Converging patterns to emerging adulthood? Australia and the US in Comparative perspective

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The transition to adulthood has become of increasing importance to researchers and policy makers alike as the period of transition from child to adult becomes longer. This prolongation of the transition period has consequences for individuals, families and society as a whole. The period of transition has been defined in many ways and usually involves the transition from financial dependence to financial independence in addition to the transition from social dependence to social independence.

Demographically the transition to adulthood can be seen to encompass leaving school, entering the labor force, leaving the parental home, marriage and childbearing (Billari 2001, Billari & Wilson 2001, Molgat 2002).

One of the key arguments in recent times about this transition is the extent to which the changing structure of society has contributed to these transitions becoming more individualized or more standardized (for eg Fussell 2003, Shanahan 2000, Billari 2001, Stettersten 1999, 2002). Fussell (2003) argues that education has standardised the early years of the transition for adulthood as more and more young people stay in education for longer periods. But increases in education have also lead to more individualised pathways as more options are generated for young people and they are able to combine an increasing number of roles. Guerrero (2001) emphasises the effect of gender as the expansion of education has had a profound impact on women's lives.

Guerrero (2001) also highlights the effect of education on the living arrangements of young people. Continuing education can lead to continued financial dependence and leaving home can be delayed. Or, it can give rise to new living arrangements such as shared housing and consensual partnering and can even precipitate leaving home. Throughout this period of prolonged education young people may also be combining work and study through full-time/part-time arrangements. This increased complexity in the transition to financial dependence necessitates a more individualised approach

to 'growing-up' by young people.

The transition to social independence is also becoming more complex. Delayed marriage is associated with increasing numbers of young cohabiters, and an increasing length of time between leaving the family of origin and starting a family of their own.

Delayed marriage is also associated with delayed childbearing. However premarital childbearing is also more common for current cohorts than for those in the past. Premarital childbearing in Australia is more often associated with cohabiting parents than with single mothers.

This paper uses data from the Australian Census of Population Housing between 1981 and 2001 to explore the extent of changes in the pattern of transition to adulthood in Australia. The transition to adulthood is measured using six common events or 'states' which occur in the process of transitioning from adolescence to adulthood.

These 'states' relate to education, labor force status, marital status, parental status, relationship to the head of household and residence type. The paper is structured in the following way. First, I outline the sources of data and the methods used to analyse these data. The paper then describes the changes in elements of the transition to adulthood between 1981 and 2001 for Australian males and females. The paper then compares the level of heterogeneity found in the transition for males and females of different cohorts by way of an entropy index. This is repeated to compare the results by urbanity and ethnicity. Finally, the experience of young Australians is compared with that of young Americans.

It is hypothesized that the transition to adulthood in Australia has similar characteristics to that found in the US by Fussell (2003; Fussell & Furstenburg 2004). That is that post war cohorts are experiencing greater standardization early in their lifecourse, but are also characterized by a larger range of post-high school choices and are thus experiencing greater individualization and diversity. However it would be expected that changes in the pattern of the transition occur later in Australia than in the US.

Data and Method

This paper uses data from the Australian Census of Population Housing between 1981 and 2001 to explore the extent of changes in the pattern of transition to adulthood in Australia. Throughout this period censuses have been conducted every 5 years.

The transition to adulthood is measured using six common events or 'states' which occur in the process of transitioning from adolescence to adulthood. These 'states'

relate to education, labour force status, marital status, parental status, relationship to the head of household and residence type.

In order to create an indicator to measure the differences in the combinations of states all individuals were assigned using the coding scheme outlined in Table 1. To measure living arrangements, respondents were classified according to their household type and their relationship within the household. The status variable then indicated the position of the respondent in relation to two major demographic markers of the transition to adulthood, marriage and childbearing. The final group of states used in this measure is that relating to the economic activities of education and employment.

