Other business professionals), 2807 (Journalists), 2907 (Other social scientists), 3401 (Registered nurses), 3501 (Police), nine different types of clerks or office secretaries, 6301 (Sales assistants), 6505 (Waiters and waitresses), 6601 (Child care, refuge and related workers) and 8301 (Cleaners).

Graduates with higher degrees were generally employed in occupations with higher occupational prestige scores. The average occupational prestige score for

graduates with a pass degree (and no further study) was 47.5. This rose to 59.9 for those with an honours degree. For those graduates who had undertaken further study, scores ranged from 59.2 for those with Graduate Diplomas to 72.5 for those with PhD's. Note that the difference between those with a Master's degree (average score 72.7) and those with a PhD (average score 72.5) is minimal. This tends to suggest that on average, a Master's degree is sufficient qualification for most occupations undertaken by psychology graduates. Although the jobs worked in may not differ much in terms of occupational prestige, it is suspected that the general public still holds a PhD in higher regard than an MSc, MPsych or MA.

The average occupational prestige score for those graduates who had not undertaken any further study (ie. those with just a pass or honours degree) was 52.9. The score for those who had undertaken further study (be it a Graduate Diploma, second Bachelor, Master or PhD) was 65.1. The difference between these two scores is significant ($t=11.70$, $df=1,410$, $p<0.001$).

The level of post-graduate study undertaken can be seen to affect access to occupations with higher levels of perceived prestige. The higher the degree completed, the greater the tendency to be employed in an occupation with a higher level of prestige. There is also a tendency towards employment in occupations within the ASCO Professional major group.

7.4 Relevance of degree(s), job satisfaction and professional membership

Respondents were asked to complete several survey questions relating to their satisfaction with their study and employment (Appendix 1, survey section 5). These included three Likert-type scales, which asked graduates to rate the relevance of their undergraduate and post-graduate degrees to their careers, and their satisfaction with their present position. If graduates indicated that they were dissatisfied with their present position, they were asked whether they preferred to be working in some other field which would utilise their qualifications in psychology. Graduates were also asked whether they were members of the Australian Psychological Society, or whether they were registered with any State Psychology Boards. Finally, graduates were invited to add any comments about their training or employment.

Relevance of degree

In response to rating the relevance of their undergraduate psychology degree to their careers, the average score returned by graduates was 5.81 (where 1=irrelevant, 3=not very relevant, 5=undecided, 7=relevant and 9=extremely relevant). This score rates somewhere between 'undecided' and 'relevant'.

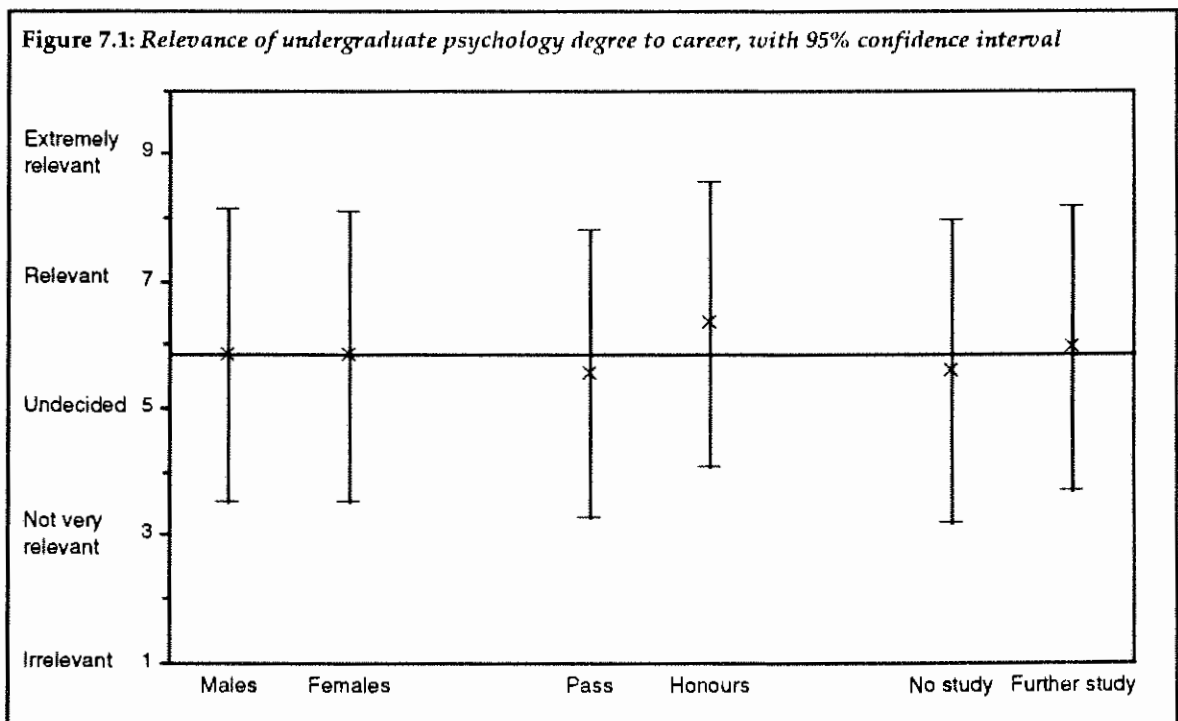
Psychology educators can, at best, be only moderately happy with this rating. Given that only those graduates motivated enough to respond to the survey were included in the analysis, it is very likely that satisfaction amongst all psychology graduates is even lower. However, the nature of the psychology degree makes it difficult to be 'all things to all men' in preparing graduates for all aspects and functions within the employment market.

On the one hand, it is such that graduates embarking upon careers in psychology may complain about the lack of practical work or placements within their degrees. On the other hand, those graduates finding employment in other fields besides psychology may just as likely bemoan the lack of relevance or transferability of their skills to the workplace. Anecdotal evidence for these observations was obtained from the last part of the survey form, which invited respondents to add their own comments about their training or employment. It was a common observation, especially amongst those with pass psychology degrees, that the degree did not adequately prepare graduates for the labour force.

Many psychology educators, however, would view the undergraduate

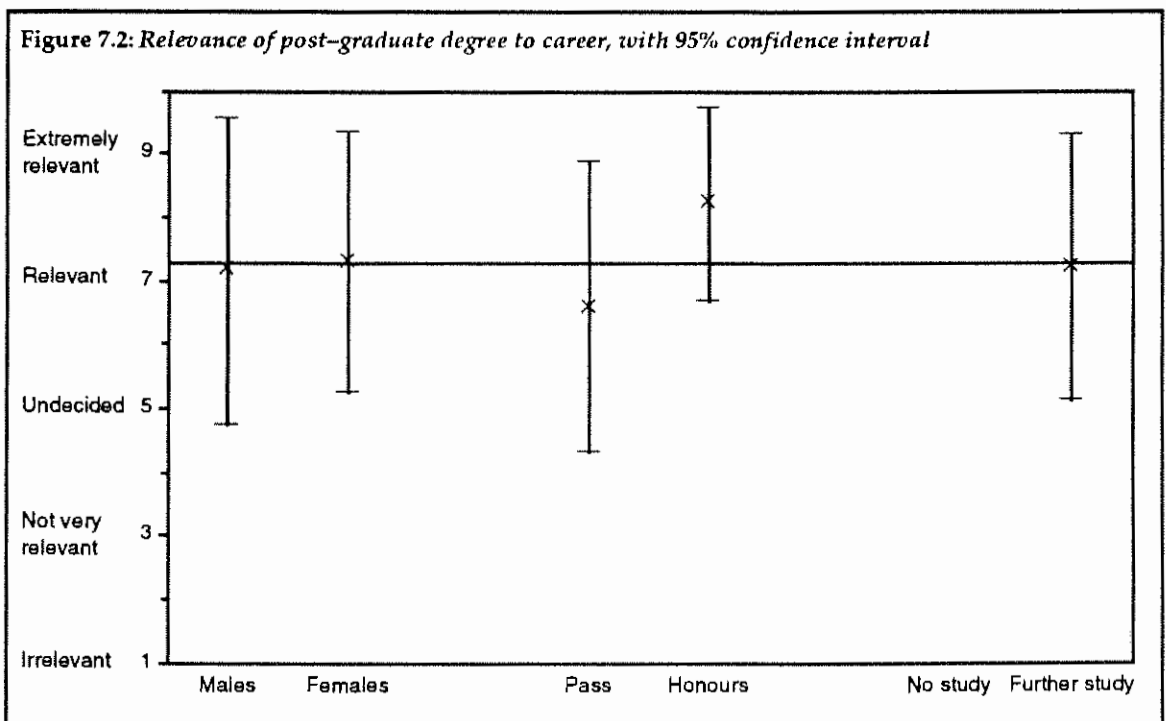
psychology degree as really only equipping the student with 'basic science'. Later degrees would then be seen as the right basis on which to build practical and applied skills. Judging from comments received, this view was not shared by graduates.

If we consider various sub-samples of our psychology graduates, we gain more revealing results (Figure 7.1). Firstly, there are no gender differences in rating degree relevance. On average, males rated the degree at 5.82, whereas females rated it at 5.81 ($t=0.05$, $df=570$, n.s.). However, pass graduates rated their psychology degree at 5.53, in comparison to honours graduates' 6.30. This difference is significant ($t=3.91$, $df=570$, $p<0.001$) – honours graduates felt that their degree was more relevant to their careers. We have seen that honours graduates are more likely to access careers with significant psychological content; the honours degree allows for registration as a psychologist, APS Associate Membership and full APS membership after two years of supervised work experience. A fourth year may also equip a graduate with a greater number of appropriate skills. Lastly, graduates who had not undertaken any further study rated the relevance of their undergraduate degree at 5.57. Graduates who had completed a higher degree rated their undergraduate degree at 5.93. This difference is not significant ($t=1.71$, $df=570$, n.s.). For post-graduates, it is presumably their higher qualifications that would be of most relevance to their careers. This is what we will look at next.



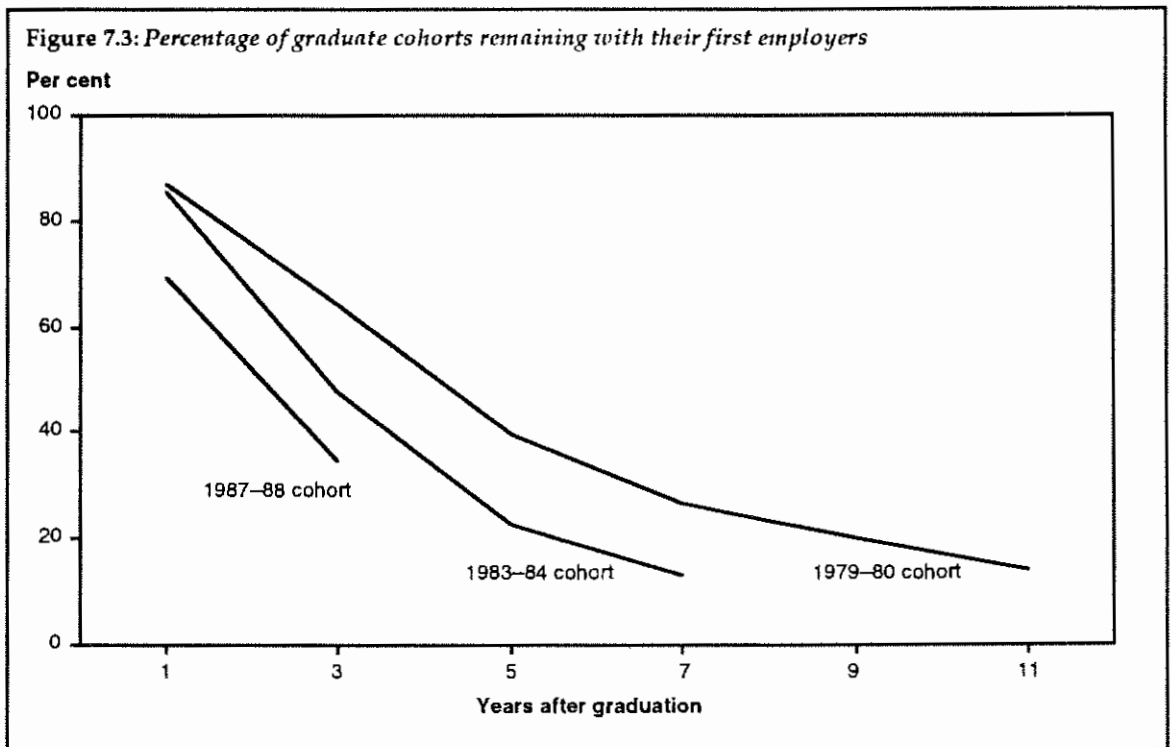
Post-graduates were asked to rate the relevance of their higher qualification to their careers. The average score returned was 7.26, slightly higher than 'relevant'. This score is much higher than that for the undergraduate degree, which was rated at 5.81. Again, several sub-categories are also examined (Figure 7.2). Males returned a rating of 7.15, and females a rating of 7.30. As for the undergraduate degree, there is no significant difference between males and females in rating the relevance of their post-graduate qualifications to their careers ($t=0.43$, $df=212$, n.s.). There is, however, a significant difference between pass graduates, who rated their post-graduate qualification at 6.59, and honours graduates, who rated it at 8.20 ($t=5.81$, $df=212$, $p<0.001$).

Post-graduate qualifications were rated as of greater relevance than undergraduate qualifications by all sub-categories in equipping graduates for the work place. Presumably, within the post-graduate qualification are obtained the necessary applied skills for the practice of psychology and other professions. Post-graduates who return to study after some years in the labourforce would also have a clearer idea of how their further qualifications will be of relevance when they return to the work place, thus leading them to rate their post-graduate qualification as being of greater relevance. It may well be that those pass graduates who complained about the lack of relevance of their degrees misunderstood the role of an undergraduate pass degree.



Length of stay within jobs

We have seen that the average length of time spent in any one job was 22.6 months, ranging from 25.4 months for the first job after graduation to 20.2 months for those who worked a fifth job (Table 4.1). We have also seen that this differs for males (average 25.8 months) and females (average 21.5 months) (Table 7.1). It also differs for pass graduates (average 23.5 months) and honours graduates (average 21.1 months) (Table 7.3). On average, males spend longer in any one job, as do pass graduates. In comparison, both females and honours graduates have higher turnover rates.



The amount of time spent in a job also varies according to year of graduation. Figure 7.3 examines various cohorts, and shows the percentage of full-time employed respondents who are still with their first employers at two-yearly intervals following graduation. Note that the retention rate drops for each cohort – 87 per cent of the 1979–80 cohort were still with their first employers one year after graduation. This fell to 85 per cent for the 1983–84 cohort and 70 per cent for the 1987–88 cohort. Three years after graduation, the figures were 64, 48 and 35 per cent respectively. More recent graduates are demonstrating higher turnover rates.

This has implications for both employers and graduates. Employers who see more graduates staying shorter amounts of time will need to spend increased

amounts of money on such matters as job advertising, recruitment and training. There may also be a flow-on effect to other areas of the workplace due to this increased turnover, involving disruption, reorganisation and reduced productivity. Graduates seeking to accelerate their career paths will move to more senior positions in shorter amounts of time. One example where this has occurred is in the increased proportions of more recent graduates working as managers or senior administrators across each of the three graduate cohorts (Table 5.2). This will result in younger persons attaining positions of increased responsibility sooner.

Reasons for leaving jobs

Increased turnover rates raise the question as to why graduates are leaving their jobs. Table 7.6 details the reasons given for leaving all jobs, except the respondents' current job. These reasons are further disaggregated by sex, the level of the psychology degree, and whether or not the graduate undertook further post-graduate studies.

Table 7.6: Reasons for leaving job, by sex, level of degree and further study

Reason	Per cent						Total
	Sex		Level of degree		Further study		
	Males	Females	Pass	Honours	No	Yes	
Promotion	24.8	23.0	21.1	20.8	19.8	21.4	21.0
Resigned or retrenched	5.0	4.3	5.2	2.2	7.4	2.9	4.0
To travel, go overseas	3.7	12.0	9.2	8.2	12.3	7.6	8.8
Transferred, seconded	3.2	2.9	3.1	1.9	4.1	2.1	2.6
Wanted a change	9.2	6.7	6.7	6.3	4.9	7.1	6.6
Better position	18.8	14.1	11.8	16.7	14.4	13.4	13.7
To study or train	7.8	8.5	6.1	9.6	0.8	9.7	7.4
Burnout, stress	0.9	0.8	0.5	1.1	1.2	0.6	0.7
Maternity leave	—	8.3	5.7	5.2	5.8	5.4	5.5
Funding or contract ended	1.4	4.0	2.2	4.1	2.5	3.1	3.0
Only temporary position	6.4	11.3	9.2	8.7	7.4	9.6	9.0
Moved	1.4	4.3	3.6	2.5	3.3	3.1	3.2
Dissatisfied	2.8	4.3	4.5	1.9	5.3	2.9	3.5
All other reasons	14.7	11.5	11.1	10.9	10.7	11.1	11.0
All reasons	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of respondents	101	329	267	163	121	309	430

The most popular reason for leaving a job was in order to receive promotion to another position (21.0 per cent). Second was in order to seek a better, or more interesting position (13.7 per cent). Numbers of graduates undertook only temporary positions; this was the third most common reason for having to leave one's job (9.0 per cent). Graduates also chose to leave in order to travel or go

overseas (8.8 per cent), to study or gain further training (7.4 per cent), or simply because they felt they wanted a change (6.6 per cent). Maternity leave (obviously relevant only to female graduates) accounted for 5.5 per cent of those choosing to leave their jobs.

