Who Are the Visitors? Characteristics of Temporary Movers in Australia

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Abstract

Comparison of place of enumeration at the Census with place of usual residence provides a unique window on the geography and characteristics of temporary population movements. This paper uses micro-data from the 2001 Australian Census in a logistic regression framework to examine the characteristics of temporary movers classified according to distance of travel and purpose of move. We show that the age composition of temporary movers varies according to distance of move. For non-local work-related travel, the most significant predictors are being male, maritally unattached and working either in extractive industries or government and defence. Travel for consumption shows more balanced sex ratios but is selective of older age groups, and of those who are unemployed or outside the labour force. Both types of move are strongly associated with income.

Introduction

Among the myriad forms of human population movement, it is temporary mobility that has shown the most dramatic growth and diversification. In Australia, the total number of overnight trips rose by more than 50 per cent during the 1990s (BTR, 2003), and a similar increase was recorded in the UK (ONS 2002). International travel has grown at an even more prodigious rate (WTO, 2004). Temporary moves encompass a wide variety of purposes ranging from holiday travel to seasonal migration; from short business trips to long distance commuting; and from hospital stays to conference travel. Such moves may last from a single overnight stop to an absence of several weeks, months or even years, and range in distance from local moves to international travel. The one feature they share in common is the absence of any stated intention to make a permanent or lasting change of usual residence.

While many types of temporary move have attracted scholarly interest, little attention has been given to scoping the overall dimensions of the phenomenon, particularly within developed countries. Indeed, building on conventional approaches to permanent migration, five key areas can be identified in which even basic information is lacking: first, there are no systematic estimates of the overall prevalence of temporary mobility *(how much movement?);* secondly, we have yet to establish the characteristics of temporary movers *(who moves?);* thirdly, information is needed on the spatial patterning of this mobility *(where do they move?);* fourthly, comes the search for explanation *(why do they move?);* and ultimately is the imperative to demonstrate relevance *(what are the consequences?)*.

The lack of attention given to temporary movement is at least partly due to the dearth of suitable, reliable data. There is no single source of information that captures the complex, multifaceted forms of space-time behaviour that characterise temporary mobility. However, in countries such as Australia, one source that provides some answers to the above questions is the Census. While it is conducted on a *de facto* basis, information is also collected on each individual's usual address. Comparing place of usual residence with place of enumeration provides a national snap-shot of temporary movements on Census night, in much the same way as conventional Census-based studies of migration compare place of residence at two points in time. In conventional Australian Census parlance this group are described as *visitors*, but they include a wide range of people away from home for at least one night for a diverse array of purposes, and here we adopt the more encompassing term of *temporary movers*.

In a companion paper (Bell and Brown, forthcoming) we have employed these data to systematically explore the geography of temporary movements in Australia, as revealed by the 2001 Census. In the current paper we turn attention to the question of mover characteristics, the aim being to establish the extent to which temporary migration is selective of particular socio-demographic groups. By way of background, we first review the nature of temporary mobility and establish a framework for analysis by exploring the factors that influence the propensity to engage in overnight travel away from home. Following discussion of data and methods, the analysis then proceeds in two stages. First, we examine the characteristics of temporary movers, differentiated in terms of three categories of travel: local, intermediate and long distance. We then add purpose of trip to

the equation, distinguishing production-related moves from those that are made principally for the purposes of consumption, and apply logistic regression to determine the most significant characteristics for each combination of distance and purpose of trip. The paper concludes with a summary of findings against our original hypotheses, and outlines the challenges ahead.

The nature of temporary mobility

Temporary mobility is perhaps most readily defined as the complement of permanent migration: that is, as any type of territorial movement that does not involve a lasting change of usual residence (Zelinsky, 1971). In reality, all forms of mobility occupy related points on a space-time continuum, but temporary moves have several distinguishing features. First, temporary moves are highly variable in duration. Absences from home may last from a few hours in the case of local, diurnal trips, to several days, weeks or even months. Secondly, whereas permanent migration is generally measured as a single transition, temporary moves are repetitive events which vary widely in both frequency and periodicity. Thirdly, while permanent moves tend to be distributed evenly over the course of a year, many forms of temporary movement involve marked seasonal peaks and troughs. A fourth point of contrast is that the very notion of usual residence, which is integral to concepts of permanent migration, has less centrality and indeed tends to obscure certain forms of recurrent movement (Behr and Gober, 1982). Some of the most highly mobile groups – seasonal workers, travelling showmen, and those on extended touring holidays – lack a recognisable 'usual residence', while others including long-distance commuters and

children in bipolar families – oscillate between two or more dwellings. In addition, temporary moves often involve complex, spatial circuits rather than a single, directional displacement (Bell and Ward, 2000).