Table 1: Coding scheme for status variable

State	Code
Household type: Family household	1
Household type: Non-family household	2
Relationship in household: Head or spouse	-1
Relationship in household: Child	-2
Relationship to household head: Other relative	-3
Marital status: Never-married	0
Marital status: Ever-married	1
Parental status: Has no child (asked of females only)	0
Parental status: Has own child (asked of females only)	1
Labor force status: Not in labour force	0-
Labor force status: In labour force	1-
School status: Not attending educational institution	0
School status: Attending educational institution	1

Using a common index of entropy (Theil 1972) the paper compares the pattern of transition over time. This index allows for the comparison of the heterogeneity of combinations of 'states' and provides an opportunity to visualise the effect of standardized or individualized lifecourse. The index developed by Theil (1972) is calculated as:

$$E = -\sum_{s=1}^{S} p_s \log(p_s)$$

where S is the number of states and p_s is the relative frequency of states. The index measured in this way has previously been used with longitudinal data to show the heterogeneity of state distributions by age (Billari 2001).

In order to apply this approach to census data Fussell (2003) has modified the calculation of this index to allow for the use of percentages rather than absolute numbers. This method of standardization had been used with census data from the US (Fussell 2003; Fussell & Furstenburg 2004) and Mexico (Fussell, 2004).

$$E = -\sum_{s=1}^{S} ((p_s / p_S) * 100) \log((p_s / p_S) * 100)$$

The entropy index results in a measure of heterogeneity equal to zero where there is perfect homogeneity to a maximum level of heterogeneity when there is an equal distribution of cases across all status combinations. For women, the maximum entropy is 1.81, as their position in relation to six states is measured. Men are not asked about children in the Australian census so their maximum entropy is 1.51, based on five states. In order to simplify its presentation, the observed entropy is presented as a percentage of the maximum entropy. In this way it can be understood as the extent to which the combination of states are more or less structured.

While use of census data implies consistency over time there are some specific problems with consistency using the Australian Censuses for the period under review. Access to unit record data for the census is only available through the 1% sample files available under the AVCC CURF¹ agreement. Age is asked in individual year but is released in the CURF differently in each year. For 1981 and 2001 age is available in single years. For 1986 age is grouped from age 15 into 5-yr age groups and for 1991 and 1996 age is grouped from age 25. For the purposes of this paper the value of the 5-yr age group is applied for each age in the group where necessary. This results in some 'stepping' in the presented charts.

¹ Australian Vice Chancellor's Confidentialised Unit Record Agreement.

The classification of rural and urban residence has changed over the period, as has the nature of some areas. Some large country centres may have been considered rural in 1981 but by 2001 were large enough to be classified as urban. For the purposes of this paper I have used the prevailing classification at the time of each census. Due to restrictions in the 1% sample file from 1991 this has resulted in some areas being grouped as rural when they are clearly urban. Further investigation of this issue is required. Ethnicity is often measured in Australia as a mixture of Indigenous status and country of birth of respondent and parents. Birth countries are usually divided by English-speaking vs. non-English speaking countries. The 2001 sample file includes only information on wether or not each parent is born in Australia or overseas. Thus 2001 has been excluded from this analysis.

The biggest limitation of the Australian census data is that the number of children ever born is not collected in each census. Censuses conducted in 1991 and 2001 do not include information on children. For this exercise a weighting factor based on the distribution of women having a child or not in 1996 is applied to the 1991 and 2001 data. This weight is calculated based on the proportion of women with a child for each category of the status variable described above. Any delay in first birth between 1991 and 1996 or 1996 and 2001 will not be apparent from these data. Further refinement of this would be desirable.

The remainder of this paper presents the results of the entropy index by age, sex, urbanity and ethnicity. Finally the experiences of young Australians are compared with those of young Americans. Before examining the results of the entropy analysis the paper details some of the changes that have occurred in the transition to adulthood in the period 1981-2001.

Changing states, 1981–2001

The states measured in this paper relate to living arrangements, demographic events and economic indicators. These states are all dynamic in that they experience changes in timing at both the societal and individual level. This section outlines the major changes in these states over time for Australia. The results are presented for men and women in Figures 1 & 2 and in Appendix Table A1.