A significant relationship exists between gender and the reason for leaving one's job ($\chi^2(13)=46.99$, $p<0.005$). Specifically, females are more likely to leave their jobs in order to travel ($\chi^2(1)=12.60$, $p<0.005$), for maternity reasons ($\chi^2(1)=19.30$, $p<0.005$), because their positions were only temporary ($\chi^2(1)=4.32$, $p<0.05$), or because they moved from their locations, often in order to accompany spouses ($\chi^2(1)=4.07$, $p<0.05$). If maternity leave is removed (the only reason males cannot give), the chi-squared value falls to 29.30. This still demonstrates a significant relationship, but at the 0.01 level, not the 0.005 level. It has been noted that women, in attempting to balance work and family responsibilities, often arrange their employment to accommodate these responsibilities (ABS, 1993b). This may well involve temporary or permanent withdrawal from the labour force, which may in turn lead to loss of career momentum and difficulties in updating skills when returning to work.

A significant relationship also exists between the level of psychology degree completed (pass or honours) and the reason for leaving one's job ($\chi^2(13)=23.23$, $p<0.05$). Pass graduates were more likely to leave because they resigned or were retrenched ($\chi^2(1)=5.24$, $p<0.05$), or because they were dissatisfied with their position ($\chi^2(1)=4.44$, $p<0.05$). Honours graduates were significantly more likely to leave because they found a better or more interesting position ($\chi^2(1)=4.56$, $p<0.05$), or in order to study or train ($\chi^2(1)=4.02$, $p<0.05$). Pass graduates showed more reasons for becoming disgruntled with their employment than did honours graduates.

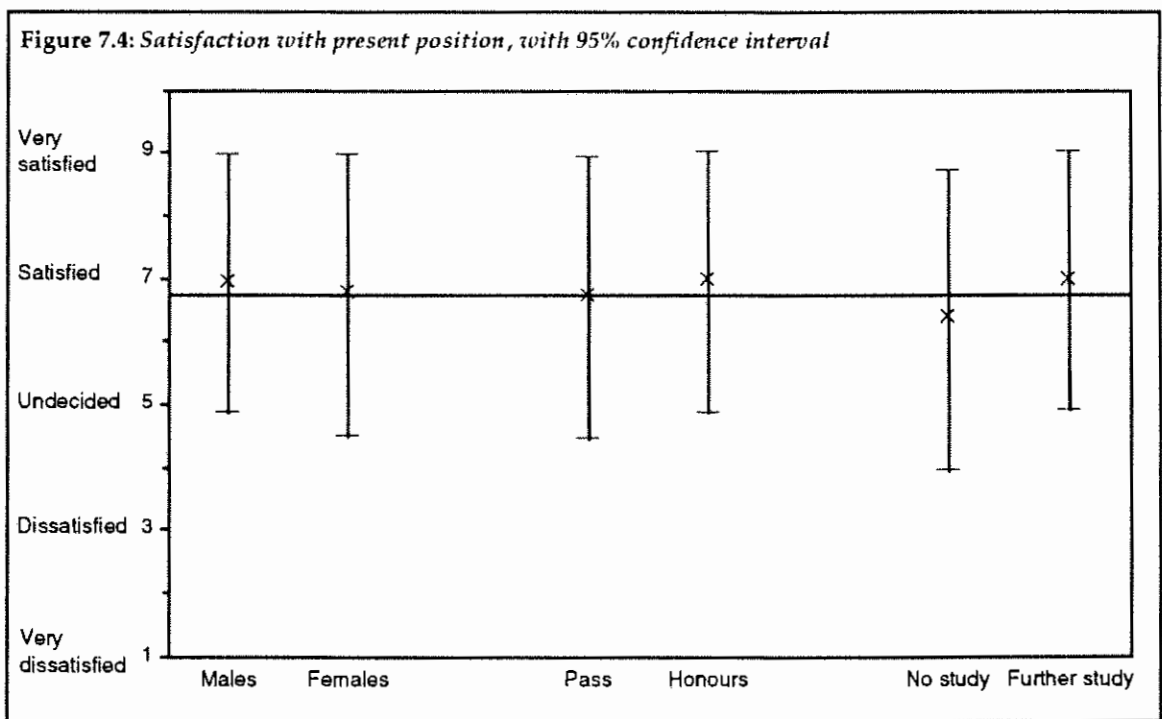
Finally, a significant relationship also exists between whether a person undertook post-graduate studies and the reason for leaving one's job ($\chi^2(13)=43.09$, $p<0.005$). Obviously, post-graduates left more often in order to undertake study or training ($\chi^2(1)=20.71$, $p<0.05$). Graduates who had not undertaken further studies left more often in order to travel ($\chi^2(1)=5.15$, $p<0.05$), or because they resigned or were retrenched ($\chi^2(1)=9.69$, $p<0.05$).

From these analyses, it seems that an honours degree, or post-graduate studies are both associated with greater job satisfaction. Reasons for leaving given by pass graduates and graduates who had not undertaken any further studies

include greater proportions resigning, being retrenched or leaving due to dissatisfaction. In order to substantiate this conclusion, however, we will need to examine an indicator of job satisfaction.

Satisfaction with current position

In response to the question 'How satisfied in general are you with your present position?', respondents returned an average rating of 6.78 (where 1=very dissatisfied, 3=dissatisfied, 5=undecided, 7=satisfied and 9=very satisfied). This rates just below 'satisfied' (Figure 7.4); in general people were content with their current employment.



Males rated their satisfaction level at 6.92, in comparison to females' 6.73. The difference between the two sexes is not significant ($t=-0.91$, $df=558$, n.s.). Neither is the difference between pass graduates' rating of 6.68 and honours graduates' rating of 6.95 ($t=1.39$, $df=558$, n.s.). Both pass and honours graduates show similar levels of satisfaction with their current occupations. This negates the suggestion made above where it was felt that pass graduates may be less satisfied, because of the increased number of negative reasons they gave for leaving their jobs.

There was, however, a significant difference between those graduates who had not undertaken further studies (rating 6.34) and those who had (rating 6.97) ($t=3.22$, $df=558$, $p<0.01$). Post-graduates gave a higher rating of satisfaction with their present position than did graduates who had not undertaken further studies.

It may be that higher qualifications create more job opportunities, so that post-graduates have access to a greater variety of jobs which command higher prestige and salary. Post-graduates in psychology are also in a better position to be able fulfil their career aspiration of working as a psychologist, an aspiration that is denied to many pass graduates, and increasingly, due to greater competition and more stringent employer requirements, many honours graduates.

Some 29.2 per cent of graduates indicated that they were dissatisfied with their present position, i.e. they rated their satisfaction level as less than 5 ('undecided'). Two thirds (66.7 per cent) of these dissatisfied graduates also indicated that they would prefer to be working in some other field that would utilise their psychology qualifications. There was no relationship between gender and preference for another field ($\chi^2(1)=0.07$, n.s.), or whether a graduate had undertaken further studies and preference for another field ($\chi^2(1)=2.43$, n.s.). There was, however, a significant relationship between the level of undergraduate degree attained and preference for another field ($\chi^2(1)=5.04$, $p<0.05$).

If dissatisfied, honours graduates were more likely than pass graduates to indicate that they would rather work in a field which would utilise their qualifications in psychology. Those graduates who studied at an honours level would have the necessary qualifications to be able to work as psychologists. Again, this highlights the finding that less than 20 per cent of all psychology graduates proceed to work as psychologists. These results indicate that this may not necessarily be by choice, and that a significant proportion of those graduates who are not working in psychology-related fields would do so if the opportunity arose.

Membership of professional associations

Of the 576 respondents to the survey, 54 (9.4 per cent) indicated that they were Associate Members of the Australian Psychological Society (APS), and another 67 (11.6 per cent) that they were full Members of the APS. Hence, 21.0 per cent of the respondents had some level of membership of the APS, the body representing the professional interests of psychologists in Australia.

Males are under-represented in this sample. Only 16.3 per cent of all male graduates had some level of APS membership, as opposed to 22.6 per cent of females. Similarly, only 14.8 per cent of pass graduates held a level of APS membership, compared to 31.6 per cent of all honours graduates, although both pass and honours graduates may proceed with further studies enabling them to gain Associate or full APS membership. Finally, only 11.5 per cent of those

graduates who did not undertake a higher degree had a level of APS membership, as opposed to 25.4 per cent of post-graduates.

Although psychology is a female-dominated field of study in the ratio of three females for every male enrolled at university, we have seen that equal proportions of males and females find employment as psychologists following graduation. Thus, it is somewhat surprising to see male APS membership under-represented in the current sample. APS membership figures indicate a predominance of males – in 1970, 31 per cent of members were female; in 1975, 37 percent and in 1983, 38 percent (excluding associate members) (Nixon 1987). In 1988, Taft and Day reported APS membership as being 45 percent female. As regards honours students and those with post-graduate qualifications, it is more likely that these go on to work as psychologists, or in a field related to psychology. Thus it is not surprising to find that pass graduates, unless they undertake further study, and those graduates with no higher qualifications, are under-represented in APS membership.

Of the 576 survey respondents, 133 (23.1 per cent) were registered with a State Psychology Board, including 32 in New South Wales, 52 in Victoria, 45 in Queensland, 3 in Western Australia and 1 in South Australia. There was no relationship between gender and registration with a State Psychology Board; equal proportions were so registered ($\chi^2(1)=0.19$, n.s.). There was a relationship between the level of degree and registration ($\chi^2(1)=48.73$, $p<0.005$), and whether or not the respondent undertook further studies and registration ($\chi^2(1)=18.50$, $p<0.005$). Both honours graduates and post-graduates were more likely to be registered with a State Psychology Board.

Both the proportion of respondents who are APS members (21.0 per cent), and the proportion of respondents who are registered with a State Psychology Board (23.1 per cent) are well in line with our finding of no more than 20 per cent of graduates in psychology going on to work as psychologists. However, APS members may not necessarily work as psychologists; neither might psychologists necessarily be APS members. Similarly, those respondents registered with a State Psychology Board may not necessarily be working as psychologists, although it would seem likely that those who are working as psychologists would need to be registered with a State Psychology Board.

7.5 A model of career path development

Having thus concluded that gender, the level of degree obtained and the level of post-graduate study play an important role in career path development, we can attempt to quantify what part each of these determinants might play.

The best technique for attempting this, with the available measures at hand, is via a simple regression. The survey has yielded at least two outcome measures that can be used as dependent or criterion variables – occupational prestige and job satisfaction rating. For this particular exercise, it would not be possible to use job satisfaction, since the 9 point Likert scale used to measure job satisfaction would not provide enough differentiation between graduates in order to act as a suitable outcome measure. The 100 point ANU3 scale would however, and provides a large enough ‘spread’ or range of scores so as to allow significant differentiation between different graduates and the occupations in which they are working.

It is proposed then, that the occupational prestige score at any one time in a graduates’ career is a function of a number of determinants, or independent variables. In this case we have identified these predictor variables as the gender of the graduate, the level of undergraduate psychology degree obtained, and the level of post-graduate study completed. In the previous sections of Chapter 7, we have also seen that the gender of the graduate is not as likely to affect occupational prestige as the level of the graduates’ degree, and whether or not they had completed any post-graduate study.

There may be any number of other variables affecting a graduates’ occupational prestige score, especially those pertaining to their previous employment history. A significant variable that can be quantified for our purposes is the amount of time the graduate has spent in the labourforce. Longer service can lead to seniority, increased pay, promotion and thus, a higher occupational prestige rating.

Using these variables, we can construct the following model:

- (1) Occupational prestige score = f (gender, level of degree, level of post-graduate study, length of time in the workforce)

A graduates’ occupational prestige score is a function of their gender, the level of their undergraduate psychology degree, the level of post-graduate study they have completed and the length of time they have spent in the workforce.

If we regress these variables against our occupational prestige measure, the

structural equation becomes:

$$(2) \text{ Occupational prestige score} = a + b_1(\text{Gender}) + b_2(\text{Degree level}) + b_3(\text{Graduate Diploma}) + b_4(\text{Bachelor}) + b_5(\text{Master}) + b_6(\text{PhD}) + b_7(\text{Months worked}) + e$$

where a = some constant and e = error

Data were collated for 505 graduates who were currently employed, from a total of 576 survey respondents. In each of the 505 cases, their occupational prestige level was rated for whatever their most current occupation was, using the 100 point ANU3 scale. Their gender was set as 0 = Male, 1 = Female. Their degree level was set as 0 = a three year, or pass degree and 1 = a four year, or honours degree. For each of the Graduate Diploma, second Bachelor, Master and PhD variables, they were set to 0 if none were held, and 1 if they were. The number of months each respondent had spent in the workforce was entered as is.

Survey data were analysed using the SAS statistical package (SAS Institute Inc., 1985) and yielded the following regression equation:

$$(3) \text{ Occupational prestige score} = 52.35 - 0.91(\text{Gender}) + 9.75 (\text{Degree level}) + 0.42 (\text{Graduate Diploma}) + 1.19 (\text{Bachelor}) + 6.83 (\text{Master}) + 8.67 (\text{PhD}) + 0.06 (\text{Months worked}) + e$$

Each regression coefficient, except Gender, Graduate Diploma and Bachelor was found to be significant, with a t value greater than two. In this model, gender plays no significant part in determining a graduates' occupational prestige score, confirming what was found earlier in this chapter. This was to be expected, however, since the same data source was used in each case. In this model, a graduates' happening to be female results in a loss of less than one point in a hundred of occupational prestige.

Moving from a three year, or pass degree, to a four year, or honours degree leads to a gain of almost 10 points in occupational prestige. As the level of post-graduate study increases, so does the occupational prestige score. Gains in scores are minimal for both a Graduate Diploma and a second Bachelor degree. However, gaining a Master's or PhD degree leads to a substantial increase in occupational prestige – almost 7 points for a Master's degree, and almost 9 points for a PhD degree. Finally, each month spent in the workforce leads to a gain of 0.06 points in occupational prestige score.

The baseline occupational prestige score is 52.35. This is the average score a

male with a three year degree, no higher qualifications and no prior labourforce experience can expect to gain upon entering his first job. Any variation in this profile will lead to an appropriate variation in the occupational prestige score. For example, a female honours psychology graduate who subsequently gains a PhD, and has six years workforce experience, can expect an average occupational prestige score of 74.18. This is, in fact, relatively close to the known occupational prestige score for a psychologist, which is 80.8.

The R^2 value for this model is 0.19, which is to say that the model explains about 20 per cent of the variation in the dependent variable. A higher R^2 coefficient might have been obtained by using a more sophisticated outcome measure, such as a graduate's salary. The ANU3 occupational prestige score measure is fairly crude in this instance – for example, it makes no distinction between a new graduate working as, say, a Class 1 Psychologist in the Public Service, or a Class 3 Psychologist with 20 years service. Both are still coded as 'Psychologist', with an occupational prestige score of 80.8. Salary is more commensurate with age, years of experience, tertiary qualifications, level of seniority and function, and hence would serve as a better outcome measure. In this study, no questions were asked about graduate's salary, as it was felt that this would infringe upon confidentiality, leading to a lower response rate.

It is also possible that numbers of unknown variables may have a significant impact in determining occupational prestige scores. Formulating a better model with more relevant predictor variables, will lead to accounting for more variance, and hence higher R^2 values. The simplistic model formulated here is the best one can construct with the available data. A more sophisticated model will require a further study.

The model serves to quantify the relative effect that each of the determinants has on occupational prestige score. An honours degree, as well as higher degree study at the Master's or PhD level, as well as a large amount of workforce experience were found to be the major determinants of occupational prestige.

Chapter 8

Conclusions

This study has attempted to describe the career paths of psychology graduates. It has clarified the reasons as to why graduates initially chose to study psychology and has given details of both their undergraduate and post-graduate study. The study has shown in which occupations and industries psychology graduates find employment, and has demonstrated how graduate employment in these occupations and industries has changed during the 1980's and early 1990's. It was hypothesised that a number of factors, including the graduates' gender, level of psychology degree and post-graduate study, influenced the development of a career path. These factors were used to construct a model of career path development for psychology graduates.

8.1 Summary of results

Some 576 graduates in psychology, from five large metropolitan universities, replied to a mailed survey which asked for details of their study, employment and career paths since graduation.

Respondents decided to undertake the study of psychology for a number of different reasons, the most popular being an interest in pursuing a career in psychology (38 per cent of respondents). Since it was also found that only some 20 per cent of psychology proceeded to work as psychologists, this meant that a certain proportion (in this study, 18 per cent) of graduates will not fulfil their primary career aspirations. Career choices may then be compromised, leading graduates to work in positions that may only be marginally related to psychology or not related to psychology at all.

Respondents' interest in psychology as a career was by far the most common reason for studying psychology, given by 38.0 per cent of respondents. The second most common reason (15.3 per cent of respondents), 'To increase my knowledge and skills', indicated that significant numbers of persons are enrolling in the study of psychology even though they had no intention of pursuing a career in the field. A third reason (13.2 per cent of respondents), 'I wanted to help other' revealed that

a proportion of graduates felt that their altruistic motives could best be expressed through the study and application of psychology. Other lesser reasons given for the study of psychology included so as to be able to work with people, that it was an unplanned occurrence, in order to find out more about oneself, and because of the influence of another person.

Whilst engaged in the study of psychology at university, almost half the sample (48.6 per cent) majored solely in psychology. The remainder majored in a wide variety of subjects, which might lend influence to the future direction of graduates' careers. The majority of these majors were Arts-related (23.4 per cent), although how relevant or applicable many of these majors were to the workplace is open to question. Science, business and health-related majors were undertaken by a minority of respondents (a total of 24.4 per cent). It was noted that business-related majors had increased over the decade, reflecting the changing nature of the psychology labour market. The rise in private sector employment of psychology graduates meant that subject preferences for graduates had changed and will continue to change, again reflecting changes in the psychology labour market.

Following completion of their psychology degrees, 60 per cent of respondents graduated with a BA degree, and 40 per cent with a BSc, BSc(Psych) or BBehavSci degree. The same proportions graduated with pass, or three year degrees (62 per cent) and honours, or four year degrees (38 per cent). It was the division of graduates into three year and four year degrees that was found to be one of the major determinants in determining the subsequent direction of graduates' career paths. Four year honours graduates were more likely to become psychologists, or work in an area closely related to psychology, in comparison to three year graduates. Lastly, graduates in psychology were most likely to be female – women outnumbering men by a ratio of three to one.

The most common occupation for graduates in psychology is that of psychologist – however, only one in five graduates were found to ever work as psychologists. Other common occupations which graduates engaged in included research officers or assistants, counsellors, personnel specialists, secondary and tertiary teachers and educators, social workers and business professionals. In fact, this sample of 576 graduates worked in some 115 specific occupations, thereby demonstrating the diversity of career paths for psychology graduates as opposed to say, graduates in engineering, architecture, medicine or physiotherapy. Most psychology graduates worked as what can be broadly termed 'professionals',

although others work as clerks, para-professionals and managers / administrators – the latter increasingly so as graduates' careers continued. Generally, with the advancement of a graduates' career, the level of occupational prestige as measured by the ANU3 scale (Jones 1988) increased from occupation to occupation – the average score for all respondents being 57.4. The average number of hours worked decreased slightly across successive jobs, as did the average duration of each job.

The number of industries in which graduates carried out their work reflected the diversity of their occupations; this sample of psychology graduates worked in 123 specific industries. Most of these (60.1 per cent) were broadly grouped in the community services area; finance, property and business (14.8 per cent) and public administration and defence also being common (11.3 per cent). The most common industry settings in which graduates found employment include universities and CAE's, secondary schools, community health centres, State, Federal and local governments, hospitals, savings banks and market and business consultancy services.

Both the occupations and industries in which graduates worked were cross-classified, in order to fully describe what occupations psychology graduates were most commonly engaged in, and where these occupations were carried out. Almost half (47.7 per cent) of all jobs could be broadly described as professionals working within the community services field. More specifically, graduates most commonly worked as research assistants and officers in universities; secondary teachers in public high schools; psychologists in community health centres, hospitals or in a private capacity; teachers or tutors in universities or CAE's, and social workers or other welfare para-professionals in a variety of different welfare and charitable services.

If different cohorts of graduates are analysed, some notable trends emerge. Analysis of 1979–80, 1983–84 and 1987–88 graduates revealed that for all three cohorts, the proportions engaged in full-time work increased over time to a point, then decreased. The proportion of graduates studying full-time also decreased as they completed their studies and moved into the labourforce. Of note was that part-time work became an increasingly popular option over time. If longitudinal trends between cohorts are examined, we note that less graduates are exclusively working full-time, preferring instead to work part-time and possibly combining this with study, or alternatively working full-time and studying part-time.

Cohort trends also revealed that the proportions of graduates working as

professionals or para-professionals remained steady over time, whereas those working as managers / administrators increased in popularity, and clerks decreased in popularity. However, if we consider trends between the three cohorts, we see that working as a professional became less popular. Later graduates increasingly found employment in research, welfare, business and management positions. Occupations within psychology and personnel maintained their levels throughout the 1980's, whereas clerical and teaching positions decreased in popularity. Similarly, whereas earlier graduates had most often found employment within the community services industry, later graduates began to find employment in other industries, such as finance, property and business. Employment in education declined substantially, and employment in government and health remained steady.

Following the completion of their first psychology degrees, over two thirds (67.7 per cent) of respondents went on at some point in their careers to undertake further university studies which led to either a post-graduate degree, a second Bachelor's degree or a Graduate Diploma. In addition, 13.7 per cent of respondents completed two such further qualifications. Almost half (47.8 per cent) of these first extra qualifications were psychology-related, and were mainly undertaken so as to further career or employment prospects, or in order to gain the necessary qualifications in psychology for professional registration. The remainder of qualifications were in related fields such as social work and counselling, as well as in fields such as business, law and education. Most first extra qualifications were completed at a pass level, roughly divided between full-time (57.2 per cent) and part-time (42.6 per cent). Significantly more graduates completed their second extra qualifications part-time (67.1 per cent), as opposed to full-time (30.4 per cent). Common qualifications undertaken were a DipEd, a DipPsych, a graduate diploma in Applied Psych, a BSocWork, an MA (Psych), an MPsych or a PhD in psychology.

Several factors were thought to have an important bearing on determining the career paths of psychology graduates. Three such determinants considered in detail were gender, the level of the undergraduate psychology degree and whether any post-graduate study was completed. Males and females were found to be disproportionately employed in several occupations and industries, although if considered overall there were found to be no substantial differences in employment patterns. Generally, males worked slightly longer hours, remained in

a job longer and worked in jobs with higher levels of occupational prestige. The level of undergraduate degree, i.e. whether it was three or four years in duration, was found to be one of the most important factors in shaping a career path. Honours, or four year graduates were employed in jobs with higher occupational prestige. A substantially higher proportion of honours graduates were employed as psychologists. Honours graduates worked shorter hours and had a higher turnover rate in their positions than did pass degree graduates. An honours degree allows for suitable employment as a psychologist, and after appropriate supervision, or an additional two years approved tertiary training, full APS membership. It also serves as a necessary qualification for higher degree study in psychology. Further study, most notably at the Masters and PhD level, was also found to have bearing on increased levels of occupational prestige.

Respondents were asked to complete a number of survey questions relating to their perception of the relevance of their degree(s), their job satisfaction and their professional membership. Respondents were undecided in rating the relevance of their undergraduate psychology degrees to their careers. Those graduates with honours degrees rated their degree as significantly more relevant to their career than did those with pass degrees. Those graduates who had completed higher tertiary qualifications saw these qualifications as of much greater relevance to their careers than their undergraduate degrees. When asked to give reasons as to why they left their jobs, both honours and post-graduate degree holders gave less 'negative' reasons for doing so than did pass degree holders and those with no further qualifications. In this case, negative reasons included dissatisfaction, retrenchment or resignation. As regards their most current occupation, both pass and honours level graduates, as well as male and female graduates, showed similar levels of job satisfaction. Post-graduates rated their job satisfaction on a higher level than did undergraduates. Finally, some 21.0 per cent of graduates held a level of membership of the Australian Psychological Society, and 23.1 per cent of graduates were registered with a State Psychology Board. These figures are similar to the proportion of psychology graduates found to be working as psychologists.

Using the above career path determinants – gender, undergraduate degree level, and post-graduate study level, as well as workforce experience– a regression model of career path development was developed, utilising respondent's occupational prestige scores as an outcome measure. The model served to quantify the relative effect that each of these determinants has on occupational prestige. An

honours degree, as well as higher degree study at the Master's or PhD level, combined with workforce experience were found to be the major determinants of occupational prestige scores.

8.2 Comparison with other studies

Over the last decade, numerous studies have analysed employment prospects and trends specifically for psychologists (Byrne, 1982; Over et al., 1985; Thomas and Wearing, 1986; Groth-Marnat, 1988; Byrne and Reinhart, 1990; Reid and Lord, 1990). Comment on the state of psychologist employment is ongoing, and is covered in specialist journals such as *Australian Psychologist*, and the *Bulletin of the Australian Psychological Society*. It should be noted that only some 20 per cent of the current sample of graduates were found to be working as psychologists, so the above studies are concerned with a small, although significant sub-sample of the current study.

In contrast are the few studies that have explored the career and employment prospects of psychology graduates (as opposed to psychologists). These are now several years old, having been conducted in the early to mid-1980's (Over, 1981, 1983; Mullaly et al., 1985; Coyte, 1985). Since then, little if any research has been conducted into the field, despite the fact that university psychology enrolment have maintained their levels and that the labour market has changed considerably over the previous decade.

As we have seen in Chapter 5.3, a number of sources of longitudinal data regarding psychology graduates are also extant, but these have not been analysed in any systematic manner. These include data from the 1981, 1986 and 1991 census detailing the labourforce status, occupations and industries in which graduates were working, as well as Graduate Careers Council of Australia (GCCA) data reporting the first employment destinations of graduates. Both these sources have their limitations, but can be used to draw some useful conclusions about trends in the employment of psychology graduates.

The current study has analysed data for psychology graduates who have entered the labourforce since the early 1980's. These data are contemporaneous with several of the studies mentioned above, and hence lend themselves to comparison. It is also possible to confirm or deny some of the forecasts that were made by these studies, regarding what they saw as possible future directions for the psychology labour force.

Over (1981)

Over (1981), reporting on the employment prospects for psychology graduates, noted the expanded output from tertiary institutions, accompanied by reduced recruitment of graduates by traditional employers of psychologists. By all accounts, this trend has continued. Chapter 5.2 of this study noted reduced employment opportunities during the 1980's in the education sector, a traditional employer, and also in the clerical field. During the decade, the proportion of graduates finding employment in psychology and personnel remained steady, whereas the proportions employed in welfare, research, business and management increased. Graduates once typically found employment within the community services industry – this changed somewhat as more graduates found employment within the finance, property and business industry and other less common industries. Community services remained the major employment industry, but its dominance was eroded throughout the decade. Less graduates also chose to work in the public administration and defence industry. Whereas the public service was once a traditional employer, the changing market saw graduates abandon the flat government sector in favour of more promising opportunities within the private sector.

In considering pass degree graduates, Over noted that until the early 1980's, primary or secondary teaching was a common career option. Both this study and GCCA data confirm the fall in favour of teaching as a preferred employment option. Three years after graduation, 16.9 per cent of the 1979–80 cohort of graduates were working as secondary school teachers. This fell to 10.4 per cent of the 1983–84 cohort, and 3.3 per cent of the 1987–88 cohort (Chapter 5.2). In 1981, 9.9 per cent of graduates chose a job in the education sector as their first field of employment. By 1991, this figure had fallen to 5.3 per cent. In light of reduced employment opportunities in traditional fields such as education, pass graduates were forced to seek new areas in other fields such as welfare and business.

The observation was also made that increasing numbers of pass degree graduates were returning to full-time study, probably to fulfil academic requirements for APS membership (Over, 1981). This study also found a net increase in graduates returning to study, although it was observed that many of these students studied only part-time, often combining this with either full-time or part-time work. This effect has also flowed-on to honours graduates. Increasing numbers are returning to obtain higher degree qualifications, in order to gain the

applied skills taught at this level of study, and also to increase their employment opportunities. Whereas once an honours degree in psychology was sufficient for many psychology positions, now the requirements have increased to require a Masters or other higher level degree. Whereas once pass degree graduates had to compete for available positions, now honours degree graduates find themselves in the same position.

Over (1983)

In his 1983 study, Over explored the educational background, reasons for training in psychology, course preferences and career objectives of undergraduate students at three Australian universities. The sample of 412 students saw women outnumbering men by almost three to one, a trend that has continued (see Appendix 5, Table 1). Most respondents had enrolled in psychology because of a desire to work for and with people, and through interest in the work of a psychologist. The current study found 38.0 per cent of respondents gave their main reason for studying psychology as their interest in pursuing psychology as a career. A further 13.2 per cent wanted to help others, and 9.5 per cent enjoyed working with people (Chapter 3.1).

Of interest was Over's finding that only 63 per cent of men and 68 per cent of women felt that the undergraduate psychology training they were receiving was relevant to the careers they were hoping to pursue. With the benefit of hindsight, 62 per cent of respondents in the current study rated their undergraduate degree as greater than 5 ('undecided') on a 9-point Likert scale. Ratings of greater than 5 can be taken as being equivalent to 'relevant'. In contrast, fully 80.8 per cent of respondents in the current study rated their *post-graduate* study as relevant (Chapter 7.4).

Two thirds of Over's sample anticipated a major interruption to their working lives at some point in their career, including overseas travel (47 per cent of men and 59 per cent of women), further study (56 per cent of men and 49 per cent of women) and childrearing (8 per cent of men and 41 per cent of women). A comparison with these figures is afforded by Table 7.6, which detailed the most common reasons that the current sample of graduates gave for leaving their jobs. Only 8.8 per cent of respondents left their jobs in order to travel, although others may have decided on embarking on extended travel whilst still maintaining their current position of employment, through leave-without-pay, the taking of sabbaticals and the like. Only 7.4 per cent of respondents had left their jobs in order to undertake further

study or training. Again, it is feasible that study might have been undertaken concurrently with employment. Finally, only 8.3 per cent of women left a position of employment due to maternity leave. If the samples from the two studies are at all comparable, they show that, in this case, respondents' intentions are at some variance with their actual behaviour. The figures are disparate, however the current study does not account for what may be respondents' future actions, only their actions to date.

Despite the fact that the employment prospects of graduates in Over's sample were rated as only fair by 44 per cent, poor by 30 per cent and non-existent by 6 per cent, the graduate unemployment rate for the current sample never rose above 4 per cent. Even a bare six months after graduation, GCCA figures show that the unemployment rate never topped 10.3 per cent (Appendix 5, Table 8). These figures tend to suggest that although graduates may not necessarily find employment in their positions of first choice, they are more resourceful in finding new employment opportunities than their pre-graduation pessimism would suggest.

Over foresaw the need for psychology graduates to find employment in non-traditional areas, and that relatively few students were educationally or attitudinally prepared for private sector employment. This situation has changed somewhat. We have already noted the shift in employment patterns away from what were seen as traditional spheres, especially the move into the finance, property and business industry (Chapter 5.2). The question might be raised as to whether this move was deliberate in that graduates sought out more desirable occupations, or whether it was forced upon graduates by the economic realities of the changing psychology market. Certainly most graduates in the current study indicated a desire to work within a traditional human services sphere. Contracting traditional opportunities meant that initially graduates may have been forced to look elsewhere for employment, but as new markets and opportunities arose, and the level of awareness of these increased, graduates may have searched these out as preferred employment options. Over noted that,

"In the final analysis the attitudes and expectations of students may be of overriding importance. Students are at present attracted to psychology by the wish to train and work in particular contexts. To produce a different graduate, it may well be necessary to attract a different kind of student to psychology."

If we consider the changes that have taken place, and are continuing to take place in the labour market, this may well be the case. Different students are being

attracted to psychology in 1993 than was the case in 1983, or for that matter, 1973.

Mullaly et al. (1985)

Mullaly, Kelly and Wearing posed the question 'where do psychology honours graduates go' after leaving university. Honours graduates who graduated from the University of Melbourne in 1979, 1980 and 1981 were found to take on a wide variety of jobs, were often found to continue with further study, and were found to be only rarely involuntarily unemployed. At the time that the study was conducted, Mullaly et al. noted that jobs were "becoming more difficult to get". Most graduates were satisfied with their work, but generally did not see themselves remaining in their present employment for long.

The majority (58 per cent) of the sample described themselves as working full-time at the time of the survey, with a further 37 per cent studying full-time. It is not clear how long after graduation the survey was conducted, so it is not possible to compare results from the study with results from a particular cohort of the present study. Regardless of this fact, the numbers working full-time suggest that the study was conducted during, or soon after 1982, since the workforce participation rate of graduates is comparatively low, and the proportion of graduates still studying is so high. The proportion unemployed was 5.8 per cent.

The study found a diverse range of employment areas for graduates, both in traditional and non-traditional realms. Three broad areas were distinguished – clinical psychology (21 per cent), psychology-related jobs in non-clinical fields (41 per cent) and non-psychology related positions (38 per cent). The division of occupations into these groups involves some judgement as to what is 'psychology-related', but having made this, the authors conclude that the majority of graduates were working in areas at least broadly related to their qualifications and areas of interest.

The figure of 21 per cent of respondents working in clinical psychology compares well with the current study. Overall, 17 per cent of graduates (both pass and honours) worked in ASCO 2903 (Psychologists) (Chapter 4.1). Two years after graduation, 12.7 per cent of the 1979–80 cohort, and 20.8 per cent of the 1983–84 cohort were working as psychologists. Mullaly et al. found that the main psychology-related occupations that were available to honours graduates immediately upon completion were in personnel and related areas, and in research. In the present study, ASCO 2999 (Other professionals, mainly research assistants and officers), and ASCO 2705 (Personnel specialists) rated second and fourth

respectively as the most common occupations for graduates. They also found that males were primarily employed in non-clinical psychology-related positions, whilst female graduates held positions mainly outside psychology, but with a greater proportion of females employed as clinical psychologists. This is somewhat at variance with results from the present study, which found equal proportions of males and females employed as psychologists.

When asked to rate their satisfaction with their present position on a 9-point Delighted–Terrible Scale, both males and females gave a mean of 6.6 – ‘Mostly satisfied’ to ‘Pleased’. This again compares well with the present study, which also used a 9 point scale, and returned an average of 6.95 for honours graduates, 6.92 for males and 6.73 for females (Chapter 7.4). Despite the relatively high ratings of job satisfaction, 50 per cent of Mullaly et al.’s sample indicated that they intended to leave their jobs within two years. This may well be accurate, as the present study found the average duration of honours graduates’ first jobs after graduation to be exactly 24.0 months (Chapter 7.2). Most planned to find a better job in a more preferred area, and most appeared to view their current position as a stepping stone to better things. Obtaining a ‘better position’ was the second most common reason given by respondents in the current study for leaving their job.

Most important is Mullaly et al.’s finding that the area of employment for which graduates felt themselves to be best suited by virtue of their training is not the area where most intended to seek work. Most graduates desired to work in clinical or counselling psychology, yet this was perceived as a difficult area to find employment in, and also one in which graduates felt themselves to be inadequately trained. Jobs in market research, industrial psychology and personnel were considered to be most readily available, yet graduates also felt they had not been prepared for these areas, and only a minority were interested in these areas.

This study also found most graduates wished to work in psychology, and that many expressed reservations about their level of training. Further, the transferability of skills to the workplace was another issue of contention. Respondents in Mullaly et al.’s study suggested “...earlier specialisation within courses and greater emphasis on the development of directly employment related skills” as a possible remedy for this situation. In opposition to this is the fact that almost half the sample admitted that their plans had changed in some way following graduation and that many no longer wished to pursue a career in psychology.