Living arrangements

For both males and females the percentage living in a family household starts to decline in the 15–19 age group through to the early twenties. In the mid 20s women start to move back into family households as they form families of their own. In the 30–34 age group in 2001, 82 per cent of women were living in a family household compared with 95 per cent in 1981. For women 10 years younger, 67 per cent of women were living in a family household compared with 85 per cent in 1981. While the pattern of residing in a family household has remained the same for women over the 20-year period the level has declined over time for each, except the youngest, age group.

Men do follow a similar pattern however they do not return to family households as quickly or in as great a number. In the 30–34 age group in 2001, 73 per cent of men were living in a family household compared with 93 per cent in 1981. For men 10 years younger, 63 per cent were living in a family household compared with 81 per cent in 1981.

The widening of the gap between 1981 and 2001 in the 20–24 age group reflects a greater propensity to spend time outside of the family household in living independently in group-homes or alone before starting families of their own. This is even more marked for men in early adulthood than for women.

Both men and women are more likely than not to live in a family household at each age from age 10 to age 34. However their relative positions as family member will change dramatically within this period. In 2001 the percentage of women who are classified as a child of the household is 74 at age 15–19, 33 at age 20–24 and 11 age 25–29. There has been little change over the two decades except at age 20–24 where only 26 per cent of women in 1981 were classified as children.

Similar trends are apparent for men however they were more likely to be classified as children at age 20–24 (44% in 2001) and the main change in the period occurred in the 25–29 age group. Here 13 per cent of men in 1981 were classified as children compared with 21 per cent in 2001.

This difference in the classification of men and women highlights a difference in the pattern of leaving home. While men are more likely to be living in a non-family household than women, from age 20–24, women are less likely to be the child in a

family household. They are however more likely to be classified as household heads². In the 20–24 age group in 2001, 29 per cent of women were household heads compared with 14 per cent for men. For both men and women however there has been a large decline in this category over time between the ages of 20 and 29.

Figure 1: Percentage of males in various transition states, 1981–2001

Figure 2: Percentage of females in various transition states, 1981–2001 Marriage and childbearing

The difference between men and women in their classification as household heads is reflected in the timing of marriage. Women are much more likely than men to be married in the 20–24 age group and also at the 25–29 age group. This difference has decreased over time in the 20–24 age group. Between 1981 and 2001 the percentage of women who were ever married in the 20–24 age group dropped from 45 per cent to 12 per cent. The corresponding figures for men were 23 per cent to 6 per cent. The other age groups all show evidence of delayed marriage.

The number of children ever born is only asked of women in the Australian census. It is also a question that is not asked every year. For the years being examined here the questions was asked in 1971, 1981, 1986 and 1996. There is a quite distinct drop in the percentage of women who have ever had a child between 1981 and 1996. In 1981, 61 per cent of women aged 25–29 were mothers. This figure had dropped to 41 per cent in 1996. The drop in total fertility and its delay on starting childbearing is clearly reflected in this chart.

Education and labour force status

Delays in the transition to adulthood are often attributed to increased periods in education. Full time education in particular is often associated with dependence and can result in young people staying longer in the family home. The percentage of people attending an educational institution drops sharply from age 15–19 to age 20–24. This is associated with the end of secondary schooling. However, the percentage attending secondary (15–19) and tertiary schooling (20–24) is higher in 2001 than it

8

² The term household head refers to the family reference person and their spouse.

was in 1981, for women more so than men. In the 1980s women were less likely than men to be attending an educational institution after the age of 19. In 2001 women are slightly more likely than men to be attending an educational institution at each age group. This increase in the participation of women in education is associated with changing marriage and fertility patterns in this period.

For men, labour force participation has declined between 1981 and 2001 with the gap being steady at each age group. However, for women the change has occurred in the pattern as well as the level. In 1981 there was a distinct drop in the labour force participation of women between the early and late 20s. The fall is halted by the time women are in the 30–34 age group. This pattern of participation has long been associated with childbearing and rearing during these ages. In 2001, there is also a decline in participation at these ages although it is very small. There is a much more gradual pattern of exit from the labour force.