Mullaly et al. confirmed that many new psychology graduates are willing to take jobs that do not directly relate to their ultimate career ambitions, viewing these as valuable on-the-job experience, as well as stepping stones to more preferred positions. Those who wish to continue to seek employment in clinical psychology may need to remain 'underemployed' for a period before accessing post-graduate clinical courses. What was not known was whether the intentions of graduates to move to better jobs within the immediate future were realised.

8.3 Implications of results

Although this study has concentrated on past events in identifying the career paths and employment patterns of psychology graduates throughout the 1980's, the results have implications for the future. Past trends in the labour force, when extrapolated, allow us to draw some tentative conclusions about what may occur in the psychology labour market in the future, should current conditions remain constant. Labour market forecasting always involves some element of uncertainty since the market is in a constant state of flux. Certain external factors, such as changes in government policy, and funding of health and education sectors have bearing on the employment market for psychology graduates, but are difficult to account for in any uniform fashion.

Given these cautions, the results of the present study have implications in three main areas:

- Implications for employers and the employment market, most notably the government, private and education sectors.
- Implications for psychology educators and the teaching of psychology in universities, colleges and schools.
- Implications for future graduates; those currently studying psychology or those considering doing so.

Some implications for the employment market

During the previous decade, employment opportunities for graduates in traditional spheres such as clinical psychology, educational psychology, teaching and the public service underwent substantial change. Steady levels in graduate numbers and reduced traditional opportunities meant that new graduates entering the labourforce had to apply their skills to what were considered less traditional spheres of employment in areas such as personnel, management training,

administration, research and business. These are now new, legitimate areas of growth for graduates in psychology. If levels of graduate supply continue and traditional employment markets remain constant, this trend should also continue. It is entirely feasible that these 'new' areas of employment may themselves one day become 'traditional' areas, with the result that graduates will again need to find other areas of employment.

The community services sector will remain the most common employment destination for psychology graduates, but if all other factors remain constant, the sectors' dominance will become increasingly eroded. Graduates continue to prefer employment within the human services industry, but limited employment opportunities in clinical and other traditional areas of psychology means that graduates will need to compromise their career preferences. Should no new employment opportunities arise as a result of changes in funding or government policy, graduates will seek out viable alternatives. The increase in graduates finding employment in the private sector, especially business, has demonstrated that graduates can identify a market for themselves. More research needs to be conducted on the market need for psychologically trained graduates in these non-traditional fields.

We have seen in Chapter 7.4 that more recent graduates are demonstrating higher turnover rates than was previously the case. If employers are seeing graduates staying for briefer amounts of time in a job, they will need to recruit more often and perhaps will need to streamline their recruitment practices. As an example, when we examined our three cohorts of graduates, we notice that more graduates were becoming managers and senior administrators earlier in their careers. This is evidence for what may be increasingly accelerated career paths for later graduates.

The market for professional psychologists is itself undergoing change. Increasingly, job descriptions are being redesignated (Geffen, 1993). Whereas positions may have once specified 'psychologist', many are now being advertised with general counselling descriptions, resulting in psychology graduates having to compete with other health professionals such as social workers. The introduction of the Structural Efficiency Principle and multiskilling by Federal and State governments implies an interchangeability of roles within the health professions (Franklin, 1993). Under these reforms, social workers, occupational therapists and other mental health workers will presumably be able to assume roles that were

previously carried out by psychologists. This can only be seen as destructive for the profession. The increasingly generic nature of health positions has led to the abandonment of any possibility of a separate award for psychologists, and threatens to lead to the non-recognition of post-graduate qualifications in areas such as clinical psychology (Franklin, 1993). Franklin has sounded an alarm in pointing out that under the Structural Efficiency Principle, job promotion will be largely reliant on performance and management qualifications.

Since few positions in business and industry are created specifically for psychologists, graduates will need to compete for jobs classified in such areas as administration, labour relations, management, organisational planning, personnel selection and training, public relations, and sales (Jouning et al., 1984). There is evidence, both from this study and elsewhere (Clough, 1993; Mullaly et al., 1985) that graduates themselves feel that their skills may not necessarily be vocationally relevant. This is especially the case for three year pass graduates. As graduates find new employment areas in which to practice their discipline, they will need to demonstrate the relevance and applicability of their skills. If not gained at university, many of these applied skills will need to be acquired through on-the-job experience.

Jouning et al. (1984) raised the possibility that it is not only graduates who feel that their skills may not be vocationally relevant, but employers as well. Employers and management may well hold stereotyped beliefs as to what it is that psychology graduates are trained to do, thus affecting both the recruitment of graduates and the assignment of roles following employment. As graduates enter new markets, it is increasingly important to establish what are the particular skills graduates possess that would be valued by employers. In turn, employers need to be made aware of the range of skills that psychology graduates possess.

Some implications for psychology educators

Since only one in five psychology graduates actually proceed to work as a psychologist, the question might be posed as to whether or not universities should be training their graduates accordingly. Should graduates only be trained in what could be termed the 'traditional' psychology curriculum, or should courses broaden their coverage to reflect the new opportunities in such areas as business and the private sector. Put more simply, should psychology departments be training generalists or professionals? This study found that many graduates, especially those with three year degrees, were disappointed at the lack of

applicable skills that their degrees equipped them with. Having graduated with a body of knowledge, they faced the challenge of successfully applying that knowledge in a suitable employment sphere.

It has been argued elsewhere (McNicol, 1988) that undergraduate psychology education should remain generalist in nature, not only for the reason that so few graduates actually become psychologists, but also because integrated courses for the training of psychologists are expensive to teach, draw a narrow mix of students, and may lead to problems regarding the cross-accreditation of courses. A generalist education however, also needs to equip graduates with the skills so as to be able to successfully contest employment in a wide range of occupations and industries. Limiting generalist education, especially at the three year level, to a repertoire of academic knowledge and theory may well consign ever-increasing numbers of graduates to unemployment queues, because of the ever-decreasing number of positions in which they can exercise that knowledge and theory.

Just exactly what skills should be taught in three and four year psychology degrees is open to question, and has recently been discussed at length by such bodies as the Course Development and Accreditation Committee (CDAC) of the Australian Psychological Society (Clough, 1993). In arriving at a consensus view of what should be taught in both a three and four year degree, the CDAC has shown its awareness of the new challenges facing recent graduates in the employment market. The challenge for educators is to balance a generalist education with specific vocational skills, so that graduates can successfully apply these skills in an increased range of job opportunities. Recent discussion (O'Gorman, 1993; Geffen, 1993) has focused on the teaching of a set of skills that can form a part of a core of professional psychology. The aim is to train undergraduates to be practitioners as well as scientists, and thus balance theory and applied skills that can hold them in good stead in an increasingly competitive labour market.

Alongside the generalist there may still be a place for the specialist. With the increased opportunities for the employment of psychology graduates in many diverse fields, no single degree can equip graduates with all the skills or knowledge required for these positions. Perhaps specific courses need to be developed, possibly at the TAFE level, in order to train psychology 'technicians' in applied skills designed to meet a specific need in the community. As long ago as 1978, the Working Party on the Role of Psychologists in Health Care recommended the initiation of new courses to train psychologists for areas of particular need,

such as rehabilitation and community health psychology (Kirkby, 1978). The submission also stressed the need for universities to co-ordinate planning, so as to make the best use of scarce resources. Now that new areas in business and other areas are developing, these recommendations are no less valid, but should be extended to include more employment areas than just health and community services. An example might be the establishment of a course in organisational psychology, which would equip a graduate to be able to deal with businesses or companies having difficulties with personnel, work practices, labour or management. Again, the challenge is not to over-supply the specific employment areas, but to identify the employment opportunity and then to suitably equip enough graduates to fill these opportunities.

The training of professional psychologists may also increasingly occur at the post-graduate and higher degree level. The rapid increase in the number of courses offering Master's degrees, plus the redesignation of what were previously psychologist positions will see increasing numbers of graduates competing for limited employment opportunities in clinical areas. As McNicol (1988) points out, these courses also involve considerable financial commitment on the part of tertiary institutions. This may force universities to decrease their number of offers for places in higher degree programs, as they are forced to rationalise limited resources. McNicol foresaw that the psychology profession might play an increasing role in the training of its own members, and that the cost of such training will be borne by the individual or the agency benefiting from it.

Some implications for psychology students

It would seem only logical that prospective graduates in psychology need to become aware of the labour market into which they are soon to be launched. This awareness needs to include knowledge of where employment opportunities are, and to what extent their training will equip them for these opportunities. Prospective graduates would be well advised to become aware of the new opportunities in business and the private sector, as well as the flat or reduced opportunities in 'traditional' psychology employment markets. This should guide students in the selection of courses during the latter years of their degrees.

This process may be difficult for an 18 or 19 year old who has recently made the transition from secondary school and has little knowledge or experience of the labour market. There may be a role for secondary school careers advisors or teachers in educating students as to the changing nature of employment

opportunities within psychology.

Graduates also need to have an understanding of the value of their respective degrees, be they three year, four year or post-graduate. This valuation should direct them to seek for employment at an appropriate level to their education. Hopefully this will lead graduates to avoid the disillusionment that many of the current sample experienced on being rebuffed in a market for which they are not suitably equipped. Students may need to demand more accountability from their educators, so that they are clear as to what their degrees will and will not do for them when they graduate.

Lastly, since psychology is not bound by any single theoretical paradigm, students may need to decide whilst at university on a framework in which they will choose to operate and formulate their thinking. Much of the undergraduate psychology degree is spent in the academic presentation of these paradigms, so students are not limited in their choices. The formulation of a framework of reference is largely up to the individual, assisted by their educators, and should be largely in place by the time that the student graduates. New graduates should not need to grope for a theory on which that can hang their beliefs once they have entered the workforce. Perhaps more onus needs to be placed on students and educators in ensuring that this takes place, than was previously the case.

8.4 Further research

The current study has attempted to comprehensively report the career and employment trends for psychology graduates. It is, however, a first attempt. Follow-up studies, employing a common methodology, need to be conducted so as to more adequately measure real changes in the psychology labour market over time. At several points in the current study it was not possible to report with any degree of certainty on a particular matter, due to incomplete or insufficient data. To clarify these matters, further research is needed. The results themselves also suggest areas for further research.

More information is needed on the specific tasks carried out by graduates within their jobs, and which of these have psychological content. In this study, no attempt was made to ascertain the nature of these tasks. Thus, although graduates leave university having received training in psychology, it is uncertain as to what percentage actually utilise their psychological skills. The classification into ASCO categories may in fact hinder ascertaining this information. For example, it is

possible that occupations classified to the managers and administrators major group may have significant psychological content. ASCO 1201 (General managers) is so broad a title as to give little, if any, indication of the tasks or functions carried out within the position. Another example is ASCO 1309 (Personnel and industrial relation managers). Persons in this position may carry out a number of psychological tasks, such as testing, interviewing and counselling. Apart from those persons actually classified to ASCO 2903 (Psychologists), it is difficult to comment with certainty as to whether the positions involve any psychological content. Some position titles such as ASCOs 2601 (Social workers), 2603 (Counsellors), 2705 (Personnel specialists) and 3901 (Welfare para-professionals) suggest such content. Further research, asking for details of the actual tasks performed in a job, is needed. This may well involve interviewing respondents in order to determine more exactly the tasks performed within their jobs.

We have seen that changes in the labour market have meant that psychology graduates have found new, non-traditional areas of employment. What is not known is how graduates have managed to transfer their psychology skills to these new areas. Occupations within the business industry, for example, involve a whole new and different set of skills in comparison to those skills that are used in more traditional areas such as clinical psychology, or counselling. Skills in marketing, advertising, the media, group processes and business techniques may be touched upon in an undergraduate psychology degree, but are not developed to any level of detail. Many of these skills may have a psychological underpinning, but may need to be crafted on-the-job. The present study found that only some 8.0 per cent of psychology graduates undertook majors in business, but that 14.8 per cent of graduates worked in the finance, property and business industry. The process whereby the basic psychology taught at university is developed into specific job skills is largely unknown. The fact that many pass graduates believed their undergraduate degree to be largely irrelevant in the workplace suggests that the knowledge and skills they attained at university were largely non-transferrable to the jobs in which they were working. For those psychology graduates not planning to work as psychologists, more training may be needed so as to be able to 'contextualise' their skills in the workforce.

The current study attempted to develop a model of career path development. As an outcome measure, the model used the ANU3 scale of occupational prestige. This was not found to be wholly satisfactory, as the R^2 value of 0.19 for the model

attests to. It was suggested that a better outcome measure may have been the salary of the respondent, which better correlates with age, level of experience, tertiary qualifications and seniority. It was felt when initially designing the survey that any questions asking for respondents' salaries may be seen as infringing upon confidentiality, and thus could have compromised what may already have been a low response rate. With hindsight, this was probably overcautious. Any future study should make an attempt to elicit salary information. Salary is possibly the best quantifiable gauge of career path progress.

Finally, better information is needed as to the supply and demand of psychology graduates. In the past, the Australian Bureau of Statistics routinely published psychology graduate completions data (see Appendix 5, Table 2). This is no longer the case. The Commonwealth Department of Employment, Education and Training currently collects tertiary statistics for the numbers of graduates commencing and completing psychology degrees (see Appendix 5, Table 1). The data are unpublished, however. A co-ordinating body, such as the Australian Psychological Society, needs to report these data as a matter of course. This will allow labour force planners to gain some indication of the supply of graduates. The demand for graduates is another matter. Considering their data holdings and past experience in the field, perhaps the best body to advise on this is the Graduate Careers Council of Australia. Certainly more timely research is needed on where graduates are required, and where opportunities are greatest. A business and industry monitoring tool, such as the routine examination of job advertisements might fulfil this requirement. Such information, if routinely and regularly published might then better guide prospective students and impending graduates as to current career path opportunities.

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Appendix 1

Survey questionnaire

The Australian National University

Institution No.

Dear Graduate

To answer the questions please place a tick inside the appropriate numbered box or write your response in the space or boxes provided.

THANK YOU VERY MUCH FOR YOUR TIME AND COOPERATION.

1. ABOUT YOU

(a) Sex Male ☐ 1
Female ☐ 2

(b) Age at 30 April 1991 Years

(c) Place of permanent residence State _____
Postcode

2. YOUR QUALIFICATIONS

(a) What was your first Psychology qualification? (eg. B.A., B.Sc. etc) (please specify)

(b) What was the level of this degree?

Pass (Major)

☐ 1

Pass (4th year)

☐ 2

Honours (4th year)

☐ 3

(c) At what institution was this degree obtained? (please specify)

(d) What year did you graduate?

198 ☐

(e) How many years of study did your first Psychology qualification take?

☐ Years

(f) What was the main reason you first decided to study Psychology? (please tick one only)

Wanted to help others

☐ 01

Family connection with psychology

☐ 07

Interest in psychology as a career

☐ 02

Needed secure income

☐ 08

To find out more about myself

☐ 03

Enjoy working with people

☐ 09

To increase my knowledge and skills

☐ 04

Unplanned occurrence

☐ 10

Wanted a secure career

☐ 05

Other (please specify) _____

11

Influenced by someone else

☐ 06

(g) Did you major only in Psychology or in other subjects as well?

Only in Psychology

☐ 1

OR Others

☐ 2

(please specify) _____

(h) Since completing your original Psychology degree, have you undertaken any further studies either in Psychology or other areas?

No

☐ 1

(Go to Question 3)

Yes

☐ 2

(please outline the details in the table below)

Course Name	Level of Course	Institution	Full or Part-Time	Dates from/to (or expected completion)	Major Subjects
(eg) M.Psych.	Pass	Uni of NSW	F/T	1.83-12.85	Psychology

(i) What was the main reason for undertaking further studies? (please specify)

5. AND FINALLY...

- (a) Are you a member of the Australian Psychological Society?

No ☐ 1Yes ☐Associate Member ☐ 2Member ☐ 3Fellow ☐ 4

- (b) Are you registered with any State Psychology Boards?

No ☐ 1Yes ☐ 2

Which State? _____

- (c) How would you rate the relevance of your undergraduate degree to your career?

☐ Irrelevant
 ☐ Not very relevant
 ☐ Undecided
 ☐ Relevant
 ☐ Extremely relevant

- (d) If you have completed a further degree in psychology, how would you rate the relevance of that degree to your career?

☐ Irrelevant
 ☐ Not very relevant
 ☐ Undecided
 ☐ Relevant
 ☐ Extremely relevant

- (e) How satisfied in general are you with your present position?

☐ Very dissatisfied
 ☐ Dissatisfied
 ☐ Undecided
 ☐ Satisfied
 ☐ Very satisfied

- (f) If dissatisfied in any way, would you prefer to be working in some other field which would utilise your psychology qualifications.

No ☐ 1Yes ☐ 2 (please specify) _____

- (g) Would you like to add any comments regarding your psychology training or your employment?