In summary, the period 1981-2001 for Australians aged 15–34 can be characterised by delayed marriage and childbearing, extended periods of education and living in the parental home, decreased labour force participation form men and increased labour force participation for women. In light of these changes, the next section uses an entropy index to examine the homogeneity of these transitions in combination.

Changing entropy: sex, urbanity, ethnicity

To examine the homogeneity of experience of the six states of transition the entropy index described above is presented here as a proportion of maximum entropy for each year of age by sex, urbanity and ethnicity.

Age and sex

The entropy index of men and women for the period 1981–2001 is presented in Figure 1. The most obvious pattern evident in Figure 1 is that the degree of heterogeneity is higher in 2001 than in previous years for both men and women. This increase in the diversity of lifecourse experience was more marked during the 1980s than the 1990s with very little change. In 2001 heterogeneity of experience reached its peak for men at age 27 (70% of maximum entropy) and for women at age 25 (73% of maximum entropy).

For men the combination of states becomes more complex between the ages of 15 and 21. This is the period in which young men leave school and family, and enter the paid labour force. In 2001, the degree of individualisation for males plateaus at around 70 per cent of maximum entropy until age 27. In 1981 there was a sharp decline in the degree of individualisation during the 20s from a peak of 66 per cent at age 23 to 47 percent at age 29. This change can be attributed to the delay of family formation, marriage and household headship in 2001. While men in 1981 continued to become more homogenous in the early 30s, men in 2001 remain fairly heterogeneous up to age 34.

Figure 3: Entropy as a percentage of maximum entropy, males and females, 1981-2001

For women, the difference between 1981 and 2001 is not a great as that for men. Women show a similar pattern to men of increasing heterogeneity in the 20s however it is somewhat sharper for women. The move toward more homogeneity in the 30s is similar with male and females both sitting at close to 60 per cent of maximum entropy.

The early stages of the transition appear to be more stable over time for women than for men. For women the move to greater participation in education up to age 24 is reflected in a lower level of heterogeneity for women than for men early in the transition.

In 1981 the latter part of the period of transition was quite different for men and women. During the late 20s and early 30s the experience of men became increasingly more homogenous than did that for women. This is most likely due to the effect of labour force participation. For men in 1981 participation was high and did not change much after are 20. For women the early 20s was the beginning of rapid exit from the labour force to care for children and family. Between 1981 and 2001 the delay in childbearing and the increasingly uninterrupted participation of women in the labour force has led to a convergence of experience of men and women in the latter part of the transition.

Rural/ Urban residence

Rural areas in Australia do not provide great opportunities for young people in terms of education and employment. One of the biggest issues for rural areas of Australia is

how to stem the flow of young people to major urban areas. Figure 4 presents the percentage of maximum entropy for males and females living in rural and urban areas.

Figure 4: Entropy as a percentage of maximum entropy, rural and urban residence, 1981–1996

In 1981 there were differences in the level of individualisation between rural and urban areas for both males and females. For urban males the level of heterogeneity was considerably higher than their rural counterparts throughout the late teens and early 20s. They diverge again in the late 20s. For 1991 and 1996 there were no observable differences in the level of heterogeneity between rural and urban males.

A similar pattern was found for women. That is, in 1981 there were rural/urban differences but not in 1991 or 1996. However, for women the difference did not emerge until the 20s. It is possible that this convergence in 1991 and 1996 is due to the measurement of geographic area discussed in the data section rather than any real change. This issue needs further investigation.

Ethnicity

In order to examine the ethnically diverse nature of the Australian population three categories of ethnicity were constructed; Indigenous, English-speaking background, and non-English speaking background. Individuals were classified as coming from a non-English speaking background if they, or either one of their parents, were born in a non-English speaking country. Due to the small numbers of indigenous people in the census sample files they are not presented in this analysis. Figure 5 compares the percentage of maximum entropy for males and females of English-speaking and non-English speaking background.

Figure 5: Entropy as a percentage of maximum entropy, ethnicity, 1981–1996

Both men and women from non-English speaking backgrounds had greater levels of heterogeneity than did their English-speaking counterparts. This was more pronounced for men than for women. For men the cleavage begins in the late teens and continues through to the mid 30s. This diversity of experience needs further exploration.

The US and Australia in comparative perspective

It has been shown above that there have been changes in the level of heterogeneity of the transition to adulthood for Australians over the past two decades. The changes have largely been in the late teens for men and at older ages for both men and women. So how does this compare with other countries? In an attempt to position Australia in an international context Figure 6 presents the data for Australian males and females for 1981 through 2001 with data from the US census for 1970 through 2000.

The data for the US has been prepared by Fussell and are drawn from her paper on the role of education in standardising or individualising the transition to adulthood in the US (Fussell 2003). Fussell concludes that the early stages of the transition to adulthood are more standardised by education as more young people are constrained by the State in their choices. However, education leads to greater individualisation at older ages due to extended period of study, combining work and study and by opening up alternative pathways.

Figure 6: Entropy as a percentage of maximum entropy, US and Australia, 1970-2001

Figure 6 shows that there has been a similar change in the level of heterogeneity for US males as there has been for Australian males. The trend is towards increasing heterogeneity at the older ages. However, US males display a sharper increase in heterogeneity in the teens with little change over time. Both countries show an increase in heterogeneity into the early 20s and then a decrease through the late 20s and early 30s. In Australia the pattern is not quite as peaked as in the US and there is more of a plateau through the 20s and a more gradual decline.

This difference is more marked for women. In the late teens and early 20s there is a large difference in the level of heterogeneity for women in the US and Australia, with women in the US a greater level of complexity of states in this part of the transition. As with the pattern for men, the US shows a steeper decline through the late 20s and early 30s than Australia. In the 1980s the US maintained a greater level of complexity at the older ages. By 2001 Australian women displayed greater diversity of experience at these older ages.

Discussion

This paper has presented the use of an entropy index to measure the complexity of the transition to adulthood for young Australians. It has been shown that the past two decades have seen an increase in the level of complexity and heterogeneity of young peoples lives. For both men and women the 20s and early 30s have become more and more complex. For men the teen years have also become a little more complex over time while for women the change has only occurred from age 20.

This preliminary exploration has also identified differences between the experience of rural and urban men and women in 1981 that have not persisted over time. Also, men from non-English speaking backgrounds display a greater level of heterogeneity of experience than do their English-speaking peers. This pattern was not found among women. Both of these patterns related to urbanity and ethnicity could be related to issues of data limitation rather than a reflection of real experience or real change.

In addition to this view of young Australians the paper has compared the experience of Australians with those of young people in the US. Findings indicate a general convergence in trends over time for men. However there was a sharp divergence in experience for women in their late teens and early 20s. What is the reason for this marked difference between young American and Australian women? Through the current analysis it is impossible to tell, however there are several factors worth further investigation. While delayed childbearing is occurring globally the age structure of fertility is still younger in the US than in Australia with 22 per cent of total fertility occurring before age 25 in Australia compared with 41 per cent of total fertility in the US³. The associated changes in household relationships for American women would contribute to greater complexity at these ages. For Australian women, greater participation in education through the twenties has been associated with increasing dependence on the family of origin and is also a possible contributing factor.

To further this comparison it is essential to determine the elements of the transition to adulthood that are causing the greatest impact in the entropy index. It is possible to do this using the current approach by calculating the difference between total entropy and

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³ Calculated from Table 028 of the US Census Bureau's International Data Base (IDB) http://www.census.gov/ipc/www/idbnew.html.

a measure of entropy with one of the states removed. This will allow is to examine the relative importance of family formation at each age in comparison with the importance of educational and labour force participation.