No ☐ 1Yes ☐ 2 _____

Appendix 2

Australian Standard Classification of Occupations (ASCO)

Major, minor and unit groups

1 MANAGERS AND ADMINISTRATORS**11 LEGISLATORS AND GOVERNMENT APPOINTED OFFICIALS**

1101 PARLIAMENTARIANS, COUNSELLORS AND GOVERNMENT REPRESENTATIVES
1103 JUDGES, MAGISTRATES AND MEDIATORS

12 GENERAL MANAGERS

1201 GENERAL MANAGERS

13 SPECIALIST MANAGERS

1301 FINANCE MANAGERS
1303 SALES AND MARKETING MANAGERS
1305 PRODUCTION MANAGERS
1307 SUPPLY AND DISTRIBUTION MANAGERS
1309 PERSONNEL AND INDUSTRIAL RELATIONS MANAGERS
1311 DATA PROCESSING MANAGERS
1313 PUBLIC POLICY MANAGERS
1315 DIRECTORS OF NURSING
1317 EDUCATION MANAGERS
1319 COMMISSIONED MANAGERS (MANAGEMENT)
1399 OTHER SPECIALIST MANAGERS

14 FARMERS AND FARM MANAGERS

1401 FARMERS AND FARM MANAGERS

15 MANAGING SUPERVISORS (SALES AND SERVICE)

1501 SHOP MANAGERS
1503 RESTAURANT AND CATERING MANAGING SUPERVISORS
1505 ACCOMMODATION AND TAVERN MANAGING SUPERVISORS
1507 FINANCIAL INSTITUTION BRANCH MANAGERS
1599 OTHER MANAGING SUPERVISORS (SALES AND SERVICE)

16 MANAGING SUPERVISORS (OTHER BUSINESS)

1601 MANAGING SUPERVISORS (OTHER BUSINESS)

2 PROFESSIONALS**21 NATURAL SCIENTISTS**

2101 CHEMISTS
2103 GEOLOGISTS AND GEOPHYSICISTS
2105 PHYSICISTS
2107 LIFE SCIENTISTS
2109 MEDICAL TESTING PROFESSIONALS
2199 OTHER NATURAL SCIENTISTS

22 BUILDING PROFESSIONALS AND ENGINEERS

2201 ARCHITECTS AND LANDSCAPE ARCHITECTS
2203 QUANTITY SURVEYORS
2205 CARTOGRAPHERS AND SURVEYORS
2207 CHEMICAL ENGINEERS
2209 CIVIL ENGINEERS
2211 ELECTRICAL AND ELECTRONICS ENGINEERS
2213 MECHANICAL ENGINEERS
2215 MINING ENGINEERS
2217 METALLURGISTS AND MATERIALS SCIENTISTS
2219 OTHER ENGINEERS

23 HEALTH DIAGNOSIS AND TREATMENT PRACTITIONERS

2301 GENERAL MEDICAL PRACTITIONERS
2303 SPECIALIST MEDICAL PRACTITIONERS
2305 DENTAL PRACTITIONERS
2307 PHARMACISTS
2309 OCCUPATIONAL THERAPISTS
2311 OPTOMETRISTS
2313 PHYSIOTHERAPISTS
2315 SPEECH PATHOLOGISTS

2317 CHIROPRACTORS AND OSTEOPATHS
2319 PODIATRISTS
2321 RADIOGRAPHERS
2323 VETERINARIANS
2399 OTHER HEALTH DIAGNOSIS AND TREATMENT PRACTITIONERS

24 SCHOOL TEACHERS

2401 PRE-PRIMARY SCHOOL TEACHERS
2403 PRIMARY SCHOOL TEACHERS
2405 SECONDARY SCHOOL TEACHERS
2407 SPECIAL EDUCATION TEACHERS

25 OTHER TEACHERS AND INSTRUCTORS

2501 UNIVERSITY AND CAE TEACHERS
2503 TAFE TEACHERS
2505 EXTRA-SYSTEMIC TEACHERS AND INSTRUCTORS

26 SOCIAL PROFESSIONALS

2601 SOCIAL WORKERS
2603 COUNSELLORS
2605 LAWYERS
2607 MINISTERS OF RELIGION

27 BUSINESS PROFESSIONALS

2701 ACCOUNTANTS
2703 PUBLIC RELATIONS OFFICERS
2705 PERSONNEL SPECIALISTS
2707 COMPUTING PROFESSIONALS
2799 OTHER BUSINESS PROFESSIONALS

28 ARTISTS AND RELATED PROFESSIONALS

2801 PAINTERS, SCULPTORS AND RELATED PROFESSIONALS
2803 PHOTOGRAPHERS
2805 DESIGNERS AND ILLUSTRATORS
2807 JOURNALISTS
2809 AUTHORS AND RELATED PROFESSIONALS
2811 FILM, TELEVISION AND STAGE DIRECTORS
2813 DANCERS AND CHOREOGRAPHERS
2815 MUSICIANS, COMPOSERS AND RELATED PROFESSIONALS
2817 ACTORS AND RELATED PROFESSIONALS
2819 ANNOUNCERS

29 MISCELLANEOUS PROFESSIONALS

2901 ECONOMISTS
2903 PSYCHOLOGISTS
2905 EDUCATION RESEARCHERS AND RELATED PROFESSIONALS
2907 OTHER SOCIAL SCIENTISTS
2909 MATHEMATICIANS, STATISTICIANS AND ACTUARIES
2911 LIBRARIANS
2999 OTHER PROFESSIONALS

3 PARA-PROFESSIONALS**31 MEDICAL AND SCIENCE TECHNICAL OFFICERS AND TECHNICIANS**

3101 MEDICAL TECHNICAL OFFICERS AND TECHNICIANS
3103 SCIENCE TECHNICAL OFFICERS AND TECHNICIANS

32 ENGINEERS AND BUILDING ASSOCIATES AND TECHNICIANS

3201 ELECTRICAL AND ELECTRONIC ENGINEERING ASSOCIATES AND TECHNICIANS
3203 CIVIL ENGINEERING ASSOCIATES AND TECHNICIANS
3205 MECHANICAL ENGINEERING ASSOCIATES AND TECHNICIANS
3207 BUILDING, ARCHITECTURAL AND SURVEYING ASSOCIATES AND TECHNICIANS
3299 OTHER ENGINEERING AND BUILDING ASSOCIATES AND TECHNICIANS

33 AIR AND SEA TRANSPORT TECHNICAL WORKERS

3301 AIRCRAFT PILOTS
 3303 AIR TRANSPORT OPERATING SUPPORT WORKERS
 3305 SHIP'S PILOTS AND DECK OFFICERS
 3307 MARINE ENGINEERS AND SURVEYORS

34 REGISTERED NURSES

3401 REGISTERED NURSES

35 POLICE

3501 POLICE

39 MISCELLANEOUS PARA-PROFESSIONALS

3901 WELFARE PARA-PROFESSIONALS
 3903 PERFORMING ARTS SUPPORT WORKERS
 3905 INSPECTORS AND REGULATORY OFFICERS
 3907 CHILD CARE CO-ORDINATORS
 3909 AMBULANCE OFFICERS
 3911 PRISON OFFICERS
 3913 PROCUREMENT OFFICERS
 3915 SPORTSPERSONS AND RELATED WORKERS
 3999 OTHER PARA-PROFESSIONALS

4 TRADESPERSONS

41 METAL FITTING AND MACHINING TRADESPERSONS

4101 TOOLMAKERS
 4103 METAL FITTERS AND MACHINISTS

42 OTHER METAL TRADESPERSONS

4201 FORGING TRADESPERSONS
 4203 SHEETMETAL TRADESPERSONS
 4205 STRUCTURAL STEEL, BOLLERMAKING AND WELDING TRADESPERSONS
 4207 METAL CASTING TRADESPERSONS
 4209 METAL FINISHING TRADESPERSONS
 4211 AIRCRAFT MAINTENANCE ENGINEERS
 4213 PRECISION METAL TRADESPERSONS

43 ELECTRICAL AND ELECTRONICS TRADESPERSONS

4301 ELECTRICAL POWERLINE TRADESPERSONS
 4303 ELECTRICAL FITTERS
 4305 AUTOMOTIVE ELECTRICIANS
 4307 REFRIGERATION AND AIR-CONDITIONING MECHANICS
 4309 ELECTRICAL MECHANICS
 4311 COMMUNICATIONS EQUIPMENT TRADESPERSONS
 4313 RADIO AND TELEVISION SERVICERS
 4315 OFFICE EQUIPMENT AND COMPUTER SERVICERS
 4399 OTHER ELECTRICAL AND ELECTRONICS TRADESPERSONS

44 BUILDING TRADESPERSONS

4401 CARPENTERS AND JOINERS
 4403 BRICKLAYERS
 4405 PAINTERS, DECORATORS AND SIGNWRITERS
 4407 PLASTERERS
 4409 PLUMBERS
 4411 ROOF SLATERS AND TILERS
 4413 WALL AND FLOOR TILERS

45 PRINTING TRADESPERSONS

4501 COMPOSITORS
 4503 GRAPHIC REPRODUCTION TRADESPERSONS
 4505 PRINTING MACHINISTS
 4507 BINDERS AND FINISHERS
 4509 STEREOTYPERS AND ELECTROTYPERS
 4511 SCREEN PRINTERS

46 VEHICLE TRADESPERSONS

4601 VEHICLE MECHANICS
 4603 PANEL BEATERS
 4605 VEHICLE PAINTERS
 4607 VEHICLE BODY MAKERS

4609 VEHICLE TRIMMERS

47 FOOD TRADESPERSONS

4701 MEAT TRADESPERSONS
 4703 BAKERS AND PASTRYCOOKS
 4705 COOKS
 4799 OTHER FOOD TRADESPERSONS

48 AMENITY HORTICULTURE TRADESPERSONS

4801 NURSERYMEN /WOMEN
 4803 GREENKEEPERS
 4805 GARDENERS

49 MISCELLANEOUS TRADESPERSONS

4901 WOOD MACHINISTS AND TURNERS
 4903 CABINETMAKERS
 4905 OTHER WOOD TRADESPERSONS
 4907 MARINE CONSTRUCTION TRADESPERSONS
 4909 BLASTING TRADESPERSONS
 4911 GARMENT TRADESPERSONS
 4913 UPHOLSTERERS AND BEDDING TRADESPERSONS
 4915 SHOEMAKING AND REPAIRING TRADESPERSONS
 4917 OTHER LEATHER AND CANVAS TRADESPERSONS
 4919 FLOOR COVERERS
 4921 GLASS TRADESPERSONS
 4923 JEWELLERY AND PRECIOUS METALWARE TRADESPERSONS
 4925 CRAFTWORKERS
 4927 HAIRDRESSERS
 4929 SHEEP SHEARERS
 4931 ANIMAL TRAINERS
 4999 OTHER TRADESPERSONS

5 CLERKS

5 STENOGRAPHERS AND TYPISTS

5101 OFFICE SECRETARIES AND STENOGRAPHERS
 5103 TYPISTS AND TYPIST-CLERKS
 5105 WORD PROCESSING OPERATORS

52 DATA PROCESSING AND BUSINESS MACHINE OPERATORS

5201 DATA PROCESSING MACHINE OPERATORS
 5203 BUSINESS MACHINE OPERATORS

53 NUMERICAL CLERKS

5301 ACCOUNTING CLERKS
 5303 INSURANCE AND BROKING CLERKS
 5305 STATISTICAL AND ACTUARIAL CLERKS

54 FILING, SORTING AND COPYING CLERKS

5401 LIBRARY AND FILING CLERKS
 5403 MAIL SORTERS
 5499 OTHER FILING, SORTING AND COPYING CLERKS

55 MATERIAL RECORDING AND DESPATCHING CLERKS

5501 PRODUCTION RECORDING CLERKS
 5503 TRANSPORT RECORDING AND DESPATCHING CLERKS
 5505 STOCK AND PURCHASING CLERKS

56 RECEPTIONISTS, TELEPHONISTS AND MESSENGERS

5601 RECEPTIONISTS AND INFORMATION CLERKS
 5603 TELEPHONISTS
 5605 MESSENGERS AND DELIVERY OFFICERS

59 MISCELLANEOUS CLERKS

5901 COLLECTION CLERKS
 5903 TEACHERS' AIDES
 5905 PERSONNEL CLERKS
 5907 LEGAL AND RELATED CLERKS
 5909 POSTAL CLERKS AND OFFICERS
 5999 OTHER CLERKS

6 SALESPERSONS AND PERSONAL SERVICE WORKERS

61 INVESTMENT, INSURANCE AND REAL ESTATE SALESPERSONS

6101 SECURITIES AND FINANCE DEALERS
6103 INSURANCE BROKERS AND AGENTS
6105 REAL ESTATE SALESPERSONS AND PROPERTY MANAGERS
6199 OTHER INVESTMENT, INSURANCE AND REAL ESTATE SALESPERSONS

62 SALES REPRESENTATIVES

6201 SALES REPRESENTATIVES

63 SALES ASSISTANTS

6301 SALES ASSISTANTS

64 TELLERS, CASHIERS AND TICKET SALESPERSONS

6401 TELLERS
6403 CASHIERS
6405 TICKET SALESPERSONS

65 MISCELLANEOUS SALESPERSONS

6501 STREET VENDORS, CANVASSERS AND SALES DRIVERS
6503 BAR ATTENDANTS
6505 WAITERS AND WAITRESSES
6507 TRAVEL AGENTS
6599 OTHER SALESPERSONS

66 PERSONAL SERVICE WORKERS

6601 CHILD CARE, REFUGE AND RELATED WORKERS
6603 ENROLLED NURSES
6605 DENTAL NURSES
6607 HOME COMPANIONS AND AIDES
6609 TRAVEL STEWARDS
6699 OTHER PERSONAL SERVICE WORKERS

7 PLANT AND MACHINE OPERATORS, AND DRIVERS

71 ROAD AND RAIL TRANSPORT DRIVERS

7101 BUS AND TRAM DRIVERS
7103 AUTOMOBILE DRIVERS
7105 TRUCK DRIVERS
7107 LOCOMOTIVE DRIVERS

72 MOBILE PLANT OPERATORS (EXCEPT TRANSPORT)

7201 EXCAVATING AND EARTHMOVING PLANT OPERATORS
7203 FORKLIFT AND RELATED DRIVERS
7205 LOGGING PLANT OPERATORS
7207 PAVING AND SURFACING PLANT OPERATORS
7209 AGRICULTURAL PLANT OPERATORS
7211 FIRE FIGHTERS
7299 OTHER MOBILE PLANT OPERATORS (EXCEPT TRANSPORT)

73 STATIONARY PLANT OPERATORS

7301 POWER GENERATION PLANT OPERATORS
7303 ENGINE AND BOLLER OPERATORS (EXCEPT POWER GENERATION)
7305 CHEMICAL PLANT OPERATORS
7307 PETROLEUM AND GAS PLANT OPERATORS
7309 BULK MATERIALS HANDLING PLANT OPERATORS
7311 CRANE OPERATORS
7313 HOLST, WINCH AND LIFT OPERATORS
7315 FURNACE AND KILN OPERATORS
7317 DRILLING PLANT OPERATORS
7399 OTHER STATIONARY PLANT OPERATORS

74 MACHINE OPERATORS

7401 BASIC METAL PRODUCTS MACHINE OPERATORS
7403 METAL PRESS OPERATORS

7405 OTHER METAL PRODUCTS MACHINE OPERATORS
7407 PLASTICS PRODUCTION MACHINE OPERATORS
7409 RUBBER PRODUCTION MACHINE OPERATORS
7411 CHEMICAL PRODUCTION MACHINE OPERATORS
7413 WOOD PROCESSING MACHINE OPERATORS
7415 PAPER AND PAPER PRODUCTS MACHINE OPERATORS
7417 GLASS PRODUCTION MACHINE OPERATORS
7419 CLAY AND STONE PROCESSING MACHINE OPERATORS
7421 YARN PRODUCTION MACHINE OPERATORS
7423 HIDE AND SKIN PROCESSING MACHINE OPERATORS
7425 FABRIC PRODUCTION MACHINE OPERATORS
7427 TEXTILE SEWING MACHINISTS
7429 SHOEMAKING MACHINE OPERATORS
7431 FOOD PROCESSING MACHINE OPERATORS
7433 PACKAGING MACHINE OPERATORS
7435 PHOTOGRAPHIC PRODUCTS MACHINE OPERATORS
7499 OTHER MACHINE OPERATORS

8 LABOURERS AND RELATED WORKERS

81 TRADES ASSISTANTS AND FACTORY HANDS

8101 TRADES ASSISTANTS
8103 ASSEMBLERS
8105 HAND PACKERS
8107 INDUSTRIAL SPRAY PAINTERS
8109 QUALITY CONTROLLERS
8199 OTHER TRADES ASSISTANTS AND FACTORY HANDS

82 AGRICULTURAL LABOURERS AND RELATED WORKERS

8201 FARM HANDS AND ASSISTANTS
8203 FORESTRY LABOURERS
8205 NURSERY AND GARDEN LABOURERS
8207 OTHER AGRICULTURAL LABOURERS AND RELATED WORKERS

83 CLEANERS

8301 CLEANERS

84 CONSTRUCTION AND MINING LABOURERS

8401 INSTALLATION WORKERS
8403 CONCRETE WORKERS
8405 STRUCTURAL STEEL AND RELATED CONSTRUCTION LABOURERS
8407 EARTHMOVING LABOURERS
8409 PAVING AND SURFACING LABOURERS
8411 SURVEY HANDS
8413 RAILWAY LABOURERS
8415 MINING AND MINERAL ORE TREATING LABOURERS
8499 OTHER CONSTRUCTION AND MINING LABOURERS

89 MISCELLANEOUS LABOURERS AND RELATED WORKERS

8901 USHERS AND DOOR ATTENDANTS
8903 LUGGAGE PORTERS
8905 GARBAGE COLLECTORS
8907 STOREMEN /WOMEN
8909 FREIGHT AND FURNITURE HANDLERS
8911 GUARDS AND SECURITY OFFICERS
8913 CARETAKERS
8915 HOUSEKEEPERS
8917 LAUNDRY WORKERS
8919 KITCHENHANDS
8921 WARD HELPERS
8923 VEHICLE ACCESSORIES FITTERS
8925 FISHERMEN/WOMEN, DECKHANDS AND SEAMEN / WOMEN
8999 OTHER LABOURERS AND RELATED WORKERS

Appendix 3

Australian Standard Industrial Classification (ASIC)

Division, subdivision, group and class titles

A AGRICULTURE, FORESTRY, FISHING AND HUNTING

01 AGRICULTURE

- 012 POULTRY
 - 0124 POULTRY FOR MEAT
 - 0125 POULTRY FOR EGGS
- 013 FRUIT
 - 0134 GRAPES
 - 0135 PLANTATION FRUIT
 - 0136 ORCHARD AND OTHER FRUIT
- 014 VEGETABLES
 - 0143 POTATOES
 - 0144 VEGETABLES (EXCEPT POTATOES)
- 018 CEREAL GRAINS, SHEEP, CATTLE AND PIGS
 - 0181 CEREAL GRAINS (INCL. OILSEEDS N.E.C.)
 - 0182 SHEEP - CEREAL GRAINS
 - 0183 MEAT CATTLE - CEREAL GRAINS
 - 0184 SHEEP - MEAT CATTLE
 - 0185 SHEEP
 - 0186 MEAT CATTLE
 - 0187 MILK CATTLE
 - 0188 PIGS
- 019 OTHER AGRICULTURE
 - 0191 SUGAR CANE
 - 0192 PEANUTS
 - 0193 TOBACCO
 - 0194 COTTON
 - 0195 NURSERIES
 - 0196 AGRICULTURE N.E.C.