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Appendix Table A1: Percentage of males and females in various transition states, 1981–2001

	1981M	1986M	1991M	1996M	2001M		1981F	1986F	1991F	1996F	2001F
Males				Liv	ing in a fa	amily house	hold				Females
10-14	97	97	95	96	94	10-14	97	98	95	95	94
15-19	89	89	85	84	84	15-19	88	89	83	81	81
20-24	81	73	66	64	63	20-24	85	78	72	69	67
25-29	86	76	69	67	65	25-29	92	86	81	76	76
30-34	92	81	76	74	73	30-34	95	92	86	85	82
Males Living in a non-family household											Females
10-14	3	3	5	4	6	10-14	3	2	5	5	6
15-19	11	11	15	16	17	15-19	12	11	17	19	19
20-24	19	27	34	36	37	20-24	15	22	28	31	33
25-29	14	24	31	33	35	25-29	8	14	19	24	24
30-34	8	19	24	26	27	30-34	5	8	14	15	18
Males	Head of household or spouse of head of household										Females
15-19	3	1	2	1	1	15-19	9	7	5	5	4
20-24	35	23	18	15	14	20-24	56	47	35	32	29
25-29	72	58	49	44	41	25-29	85	77	70	64	62
30-34	86	73	67	63	61	30-34	92	88	82	80	76
Males					Child of	household					Females
10-14	97	97	95	96	94	10-14	97	98	95	95	94
15-19	83	83	82	79	79	15-19	76	79	76	73	74
20-24	43	45	45	43	44	20-24	26	28	34	33	33
25-29	13	16	17	19	21	25-29	6	8	9	10	11
30-34	5	8	7	9	10	30-34	2	3	3	4	4
Males											Females
15-19	3	4	2	4	4	15-19	3	3	1	3	3
20-24	3	4	3	6	6	20-24	2	3	3	4	5
25-29	1	3	3	3	4	25-29	1	1	2	2	3
30-34	1	1	2	2	2	30-34	0	1	1	1	1
Males	es Ever married										Females
15-19	1	0	2	1	1	15-19	4	3	4	2	1
20-24	23	16	14	8	6	20-24	45	37	27	18	12
25-29	65	56	46	39	32	25-29	81	73	65	54	47
30-34	85	77	72	65	59	30-34	91	88	83	77	70
Males					In the la	abour force					Females
15-19	61	53	49	47	49	15-19	56	50	50	47	50
20-24	90	88	86	81	78	20-24	71	74	75	73	72
25-29	94	92	91	88	85	25-29	55	60	68	69	68
30-34	95	93	92	89	87	30-34	54	57	64	63	65
Males				Atten	ding edu	cational inst	titution				Females
10-14	100	100	100	97	95	10-14	100	100	100	96	96
15-19	57	63	71	68	71	15-19	52	61	71	71	75
20-24	22	23	27	26	30	20-24	15	18	25	26	33
25-29	14	14	14	12	13	25-29	10	11	13	13	15
30-34	13	13	13	10	10	30-34	11	11	11	10	11
					Ever h	ad a child					Females
						15-19	3	3	-	3	-
						20-24	25	22	-	17	-
						25-29	61	54	-	41	-
						30-34	78	76	-	68	-

⁻ Not collected for this age group or this year. Source: Census 1% sample files, 1981, 1986, 1991, 1996, 2001.