02 SERVICES TO AGRICULTURE

- 020 SERVICES TO AGRICULTURE
 - 0204 SHEEP SHEARING SERVICES
 - 0205 AERIAL AGRICULTURAL SERVICES
 - 0206 SERVICES TO AGRICULTURE N.E.C.

03 FORESTRY AND LOGGING

- 030 FORESTRY AND LOGGING
 - 0303 LOGGING
 - 0304 FORESTRY AND SERVICES TO FORESTRY

04 FISHING AND HUNTING

- 043 FISHING
 - 0431 ROCK LOBSTERS
 - 0432 PRAWNS
 - 0433 OCEAN AND COASTAL FISHING N.E.C.
 - 0434 OYSTER FARMING AND INLAND FISHING
- 044 HUNTING AND TRAPPING
 - 0440 HUNTING AND TRAPPING

B MINING

11 METALLIC MINERALS

- 111 FERROUS METAL ORES
 - 1111 IRON ORES
 - 1112 IRON ORE PELLETISING
- 112 NON-FERROUS METAL ORES
 - 1121 BAUXITE
 - 1122 COPPER ORES
 - 1123 GOLD ORES
 - 1124 MINERAL SANDS
 - 1125 NICKEL ORES
 - 1126 SILVER-LEAD-ZINC ORES
 - 1127 TIN ORES
 - 1128 URANIUM ORES
 - 1129 NON-FERROUS METAL ORES N.E.C.

12 COAL

- 120 COAL
 - 1201 BLACK COAL
 - 1202 BROWN COAL

13 OIL AND GAS

- 130 OIL AND GAS

1300 OIL AND GAS

14 CONSTRUCTION MATERIALS

- 140 CONSTRUCTION MATERIALS
 - 1401 SAND AND GRAVEL
 - 1404 CONSTRUCTION MATERIALS N.E.C.

15 OTHER NON-METALLIC MINERALS

- 150 OTHER NON-METALLIC MINERALS
 - 1501 LIMESTONE
 - 1502 CLAYS
 - 1504 SALT
 - 1505 NON-METALLIC MINERALS N.E.C.

16 SERVICES TO MINING N.E.C.

- 161 MINERAL EXPLORATION (OWN ACCOUNT)
 - 1611 PETROLEUM EXPLORATION (OWN ACCOUNT)
 - 1612 MINERAL EXPLORATION N.E.C. (OWN ACCOUNT)
- 162 MINING AND EXPLORATION SERVICES N.E.C.
 - 1620 MINING AND EXPLORATION SERVICES N.E.C.

C MANUFACTURING

21 FOOD, BEVERAGES AND TOBACCO

- 211 MEAT PRODUCTS
 - 2115 MEAT (EXCEPT SMALLGOODS OR POULTRY)
 - 2116 POULTRY
 - 2117 BACON, HAM AND SMALLGOODS N.E.C.
- 212 MILK PRODUCTS
 - 2121 LIQUID MILK AND CREAM
 - 2122 BUTTER
 - 2123 CHEESE
 - 2124 ICE CREAM AND FROZEN CONFECTIONS
 - 2125 MILK PRODUCTS N.E.C.
- 213 FRUIT AND VEGETABLE PRODUCTS
 - 2131 FRUIT PRODUCTS
 - 2132 VEGETABLE PRODUCTS
- 214 MARGARINE AND OILS AND FATS N.E.C.
 - 2140 MARGARINE AND OILS AND FATS N.E.C.
- 215 FLOUR MILL AND CEREAL FOOD PRODUCTS
 - 2151 FLOUR MILL PRODUCTS
 - 2152 STARCH, GLUTEN AND STARCH SUGARS
 - 2153 CEREAL FOODS AND BAKING MIXES
- 216 BREAD, CAKES AND BISCUITS
 - 2161 BREAD
 - 2162 CAKES AND PASTRIES
 - 2163 BISCUITS
- 217 OTHER FOOD PRODUCTS
 - 2171 RAW SUGAR
 - 2173 CONFECTIONERY AND COCOA PRODUCTS
 - 2174 PROCESSED SEAFOODS
 - 2175 PREPARED ANIMAL AND BIRD FOODS
 - 2176 FOOD PRODUCTS N.E.C.
- 218 BEVERAGES AND MALT
 - 2185 SOFT DRINKS, CORDIALS AND SYRUPS
 - 2186 BEER
 - 2187 MALT
 - 2188 WINE AND BRANDY
 - 2189 ALCOHOLIC BEVERAGES N.E.C.
- 219 TOBACCO PRODUCTS
 - 2190 TOBACCO PRODUCTS

23 TEXTILES

- 234 TEXTILE FIBRES, YARNS AND WOVEN FABRICS
 - 2341 COTTON GINNING
 - 2342 WOOL SCOURING AND TOP MAKING
 - 2343 MAN-MADE FIBRES AND YARNS
 - 2344 MAN-MADE FIBRE BROADWOVEN FABRICS
 - 2345 COTTON YARNS AND BROADWOVEN FABRICS
 - 2346 WORSTED YARNS AND BROADWOVEN FABRICS
 - 2347 WOOLLEN YARNS AND BROADWOVEN FABRICS
 - 2348 NARROW WOVEN AND ELASTIC TEXTILES
 - 2349 TEXTILE FINISHING
- 235 OTHER TEXTILE PRODUCTS

- 2351 HOUSEHOLD TEXTILES
- 2352 TEXTILE FLOOR COVERINGS
- 2353 FELT AND FELT PRODUCTS
- 2354 CANYAS AND ASSOCIATED PRODUCTS N.E.C.
- 2355 ROPE, CORDAGE AND TWINE
- 2356 TEXTILE PRODUCTS N.E.C.
- 24 CLOTHING AND FOOTWEAR**
- 244 KNITTING MILLS**
- 2441 HOSIERY
- 2442 CARDIGANS AND PULLOVERS
- 2443 KNITTED GOODS N.E.C.
- 245 CLOTHING**
- 2451 MENS TROUSERS AND SHORTS; WORK CLOTHING
- 2452 MENS SUITS AD COATS; WATERPROOF CLOTHING
- 2453 WOMENS OUTERWEAR N.E.C.
- 2454 FOUNDATION GARMENTS
- 2455 UNDERWEAR AND INFANTS CLOTHING N.E.C.
- 2456 HEADWEAR AND CLOTHING N.E.C.
- 246 FOOTWEAR**
- 2460 FOOTWEAR
- 25 WOOD, WOOD PRODUCTS AND FURNITURE**
- 253 WOOD AND WOOD PRODUCTS**
- 2531 LOG SAWMILLING
- 2532 RESAWN AND DRESSED TIMBER
- 2533 VENEERS AND MANUFACTURED BOARDS OF WOOD
- 2534 WOODEN DOORS
- 2535 WOODEN STRUCTURAL FITTINGS AND JOINERY N.E.C.
- 2536 WOODEN CONTAINERS
- 2537 HARDWOOD WOODCHIPS
- 2538 WOOD PRODUCTS N.E.C.
- 254 FURNITURE AND MATTRESSES**
- 2541 FURNITURE (EXCEPT SHEET METAL)
- 2542 MATTRESSES (EXCEPT RUBBER)
- 26 PAPER, PAPER PRODUCTS, PRINTING AND PUBLISHING**
- 263 PAPER AND PAPER PRODUCTS**
- 2631 PULP, PAPER AND PAPERBOARD
- 2632 PAPER BAGS (INCLUDING TEXTILE BAGS)
- 2633 SOLID FIBREBOARD CONTAINERS
- 2634 CORRUGATED FIBREBOARD CONTAINERS
- 2635 PAPER PRODUCTS N.E.C.
- 264 PRINTING AND ALLIED INDUSTRIES**
- 2641 PUBLISHING
- 2642 PRINTING AND PUBLISHING
- 2643 PAPER STATIONERY
- 2644 PRINTING AND BOOKBINDING
- 2645 PRINTING TRADE SERVICES N.E.C.
- 27 CHEMICAL, PETROLEUM AND COAL PRODUCTS**
- 275 BASIC CHEMICALS**
- 2751 CHEMICAL FERTILISERS
- 2752 INDUSTRIAL GASES
- 2753 SYNTHETIC RESINS AND RUBBER
- 2754 ORGANIC INDUSTRIAL CHEMICALS N.E.C.
- 2755 INORGANIC INDUSTRIAL CHEMICALS N.E.C.
- 276 OTHER CHEMICAL PRODUCTS**
- 2761 AMMUNITION, EXPLOSIVES AND FIREWORKS
- 2762 PAINTS
- 2763 PHARMACEUTICAL AND VETERINARY PRODUCTS
- 2764 PESTICIDES
- 2765 SOAP AND OTHER DETERGENTS
- 2766 COSMETICS AND TOILET PREPARATIONS
- 2767 INKS
- 2768 CHEMICAL PRODUCTS N.E.C.
- 277 PETROLEUM REFINING**
- 2770 PETROLEUM REFINING
- 278 PETROLEUM AND COAL PRODUCTS N.E.C.**
- 2780 PETROLEUM AND COAL PRODUCTS N.E.C.
- 28 NON-METALLIC MINERAL PRODUCTS**
- 285 GLASS AND GLASS PRODUCTS**
- 2850 GLASS AND GLASS PRODUCTS
- 286 CLAY PRODUCTS AND REFRACTORIES**
- 2861 CLAY BRICKS
- 2862 REFRACTORIES
- 2863 CERAMIC TILES AND PIPES
- 2864 CERAMIC GOODS N.E.C.
- 287 CEMENT AND CONCRETE PRODUCTS**
- 2871 CEMENT
- 2872 READY MIXED CONCRETE
- 2873 CONCRETE PIPES AND BOX CULVERTS
- 2874 CONCRETE PRODUCTS N.E.C.
- 288 OTHER NON-METALLIC MINERAL PRODUCTS**
- 2881 PLASTER PRODUCTS AND EXPANDED MINERALS
- 2882 STONE PRODUCTS
- 2883 GLASS WOOL AND MINERAL WOOL PRODUCTS
- 2884 NON-METALLIC MINERAL PRODUCTS N.E.C.
- 29 BASIC METAL PRODUCTS**
- 294 BASIC IRON AND STEEL**
- 2941 IRON AND STEEL BASIC PRODUCTS
- 2942 IRON CASTING
- 2943 STEEL CASTING
- 2944 IRON AND STEEL FORGING
- 2945 STEEL PIPES AND TUBES
- 295 BASIC NON-FERROUS METALS**
- 2951 COPPER SMELTING, REFINING
- 2952 SILVER, LEAD, ZINC SMELTING, REFINING
- 2953 ALUMINA
- 2954 ALUMINIUM SMELTING
- 2955 NICKEL SMELTING, REFINING
- 2956 NON-FERROUS METALS N.E.C. SMELTING, REFINING
- 2957 SECONDARY RECOVERY AND ALLOYING OF NON-FERROUS METALS N.E.C.
- 296 NON-FERROUS METAL BASIC PRODUCTS**
- 2961 ALUMINIUM ROLLING, DRAWING, EXTRUDING
- 2962 NON-FERROUS METALS N.E.C. ROLLING, DRAWING, EXTRUDING
- 2963 NON-FERROUS METAL CASTING
- 31 FABRICATED METAL PRODUCTS**
- 314 STRUCTURAL METAL PRODUCTS**
- 3141 FABRICATED STRUCTURAL STEEL
- 3142 ARCHITECTURAL ALUMINIUM PRODUCTS
- 3143 ARCHITECTURAL METAL PRODUCTS N.E.C.
- 315 SHEET METAL PRODUCTS**
- 3151 METAL CONTAINERS
- 3152 SHEET METAL FURNITURE
- 3153 SHEET METAL PRODUCTS N.E.C.
- 316 OTHER FABRICATED METAL PRODUCTS**
- 3161 CUTLERY AND HAND TOOLS N.E.C.
- 3162 SPRINGS AND WIRE PRODUCTS
- 3163 NUTS, BOLTS, SCREWS AND RIVETS
- 3164 METAL COATING AND FINISHING
- 3165 NON-FERROUS STEAM, GAS AND WATER FITTINGS
- 3166 BOILER AND PLATE WORK
- 3167 METAL BLINDS AND AWNINGS
- 3168 FABRICATED METAL PRODUCTS N.E.C.
- 32 TRANSPORT EQUIPMENT**
- 323 MOTOR VEHICLES AND PARTS**
- 3231 MOTOR VEHICLES
- 3232 MOTOR VEHICLE BODIES, TRAILERS, CARAVANS
- 3233 MOTOR VEHICLE INSTRUMENTS AND ELECTRICAL EQUIPMENT N.E.C.
- 3234 MOTORVEHICLE PARTS N.E.C.
- 324 OTHER TRANSPORT EQUIPMENT**
- 3241 SHIPS
- 3242 BOATS
- 3243 RAILWAY ROLLING STOCK AND LOCOMOTIVES
- 3244 AIRCRAFT
- 3245 TRANSPORT EQUIPMENT N.E.C.
- 33 OTHER MACHINERY AND EQUIPMENT**
- 334 PHOTOGRAPHIC, PROFESSIONAL AND SCIENTIFIC**

- EQUIPMENT
- 3341 PHOTOGRAPHIC AND OPTICAL GOODS
- 3342 PHOTOGRAPHIC FILM PROCESSING
- 3343 MEASURING, PROFESSIONAL AND SCIENTIFIC EQUIPMENT N.E.C.
- 335 APPLIANCES AND ELECTRICAL EQUIPMENT
- 3351 RADIO AND TV RECEIVERS; AUDIO EQUIPMENT
- 3352 ELECTRONIC EQUIPMENT N.E.C.
- 3353 REFRIGERATORS AND HOUSEHOLD APPLIANCES
- 3354 WATER HEATING SYSTEMS
- 3355 ELECTRIC AND TELEPHONE CABLE AND WIRE
- 3356 BATTERIES
- 3357 ELECTRICAL MACHINERY AND EQUIPMENT N.E.C.
- 336 INDUSTRIAL MACHINERY AND EQUIPMENT
- 3361 AGRICULTURAL MACHINERY
- 3362 CONSTRUCTION MACHINERY
- 3363 MATERIALS HANDLING EQUIPMENT
- 3364 WOOD AND METAL WORKING MACHINERY
- 3365 PUMPS AND COMPRESSORS
- 3366 COMMERCIAL SPACE HEATING AND COOLING EQUIPMENT
- 3367 DIES, SAW BLADES AND MACHINE TOOL ACCESSORIES
- 3368 FOOD PROCESSING MACHINERY
- 3369 INDUSTRIAL MACHINERY AND EQUIPMENT N.E.C.
- 34 MISCELLANEOUS MANUFACTURING**
- 345 LEATHER AND LEATHER PRODUCTS
- 3451 LEATHER TANNING AND FUR DRESSING
- 3452 LEATHER AND LEATHER SUBSTITUTE GOODS N.E.C.
- 346 RUBBER PRODUCTS
- 3461 RUBBER TYRES, TUBES, BELTS, HOSE AND SHEETS
- 3462 RUBBER PRODUCTS N.E.C.
- 347 PLASTIC AND RELATED PRODUCTS
- 3471 FLEXIBLE PACKAGING AND ABRASIVE PAPERS
- 3472 RIGID PLASTIC SHEETING
- 3473 HARD SURFACE FLOOR COVERINGS N.E.C.
- 3474 PLASTIC PRODUCTS N.E.C.
- 348 OTHER MANUFACTURING
- 3481 OPHTHALMIC ARTICLES
- 3482 JEWELLERY AND SILVERWARE
- 3483 BROOM AND BRUSHES
- 3484 SIGNS AND ADVERTISING DISPLAYS
- 3485 SPORTING EQUIPMENT
- 3486 WRITING AND MARKING EQUIPMENT
- 3487 MANUFACTURING N.E.C.
- 36 ELECTRICITY AND GAS**
- 361 ELECTRICITY
- 3610 ELECTRICITY
- 362 GAS
- 3620 GAS
- 37 WATER, SEWERAGE AND DRAINAGE**
- 370 WATER, SEWERAGE AND DRAINAGE
- 3701 WATER SUPPLY
- 3702 SEWERAGE AND STORMWATER DRAINAGE

E CONSTRUCTION

41 GENERAL CONSTRUCTION

- 411 BUILDING CONSTRUCTION
- 4111 HOUSE CONSTRUCTION
- 4112 RESIDENTIAL BUILDING CONSTRUCTION N.E.C.
- 4113 NON-RESIDENTIAL BUILDING CONSTRUCTION
- 412 NON-BUILDING CONSTRUCTION
- 4121 ROAD AND BRIDGE CONSTRUCTION
- 4122 NON-BUILDING CONSTRUCTION N.E.C.

42 SPECIAL TRADE CONSTRUCTION

- 423 CONCRETING, BRICKLAYING AND TILING TRADES
- 4231 CONCRETING
- 4232 BRICKLAYING
- 4233 ROOF TILING
- 4234 FLOOR AND WALL TILING

- 424 OTHER SPECIAL TRADES
- 4241 STRUCTURAL STEEL ERECTION
- 4242 PLUMBING
- 4243 ELECTRICAL WORK
- 4244 HEATING AND AIR CONDITIONING
- 4245 PLASTERING AND PLASTER FIXING
- 4246 CARPENTRY
- 4247 PAINTING
- 4248 EARTHMOVING AND DREDGING
- 4249 SPECIAL TRADES N.E.C.