Figure 1: Percentage of males in various transition states, 1981–2001

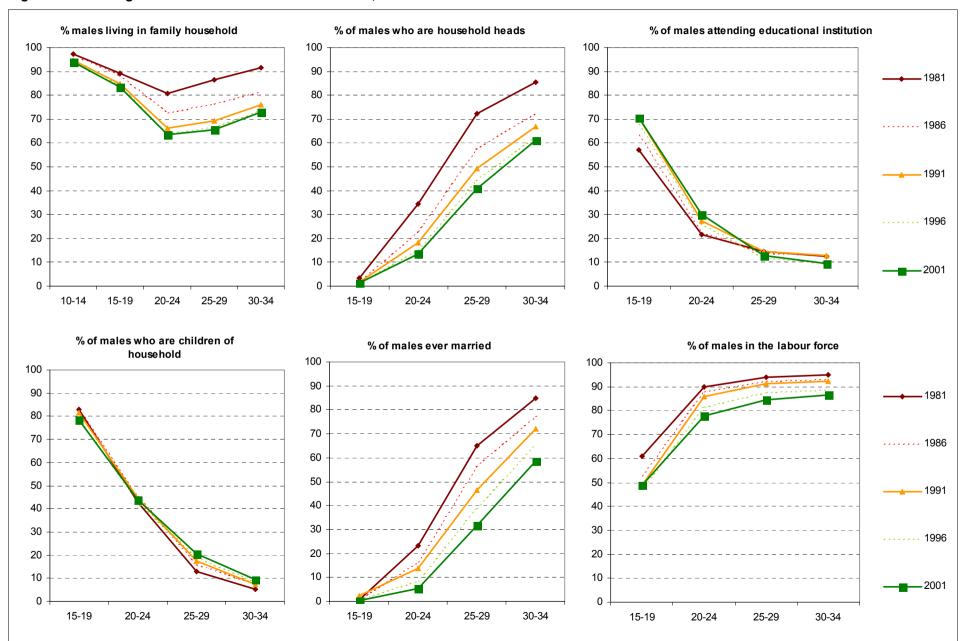


Figure 2: Percentage of females in various transition states, 1981–2001

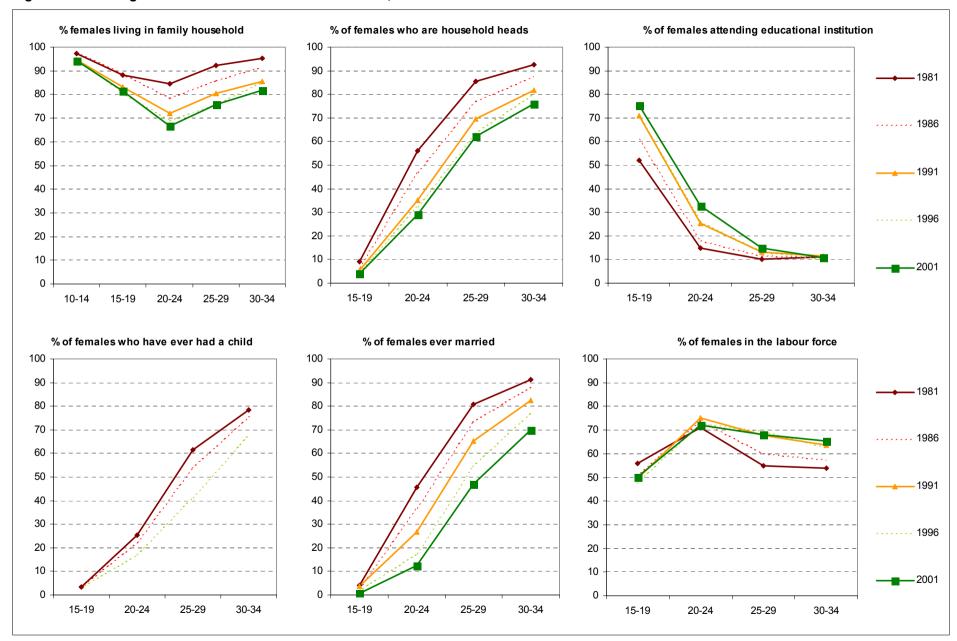


Figure 3: Entropy as a percentage of maximum entropy, males and females, 1981–2001

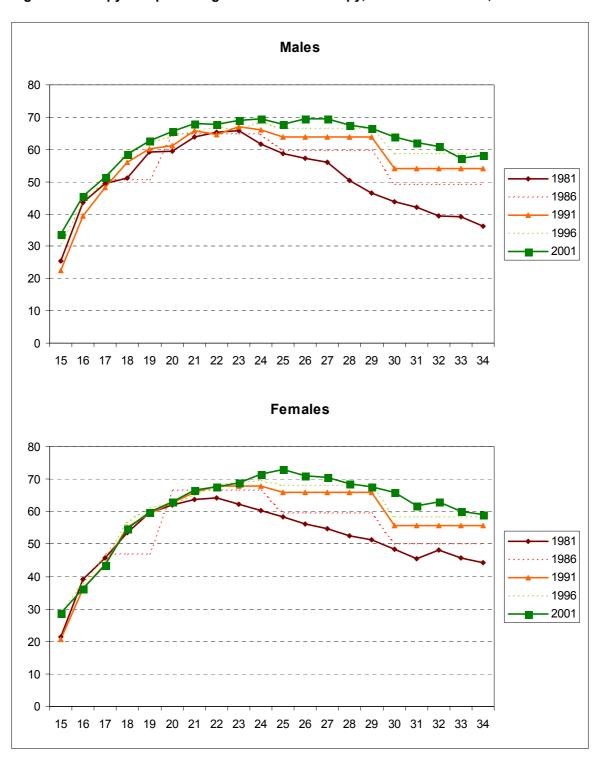


Figure 4: Entropy as a percentage of maximum entropy, rural and urban residence, 1981-1996

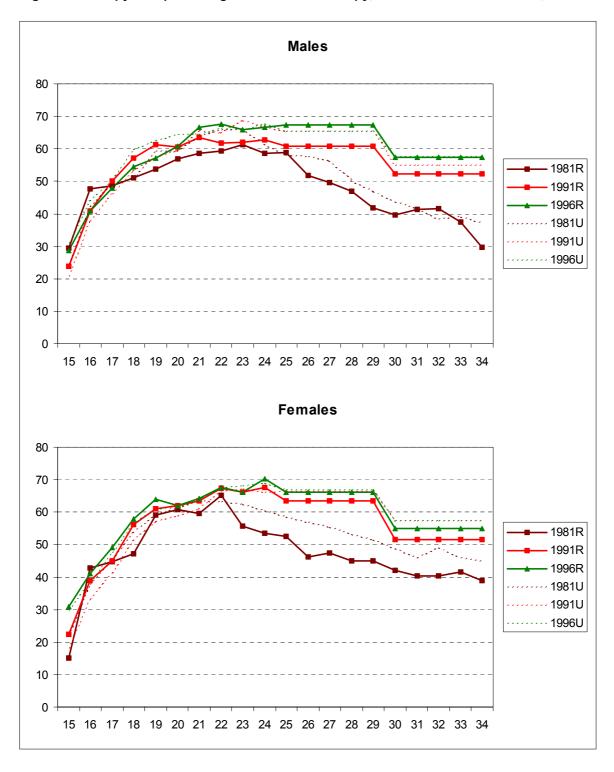


Figure 5: Entropy as a percentage of maximum entropy, ethnicity, 1981–1996

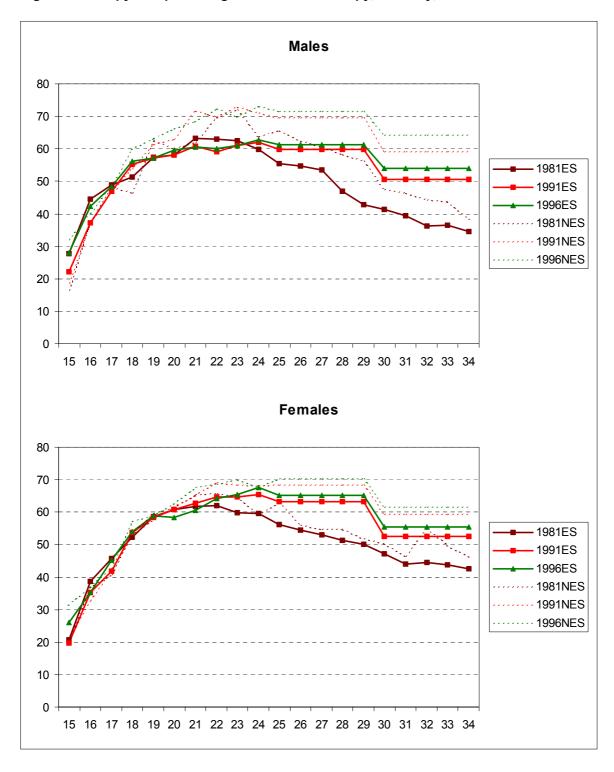


Figure 6: Entropy as a percentage of maximum entropy, US and Australia, 1970–2001