F WHOLESALE AND RETAIL TRADE

47 WHOLESALE TRADE

- 471 GENERAL WHOLESALERS
- 4710 GENERAL WHOLESALERS
- 472 BUILDERS HARDWARE DEALERS
- 4727 TIMBER MERCHANTS
- 4728 BUILDERS HARDWARE DEALERS N.E.C.
- 473 MACHINERY AND EQUIPMENT WHOLESALERS
- 4731 FARM AND CONSTRUCTION MACHINERY WHOLESALERS
- 4732 MOTOR VEHICLE PARTS WHOLESALERS
- 4733 PROFESSIONAL EQUIPMENT WHOLESALERS
- 4734 BUSINESS MACHINES WHOLESALERS
- 4735 ELECTRICAL AND ELECTRONIC EQUIPMENT WHOLESALERS N.E.C.
- 4736 MACHINERY AND EQUIPMENT WHOLESALERS N.E.C.
- 474 MINERALS, METALS AND CHEMICALS WHOLESALERS
- 4741 PETROLEUM PRODUCTS WHOLESALERS
- 4742 IRON AND STEEL MERCHANTS
- 4743 METAL SCRAP MERCHANTS
- 4744 MINERALS AND METALS WHOLESALERS N.E.C.
- 4745 CHEMICALS WHOLESALERS N.E.C.
- 475 FARM PROPERTIES AND PRODUCE DEALERS N.E.C.
- 4751 WOOL SELLING BROKERS; STOCK AND STATION AGENTS
- 4752 WOOL BUYERS AND MERCHANTS
- 4753 CEREAL GRAINS WHOLESALERS
- 4754 FARM PRODUCE WHOLESALERS N.E.C.
- 476 FOOD, DRINK AND TOBACCO WHOLESALERS
- 4761 MEAT WHOLESALERS
- 4762 SMALLGOODS AND DAIRY PRODUCTS WHOLESALERS
- 4763 FISH WHOLESALERS
- 4764 FRUIT AND VEGETABLE WHOLESALERS
- 4765 EGG WHOLESALERS
- 4766 CONFECTIONERY AND SOFT DRINK WHOLESALERS
- 4767 BEER, WINE AND SPIRITS WHOLESALERS
- 4768 TOBACCO PRODUCTS WHOLESALERS
- 4769 GROCERY WHOLESALERS N.E.C.
- 477 TEXTILE AND CLOTHING WHOLESALERS
- 4771 MENSWEAR WHOLESALERS
- 4772 WOMENS AND INFANTS WEAR WHOLESALERS
- 4773 FOOTWEAR WHOLESALERS
- 4774 TEXTILE PRODUCTS WHOLESALERS
- 478 HOUSEHOLD GOODS WHOLESALERS
- 4781 HOUSEHOLD APPLIANCE WHOLESALERS
- 4782 DOMESTIC HARDWARE WHOLESALERS
- 4783 FURNITURE WHOLESALERS
- 4784 FLOOR COVERINGS WHOLESALERS
- 479 OTHER SPECIALIST WHOLESALERS
- 4791 PHOTOGRAPHIC EQUIPMENT WHOLESALERS
- 4792 JEWELLERY AND WATCHES WHOLESALERS
- 4793 TOYS AND SPORTING GOODS WHOLESALERS
- 4794 BOOKS AND PAPER PRODUCTS WHOLESALERS
- 4795 PHARMACEUTICALS AND TOILETRIES WHOLESALERS
- 4796 WHOLESALERS N.E.C.

48 RETAIL TRADE

- 481 DEPARTMENT AND GENERAL STORES
- 4814 DEPARTMENT STORES
- 4815 GENERAL STORES
- 484 CLOTHING, FABRICS AND FURNITURE STORES

- 4843 MENS AND BOYS WEAR STORES
- 4844 WOMENS AND GIRLS WEAR STORES
- 4845 FOOTWEAR STORES
- 4846 SHOE REPAIRERS
- 4847 FABRICS AND HOUSEHOLD TEXTILE STORES
- 4848 FLOOR COVERINGS STORES
- 4849 FURNITURE STORES
- 485 HOUSEHOLD APPLIANCE AND HARDWARE STORES
- 4853 DOMESTIC HARDWARE STORES
- 4854 WATCHMAKERS AND JEWELLERS
- 4855 MUSIC STORES
- 4856 HOUSEHOLD APPLIANCE STORES
- 4857 ELECTRIC APPLIANCE REPAIRERS N.E.C.
- 486 MOTOR VEHICLE DEALERS; PETROL AND TYRE RETAILERS
- 4861 NEW MOTOR VEHICLE DEALERS
- 4862 USED MOTOR VEHICLE DEALERS
- 4864 SERVICE STATIONS
- 4865 SMASH REPAIRERS
- 4866 MOTOR CYCLE DEALERS
- 4867 BOAT AND CARAVAN DEALERS
- 4868 TYRE AND BATTERY RETAILERS
- 487 MILK AND BREAD VENDORS
- 4878 BREAD VENDORS
- 4879 MILK VENDORS
- 488 FOOD STORES
- 4881 GROCERS, CONFECTIONERS AND TOBACCONISTS
- 4882 BUTCHERS
- 4883 FRUIT AND VEGETABLE STORES
- 4884 LIQUOR STORES
- 4885 BREAD AND CAKE STORES
- 4886 FISH SHOPS; TAKE AWAY FOOD AND MILK BARS
- 489 OTHER RETAILERS
- 4891 PHARMACIES
- 4892 PHOTOGRAPHIC EQUIPMENT STORES
- 4893 SPORTS AND TOY STORES
- 4894 NEWSAGENTS, STATIONERS AND BOOKSELLERS
- 4895 SECOND HAND GOODS DEALERS
- 4896 NURSERYMEN AND FLORISTS
- 4897 RETAILING N.E.C.

G TRANSPORT AND STORAGE

51 ROAD TRANSPORT

- 511 ROAD FREIGHT TRANSPORT
- 5111 LONG DISTANCE INTERSTATE ROAD FREIGHT TRANSPORT
- 5112 LONG DISTANCE INTRASTATE ROAD FREIGHT TRANSPORT
- 5113 SHORT DISTANCE ROAD FREIGHT TRANSPORT
- 5114 ROAD FREIGHT FORWARDING
- 512 ROAD PASSENGER TRANSPORT
- 5121 LONG DISTANCE BUS TRANSPORT
- 5122 SHORT DISTANCE BUS TRANSPORT (INC. TRAMWAY)
- 5123 TAXI AND OTHER ROAD PASSENGER TRANSPORT

52 RAIL TRANSPORT

- 520 RAIL TRANSPORT
- 5200 RAIL TRANSPORT

53 WATER TRANSPORT

- 530 WATER TRANSPORT
- 5307 INTERNATIONAL SEA TRANSPORT
- 5308 COASTAL WATER TRANSPORT
- 5309 INLAND WATER TRANSPORT

54 AIR TRANSPORT

- 540 AIR TRANSPORT
- 5405 SCHEDULED INTERNATIONAL AIR TRANSPORT
- 5406 SCHEDULED DOMESTIC AIR TRANSPORT
- 5407 NON-SCHEDULED AIR TRANSPORT

55 OTHER TRANSPORT

- 550 OTHER TRANSPORT
- 5500 OTHER TRANSPORT

57 SERVICES TO TRANSPORT

- 571 SERVICES TO ROAD TRANSPORT
- 5711 MOTOR VEHICLE HIRE
- 5712 PARKING SERVICES
- 5713 SERVICES TO ROAD TRANSPORT N.E.C.
- 572 SERVICES TO WATER TRANSPORT
- 5721 STEVEDORING
- 5722 WATER TRANSPORT TERMINALS
- 5723 SHIPPING AGENTS
- 5724 SERVICES TO WATER TRANSPORT N.E.C.
- 573 SERVICES TO AIR TRANSPORT
- 5730 SERVICES TO AIR TRANSPORT
- 574 OTHER SERVICES TO TRANSPORT
- 5741 TRAVEL AGENCY SERVICES
- 5742 FREIGHT FORWARDING (EXCEPT ROAD)
- 5743 CUSTOMS AGENCY SERVICES
- 5744 OTHER SERVICES TO TRANSPORT N.E.C.

58 STORAGE

- 580 STORAGE
- 5801 GRAIN STORAGE
- 5802 COLD STORAGE
- 5803 STORAGE N.E.C.

H COMMUNICATION

59 COMMUNICATION

- 590 COMMUNICATION
- 5900 COMMUNICATION

I FINANCE, PROPERTY AND BUSINESS SERVICES

61 FINANCE AND INVESTMENT

- 614 BANKING
- 6141 CENTRAL BANK
- 6142 TRADING BANKS
- 6143 DEVELOPMENT BANKS
- 6144 SAVINGS BANKS
- 615 NON-BANK FINANCE
- 6151 PERMANENT BUILDING SOCIETIES
- 6152 TERMINATING BUILDING SOCIETIES
- 6153 CREDIT UNIONS
- 6154 AUTHORISED MONEY MARKET DEALERS
- 6155 MONEY MARKET DEALERS N.E.C.
- 6156 FINANCIERS N.E.C.
- 616 INVESTMENT
- 6161 UNIT TRUSTS, LAND TRUSTS AND MUTUAL FUNDS
- 6162 HOLDING COMPANIES N.E.C.
- 6163 HOLDER-INVESTORS N.E.C.
- 617 SERVICES TO FINANCE AND INVESTMENT
- 6171 STOCK EXCHANGES
- 6172 SERVICES TO FINANCE AND INVESTMENT N.E.C.

62 INSURANCE AND SERVICES TO INSURANCE

- 623 INSURANCE
- 6231 LIFE INSURANCE
- 6232 SUPERANNUATION FUNDS
- 6233 HEALTH INSURANCE
- 6234 GENERAL INSURANCE
- 624 SERVICES TO INSURANCE
- 6240 SERVICES TO INSURANCE

63 PROPERTY AND BUSINESS SERVICES

- 631 REAL ESTATE AGENTS
- 6310 REAL ESTATE AGENTS
- 632 REAL ESTATE OPERATORS AND DEVELOPERS
- 6321 RESIDENTIAL PROPERTY OPERATORS
- 6322 PROPERTY OPERATORS AND DEVELOPERS N.E.C.
- 633 TECHNICAL SERVICES
- 6334 ARCHITECTURAL SERVICES
- 6335 SURVEYING SERVICES
- 6336 TECHNICAL SERVICES N.E.C.

- 637 LEGAL AND ACCOUNTING SERVICES
 - 6371 LEGAL SERVICES
 - 6372 ACCOUNTING SERVICES
- 638 OTHER BUSINESS SERVICES
 - 6381 DATA PROCESSING SERVICES
 - 6382 ADVERTISING SERVICES
 - 6383 MARKET AND BUSINESS CONSULTANCY SERVICES
 - 6384 TYPING, COPYING AND MAILING SERVICES
 - 6385 COLLECTING AND CREDIT REPORTING SERVICES
 - 6386 PEST CONTROL SERVICES
 - 6387 CLEANING SERVICES
 - 6388 CONTRACT PACKING SERVICES N.E.C.
 - 6389 BUSINESS SERVICES N.E.C.
- 639 PLANT HIRE AND LEASING N.E.C.
 - 6390 PLANT HIRE AND LEASING N.E.C.

J PUBLIC ADMINISTRATION AND DEFENCE

71 PUBLIC ADMINISTRATION

- 711 GOVERNMENT ADMINISTRATION
 - 7111 FEDERAL GOVERNMENT ADMINISTRATION
 - 7112 STATE GOVERNMENT ADMINISTRATION
 - 7113 LOCAL GOVERNMENT ADMINISTRATION
- 712 JUSTICE
 - 7120 JUSTICE
- 713 FOREIGN GOVERNMENT REPRESENTATION
 - 7130 FOREIGN GOVERNMENT REPRESENTATION

72 DEFENCE

- 720 DEFENCE
 - 7200 DEFENCE

K COMMUNITY SERVICES

81 HEALTH

- 814 HOSPITALS AND NURSING HOMES
 - 8141 HOSPITALS (EXCEPT PSYCHIATRIC HOSPITALS)
 - 8142 PSYCHIATRIC HOSPITALS
 - 8143 NURSING HOMES
- 815 OTHER HEALTH
 - 8151 MEDICINE
 - 8152 DENTISTRY
 - 8153 DENTAL LABORATORIES
 - 8154 OPTOMETRY AND OPTICAL DISPENSING
 - 8155 AMBULANCE SERVICES
 - 8156 COMMUNITY HEALTH CENTRES (MEDICAL)
 - 8157 COMMUNITY HEALTH CENTRES (PARAMEDICAL)
 - 8158 HEALTH SERVICES N.E.C.
- 816 VETERINARY SERVICES
 - 8160 VETERINARY SERVICES

82 EDUCATION, MUSEUM AND LIBRARY SERVICES

- 823 SCHOOL EDUCATION
 - 8231 PRESCHOOLS
 - 8232 PRIMARY SCHOOLS
 - 8233 SECONDARY SCHOOLS
 - 8234 COMBINED PRIMARY AND SECONDARY SCHOOLS
 - 8235 SPECIAL SCHOOLS
- 824 POST SCHOOL AND OTHER EDUCATION
 - 8241 UNIVERSITIES
 - 8242 COLLEGES OF ADVANCED EDUCATION
 - 8243 TECHNICAL AND FURTHER EDUCATION COLLEGES
 - 8244 EDUCATION N.E.C.

- 825 LIBRARIES, MUSEUMS AND ART GALLERIES
 - 8251 LIBRARIES
 - 8252 MUSEUMS AND ART GALLERIES

83 WELFARE AND RELIGIOUS INSTITUTIONS

- 830 WELFARE AND RELIGIOUS INSTITUTIONS
 - 8304 WELFARE AND CHARITABLE HOMES N.E.C.
 - 8305 WELFARE AND CHARITABLE SERVICES N.E.C.

- 8306 RELIGIOUS INSTITUTIONS

84 OTHER COMMUNITY SERVICES

- 846 RESEARCH AND METEOROLOGY SERVICES
 - 8461 RESEARCH AND SCIENTIFIC INSTITUTIONS
 - 8462 METEOROLOGICAL SERVICES
- 847 BUSINESS AND LABOUR ASSOCIATIONS
 - 8471 BUSINESS AND PROFESSIONAL ASSOCIATIONS
 - 8472 LABOUR ASSOCIATIONS
- 848 OTHER COMMUNITY ORGANISATIONS
 - 8481 POLITICAL PARTIES
 - 8482 COMMUNITY ORGANISATIONS N.E.C.
- 849 OTHER COMMUNITY SERVICES
 - 8491 EMPLOYMENT SERVICES
 - 8492 POLICE
 - 8493 PRISONS AND REFORMATORIES
 - 8494 FIRE BRIGADES
 - 8495 SANITARY AND GARBAGE DISPOSAL SERVICES

L RECREATION, PERSONAL AND OTHER SERVICES

91 ENTERTAINMENT AND RECREATIONAL SERVICES

- 913 ENTERTAINMENT
 - 9131 MOTION PICTURE PRODUCTION
 - 9132 MOTION PICTURE FILM HIRING
 - 9133 MOTION PICTURE THEATRES
 - 9134 RADIO STATIONS
 - 9135 TELEVISION STATIONS
 - 9136 LIVE THEATRE, ORCHESTRAS AND BANDS
 - 9137 CREATIVE ARTS
 - 9138 ENTERTAINMENT N.E.C.
- 914 SPORT AND RECREATION
 - 9141 PARKS AND ZOOLOGICAL GARDENS
 - 9142 LOTTERIES
 - 9143 GAMBLING SERVICES (EXCEPT LOTTERIES)
 - 9144 SPORT AND RECREATION N.E.C.

92 RESTAURANTS, HOTELS AND CLUBS

- 923 RESTAURANTS, HOTELS AND ACCOMMODATION
 - 9231 CAFES AND RESTAURANTS
 - 9232 HOTELS, ETC (MAINLY DRINKING PLACES)
 - 9233 ACCOMMODATION
- 924 CLUBS
 - 9241 LICENSED BOWLING CLUBS
 - 9242 LICENSED GOLF CLUBS
 - 9243 LICENSED CLUBS N.E.C.
 - 9244 NON-LICENSED CLUBS N.E.C.

93 PERSONAL SERVICES

- 934 LAUNDRIES AND DRY-CLEANERS
 - 9340 LAUNDRIES AND DRY-CLEANERS
- 935 HAIRDRESSERS, BEAUTY SALONS
 - 9351 MENS HAIRDRESSERS
 - 9352 WOMENS HAIRDRESSING AND BEAUTY SALONS
- 936 OTHER PERSONAL SERVICES
 - 9361 PHOTOGRAPHY SERVICES N.E.C.
 - 9362 FUNERAL DIRECTORS
 - 9363 CREMATORIA AND CEMETERIES
 - 9364 PERSONAL SERVICES N.E.C.

94 PRIVATE HOUSEHOLDS EMPLOYING STAFF

- 940 PRIVATE HOUSEHOLDS EMPLOYING STAFF
 - 9400 PRIVATE HOUSEHOLDS EMPLOYING STAFF

M NON-CLASSIFIABLE ECONOMIC UNITS

99 NON-CLASSIFIABLE ECONOMIC UNITS

- 990 NON-CLASSIFIABLE ECONOMIC UNITS
 - 9900 NON-CLASSIFIABLE ECONOMIC UNITS

Appendix 4

ANU3 Occupational Prestige Scores

**Socioeconomic Status Scores for Australian
occupations based on the Australian Standard
Classification of Occupations (ASCO)**

ASCO	ANU3	ASCO	ANU3	ASCO	ANU3	ASCO	ANU3
1101	97.0	2217	67.3	2813	31.9	4101	24.7
1103	96.1	2219	64.2	2815	41.1	4103	27.4
11	96.6	22	68.4	2817	44.2	41	26.0
				2819	44.8		
1201	76.0	2301	91.9	28	47.5	4201	19.2
12	76.0	2303	100.0			4203	19.3
		2305	88.7	2901	79.3	4205	22.3
1301	64.4	2307	79.5	2903	80.8	4207	3.4
1303	66.1	2309	63.1	2905	77.7	4209	13.4
1305	50.0	2311	71.4	2907	66.0	4211	37.9
1307	57.9	2313	67.9	2909	69.8	4213	18.8
1309	71.0	2315	60.8	2911	53.0	42	19.2
1311	75.4	2317	67.8	2999	51.8		
1313	84.1	2319	43.5	29	68.3	4301	28.3
1315	63.0	2321	52.7			4303	30.3
1317	82.0	2323	85.4	3101	41.7	4305	39.5
1319	64.8	2399	60.2	3103	41.9	4307	36.4
1399	69.1	23	71.8	31	41.8	4309	38.5
13	68.9					4311	27.3
		2401	56.2	3201	39.0	4313	32.8
1401	48.5	2403	62.5	3203	38.2	4315	31.3
14	48.5	2405	69.2	3205	45.7	4399	34.4
		2407	67.7	3207	42.9	43	33.2
1501	40.9	24	63.9	3299	48.0		
1503	39.9			32	42.8	4401	19.6
1505	42.2	2501	82.1			4403	26.1
1507	54.7	2503	63.8	3301	66.8	4405	18.6
1599	44.6	2505	40.5	3303	60.0	4407	23.4
15	44.5	25	62.1	3305	54.6	4409	23.5
				3307	56.7	4411	26.2
1601	42.2	2601	59.8	33	59.5	4413	24.0
16	42.2	2603	56.5			44	23.1
		2605	77.7	3401	50.4		
2101	67.0	2607	61.7	34	50.4	4501	31.7
2103	79.2	26	63.9			4503	27.4
2105	85.5			3501	53.6	4505	26.2
2107	70.1	2701	57.9	35	53.6	4507	15.5
2109	69.9	2703	58.0			4509	28.8
2199	70.6	2705	56.1	3901	37.7	4511	29.0
21	73.7	2707	60.5	3903	34.4	45	26.4
		2799	67.2	3905	33.5		
2201	67.5	27	59.9	3907	39.5	4601	29.9
2203	67.4			3909	41.7	4603	36.1
2205	56.3	2801	50.8	3911	51.3	4605	29.2
2207	72.8	2803	45.1	3913	32.6	4607	19.6
2209	73.6	2805	46.6	3915	25.9	4609	20.5
2211	67.7	2807	54.7	3999	30.1	46	27.1
2213	66.9	2809	56.6	39	36.3		
2215	75.1	2811	58.9			4701	23.3

ASCO	ANU3	ASCO	ANU3	ASCO	ANU3	ASCO	ANU3
4703	24.3	5503	25.5	7101	15.7	8103	4.4
4705	26.8	5505	20.3	7103	16.4	8105	9.0
4799	14.1	55	23.5	7105	11.8	8107	7.2
47	22.1			7107	13.3	8109	14.9
		5601	26.2	71	14.3	8199	6.9
4801	28.0	5603	27.4			81	8.4
4803	10.0	5605	16.6	7201	17.8		
4805	8.9	56	23.4	7203	3.4	8201	19.6
48	15.6			7205	8.1	8203	13.7
		5901	26.9	7207	12.5	8205	6.1
4901	7.9	5903	41.1	7209	5.3	8299	19.9
4903	19.3	5905	28.2	7211	29.2	82	14.8
4905	18.1	5907	26.6	7299	6.3		
4907	27.6	5909	14.3	72	11.8	8301	3.7
4909	32.3	5999	15.7			83	3.7
4911	17.1	59	25.5	7301	29.5		
4913	16.8			7303	7.1	8401	12.2
4915	6.5	6101	49.8	7305	20.3	8403	11.6
4917	12.6	6103	48.6	7307	35.9	8405	14.8
4919	31.0	6105	43.0	7309	8.9	8407	1.9
4921	21.2	6199	39.3	7311	9.9	8409	1.6
4923	14.9	61	45.2	7313	10.1	8411	1.0
4925	24.3			7315	11.7	8413	0.6
4927	31.0	6201	39.3	7317	21.5	8415	19.3
4929	25.5	62	39.3	7399	11.2	8499	7.6
4931	38.7			73	16.6	84	7.8
4999	29.8	6301	25.3				
49	22.0	63	25.3	7401	6.8	8901	0.0
				7403	8.6	8903	13.2
5101	32.6	6401	25.2	7405	8.8	8905	10.1
5103	22.2	6403	11.2	7407	9.4	8907	5.9
5105	30.7	6405	36.0	7409	5.9	8909	15.3
51	28.5	64	24.1	7411	14.1	8911	18.4
				7413	6.1	8913	8.2
5201	33.8	6501	31.9	7415	15.7	8915	17.2
5203	33.8	6503	21.1	7417	25.2	8917	13.1
52	33.8	6505	9.5	7419	9.9	8919	13.1
		6507	30.5	7421	6.3	8921	14.2
5301	29.0	6599	27.5	7423	11.4	8923	10.8
5303	24.3	65	24.1	7425	9.7	8925	30.4
5305	33.6			7427	6.4	8999	9.8
53	29.0	6601	29.9	7429	3.6	89	12.8
		6603	30.7	7431	11.3		
5401	19.6	6605	20.8	7433	8.7		
5403	16.3	6607	15.3	7435	6.9		
5499	19.9	6609	39.6	7499	10.1		
54	18.6	6699	33.1	74	9.7		
		66	28.2				
5501	24.8			8101	7.8		

Appendix 5

Appendix tables

Appendix Table 1: Commencements, university psychology students, by course type and sex, 1989 and 1990

	Number							
Year / sex	Bachelor		Grad Dip	Master		PhD	Other	Total
	Pass	Hons		Research	Course			
1989								
Male	245	11	85	20	76	32	9	478
Female	768	33	207	31	181	30	17	1,267
Persons	1,013	44	292	51	257	62	26	1,745
1990								
Male	258	9	67	20	99	26	10	489
Female	803	11	187	36	261	47	25	1,370
Persons	1,061	20	254	56	360	73	35	1,859

Source: Department of Employment, Education and Training unpublished

Appendix Table 2: Completions, university psychology students, by course type, 1979-1982

	Number					
	<i>Bachelor</i>					
<i>Year</i>	<i>Pass</i>	<i>Hons</i>	<i>Grad Dip</i>	<i>Master</i>	<i>PhD</i>	<i>Total</i>
1979	1,377	278	65	97	40	1,857
1980	1,392	273	43	107	27	1,842
1981	1,594	258	58	91	44	2,045
1982	1,430	290	60	130	30	1,940

Source: Australian Bureau of Statistics Cat. No. 4208.0

Appendix Table 3: Persons qualified in and whose occupation is psychologist, by State and sex, 1986 Census

State	Number					
	Occupation is psychologist			Qualified in psychology		
	Males	Females	Persons	Males	Females	Persons
NSW	527	668	1,195	2,345	3,584	5,930
Vic	405	606	1,009	1,358	2,172	3,538
Qld	299	299	598	731	1,075	1,807
WA	193	290	482	718	1,099	1,815
SA	166	158	322	553	694	1,247
Tas	39	62	102	151	214	365
NT	16	17	33	69	85	151
ACT	56	49	107	302	397	700
Australia	1,701	2,149	3,848	6,227	9,320	15,553

Source: Australian Bureau of Statistics 1986 census, Microfiche tables CX0015 and CX0046

Appendix Table 4: Labourforce status, persons with highest qualification in psychology, by sex, 1981 and 1986 Census

Year / sex	Number			Total
	Employed	Unemployed	Not in labour force / Not stated	
1981				
Males				
Higher degree	1,097	17	87	1,199
Grad dip	264	9	25	298
Bachelor	2,835	124	308	3,265
Diploma	102	8	24	135
Not classified	3	—	1	5
Females				
Higher degree	695	19	143	860
Grad dip	244	12	54	314
Bachelor	3,311	190	1,113	4,613
Diploma	144	7	78	228
Not classified	1	1	5	8
Persons	8,696	387	1,838	10,925
1986				
Males				
Higher degree	1,347	31	121	1,498
Grad dip	439	10	31	481
Bachelor	3,527	162	396	4,084
Diploma	113	8	30	152
Not classified	13	—	—	13
Females				
Higher degree	1,060	36	200	1,296
Grad dip	587	29	97	712
Bachelor	5,307	312	1,442	7,058
Diploma	151	14	79	246
Not classified	11	1	5	15
Persons	12,555	603	2,401	15,555

Source: Australian Bureau of Statistics 1981 census, Microfiche table no. 3
 Australian Bureau of Statistics 1986 census, Microfiche table CX0015

Appendix Table 5: Occupational major group, persons with highest qualification in psychology, 1986 Census

<i>ASCO major group</i>	Per cent					<i>All degrees</i>
	<i>Higher degree</i>	<i>Grad dip</i>	<i>Bachelor</i>	<i>Diploma</i>	<i>Other</i>	
Managers and administrators	1.7	0.9	8.8	0.2	—	11.6
Professionals	16.1	5.9	38.9	0.9	0.1	62.0
Para-professionals	0.5	0.6	5.7	0.3	—	7.1
Tradespersons	0.1	—	0.7	—	—	0.8
Clerks	0.7	0.4	10.4	0.3	—	11.7
Sales / Service	0.3	0.3	4.4	0.2	—	5.2
Plant / Machine operators	—	—	0.3	—	—	0.4
Labourers and related	0.1	0.1	1.0	0.1	—	1.2
All occupations	19.3	8.2	70.2	2.1	0.2	100.0

Source: Australian Bureau of Statistics 1986 census, unpublished data

Appendix Table 6: Most common occupations of persons with highest qualification in psychology, 1986 Census

		Number					
ASCO unit group		Higher degree	Grad dip	Bachelor	Diploma	Other	All degrees
2903	Psychologist	895	362	1,260	41	—	2,558
2501	Uni and CAE teachers	517	34	300	6	2	859
2603	Counsellors	134	97	445	12	—	688
3901	Welfare para-professionals	41	37	381	23	—	482
2705	Personnel specialists	38	46	340	7	—	431
2405	Secondary school teachers	27	33	326	4	2	392
5000	Clerks nfd	18	9	305	4	—	336
5301	Accounting clerks	12	11	283	7	—	313
2403	Primary school teachers	10	10	252	4	1	277
1313	Public policy managers	28	14	162	1	—	205
2799	Other business professionals	35	19	147	3	—	204
1309	Personnel & indus relns managers	25	29	142	3	—	199
2000	Professionals nfd	31	17	141	2	—	191
3401	Registered nurses	10	7	165	7	—	189
2905	Education researchers	33	17	136	1	1	188
2707	Computing professionals	16	9	153	2	—	180
5101	Office secretaries & stenographers	10	6	135	8	—	159
5999	Other clerks	7	4	141	3	—	155
2503	TAFE teachers	27	9	111	—	—	147
6301	Sales assistants	8	5	130	3	—	146
1317	Education managers	32	11	90	2	—	135
2601	Social workers	12	8	111	3	—	134
1303	Sales and marketing managers	9	7	114	2	—	132
6601	Child care, refuge workers	3	12	106	4	2	127
2399	Other diagnosis & treatment prof	12	6	105	1	—	124
5601	Receptionists & information clerks	8	9	99	5	—	121
2505	Extra-systemic teachers & instruct	14	12	88	4	2	120
9101	Other categ inadeq described	14	7	95	4	—	120
1399	Other specialist managers	28	5	85	—	—	118
2907	Other social scientists	17	8	77	—	—	102
1201	General managers	21	8	67	5	—	101
2400	School teachers nfd	10	7	83	—	—	100
2607	Ministers of religion	22	3	67	3	—	95
1501	Shopkeepers	8	—	78	1	1	88
2407	Special education teacher	8	1	73	—	—	82
1599	Other managing supervisors	7	11	56	7	—	81
6201	Sales representatives	3	4	70	4	—	81
2703	Public relations officer	6	3	71	—	—	80
2999	Other professionals	8	4	65	3	—	80
1401	Farmers and farm managers	7	3	53	2	—	65
5905	Personnel clerks	5	1	58	—	—	64
	All other occupations	619	287	3,978	205	19	5,108
	All occupations	2,795	1,192	11,144	396	30	15,557

Source: Australian Bureau of Statistics 1986 census, unpublished data

Appendix Table 7: Employed psychology labour force, by industry and sex, 1986 Census

		Number		
ASIC division / class		Males	Females	Persons
A	Agriculture, forestry, fishing and hunting	2	2	4
B	Mining	2	—	2
C	Manufacturing	6	6	12
D	Electricity, gas and water	5	4	9
E	Construction	2	—	2
F	Wholesale and retail trade	6	9	15
G	Transport and storage	6	2	8
H	Communication	6	5	11
I	Finance, property and business services	73	50	123
inc	6383 Market and business consultancy services	49	24	73
J	Public administration and defence	208	183	391
inc	7111 Federal government administration	43	34	77
	7112 State government administration	102	108	210
	7200 Defence	56	24	80
K	Community services	1,354	1,846	3,200
inc	8141 Hospitals (except psychiatric)	131	203	334
	8142 Psychiatric hospitals	90	97	187
	8151 Medicine	178	198	376
	8156 Community health centres (medical)	75	113	188
	8157 Community health centres (paramedical)	29	25	54
	8158 Health services nec	77	118	195
	8200 Education, museum and library services nfd	22	30	52
	8230 School education undefined	45	54	99
	8232 Primary schools	126	206	332
	8233 Secondary schools	102	125	227
	8235 Special schools	51	35	86
	8241 Universities	65	106	171
	8242 Colleges of Advanced Education	22	28	50
	8243 TAFE's	27	39	66
	8244 Education nec	43	71	114
	8304 Welfare and charitable homes nec	23	36	59
	8305 Welfare & charitable services nec	106	160	266
	8461 Research and scientific institutions	19	22	41
	8491 Employment services	33	37	70
	8493 Prisons and reformatories	27	26	53
L	Recreation, personal and other services	15	17	32
M	Non-classifiable economic units	13	27	40
	All industries	1,698	2,151	3,849

Source: Australian Bureau of Statistics 1986 census, Microfiche table CX0050

Appendix Table 8: First destinations of first degree psychology graduates, selected years 1981 to 1991

Category	Per cent					
	<i>As of 30 April</i>					
	1981	1983	1985	1987	1989	1991
Employed full-time						
Government	20.1	15.1	na	15.9	14.0	12.2
Private	11.8	10.9	13.2	14.3	19.2	13.6
Education	9.9	7.5	na	8.7	5.7	5.3
Other	0.4	0.9	na	1.6	0.1	0.4
Total employed full-time	42.2	34.4	38.0	40.5	39.0	31.5
Employed part-time	6.4	9.8	6.1	5.8	12.9	15.3
Unemployed	6.2	6.9	4.5	4.4	6.5	10.3
Studying full-time						
Honours	12.8	10.8	na	16.5	12.0	11.8
Higher degree	5.3	7.9	na	6.0	5.5	6.2
Other degree / diploma	16.1	17.5	na	9.8	14.9	19.0
Other full-time study	0.7	0.4	na	1.8	2.4	0.8
Unknown	0.7	0.9	na	3.3	—	—
Total studying full-time	35.5	37.6	37.1	37.4	34.9	37.7
Unavailable	7.9	8.7	11.3	10.2	3.8	3.3
Overseas	1.7	2.6	3.0	1.7	2.8	1.9
All categories	100.0	100.0	100.0	100.0	100.0	100.0
<i>Number of respondents</i>	<i>1,219</i>	<i>1,118</i>	<i>1,047</i>	<i>988</i>	<i>1,406</i>	<i>1,672</i>

Source: Graduate Careers Council of Australia Ltd, 1981–1991

Appendix Table 9: First destinations of UK first degree psychology graduates, selected years 1979–80 to 1989–90

Category	Per cent					
	Year of graduation					
	1979–80	1981–82	1983–84	1985–86	1987–88	1989–90
Employed						
Permanent	40.8	40.9	44.7	50.4	52.0	44.8
Short-term	4.6	4.6	6.5	6.0	6.0	7.2
Unemployed	12.3	18.3	13.4	9.5	7.8	8.7
Further education or training	35.0	30.3	30.3	28.8	25.7	27.5
Unavailable	4.8	4.1	3.8	4.4	6.7	9.6
Overseas	2.5	1.8	1.4	0.9	1.8	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
<i>Number of respondents</i>	1,279	1,317	1,316	1,286	1,451	1,594
Employer categories of those employed						
Public service	40.3	44.4	36.7	36.9	32.9	35.2
Education	9.4	9.3	10.7	10.0	9.6	13.5
Industry and commerce	43.2	31.8	37.2	39.8	44.2	38.5
Miscellaneous	7.1	14.3	15.4	13.2	13.4	12.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
<i>Number of respondents</i>	481	524	578	620	718	678

Source: University Grants Committee, 1980–1990

Appendix Table 10: Destinations of psychology graduates completing their course in 1978, as at 30 April 1979 and 1984

<i>Category</i>	Per cent	
	<i>As of 30 April</i>	
	<i>1979</i>	<i>1984</i>
Employed full-time		
Government	14.5	34.0
Private	5.5	12.6
Education	9.0	27.4
Other	2.0	4.1
Total employed full-time	31.0	78.1
Employed part-time or unemployed	12.5	3.8
Studying full-time		
Higher degree	4.1	3.5
Teacher training	18.0	—
Other full-time study	22.7	1.8
Total studying full-time	44.8	5.3
Unavailable	11.6	12.7
All categories	100.0	100.0
<i>Number of respondents</i>	<i>344</i>	<i>339</i>

Source: Coyte, 1985