Within the realm of temporary movement, one important distinction is between daytime visits and those which involve an overnight stay. As Smith (1989) points out, those staying overnight impose a quite different set of demands on goods and services at the destination. Another useful division, also commonly made in relation to permanent migration, is between production-related moves and those that are triggered primarily by consumption (Roseman, 1992). The distinction is inevitably fuzzy at the margins but the former generally involve some form of economic contribution at the destination, while the latter are made to access some form of amenity, good or service. Table 1 sets out examples of each type.

Table 1 here

In the production-related category several types of work-based travel can be identified. One prominent group are seasonal workers, such as fruit-pickers, many of whom pursue elaborate, timeworn circuits following the crop cycle (Hanson, 2003; Perloff *et al.*, 1998). Another distinctive pattern, now well established, is the long distance commuting characteristic of the remote mining industry, which involves extended schedules away from home (Houghton, 1993). Weekly commuting among business people is a more recent phenomenon (Green *et al.,* 1999) but currently outpaced by the massive press of executives

and professionals in government and industry, who make regular, or occasional, overnight trips to meet clients, suppliers, and colleagues (Charles-Edwards, 2004; Swarbrooke and Horner, 2001). Also significant in this category, though surprisingly little documented, are the transport workers, aircrew, drivers, and others whose employment is intrinsically tied to long distance travel.

Under the consumption heading, a large proportion of moves involve the pursuit of pleasure. These are well documented in the tourism literature and take a wide variety of forms, ranging from visits to friends and relatives, through weekend breaks and annual holidays to extended recreational travel (see eg Hall and Page, 2002). Two groups who have attracted increasing attention in the wider literature are seasonal migrants (Longino and Marshall, 1990; Mings, 1997) and second home owners (Roseman, 1985; Hall and Müller, 2004). But absences from home may also be made to consume other services, such as education (Zelinsky, 1994) and while these moves are generally elective, others may be involuntary – as in the case of hospitalisation or incarceration.

Like work-related moves, travel for consumption varies widely in terms of frequency of trips, duration of stay and spatial patterns. What also emerges from the literature cited above is the great diversity of people involved in temporary movements of one kind or another.

Who moves? A framework for analysis

Following the earliest observations of Ravenstein (1885) and the systematic analyses by Thomas (1938; 1958), it is well established that mobility is a selective process. While the search for universal laws of migration selectivity has long been abandoned, empirical data confirm that certain characteristics predispose individuals to be geographically mobile. Perhaps the most consistent finding is the way in which the propensity to move varies with age (Rogers and Castro, 1981) but studies also point to a positive association between mobility and income, education and occupation, with further differences evident according to labour force status, marital status and housing tenure (see eg Shaw, 1975; Bell, 2002).

Explanation for these differentials is commonly sought by reference to the triggering force of key events. Migration is seen as a transition leading to a new steady state. Examples include events in the life course such as leaving home, formation of a partnership, and entering or leaving the labour force. This link between migration and life course transitions creates formidable problems for analysis based on fixed interval measures, such as the Census. This is because the Census records respondent characteristics at the end of the interval rather than at the time migration occurred. As a result, it is unclear whether the high mobility observed among certain groups, such as divorcees and the unemployed, is intrinsic to the status, or the product of a transition to that state. In short, interpreting migration differentials from fixed interval data is a perilous business.

This problem is less acute in the case of temporary moves; first, because the point at which

the characteristics are measured coincides with the time at which the move occurred (Census night); and secondly because temporary moves are less strongly tied to life course events. It follows that if temporary moves are selective of those with particular characteristics, this mobility can be more readily interpreted as intrinsic to those attributes. It is the attributes themselves, rather than some implied transition, that enable or give rise to the move.

The characteristics likely to facilitate or promote temporary mobility can be readily deduced from the types of movement identified in Table 1. Temporary moves for pleasure require freedom to travel and the resources to finance the trip. These may be reflected in a number of domains including an absence of family and housing commitments, minimal attachment to the labour force, and above average income. Similarly, hospitalisation is most common among infants and the aged, while travel for study and education is characteristic of children and young adults. Production-related moves, on the other hand, imply strong labour force connections but are likely to be selective of those in particular industries and occupations. Seasonal work, for example, is confined mainly to people employed in agriculture whereas conference travel is more common among professionals.

An important dimension likely to mediate selection is distance travelled. Greater distances generally imply longer durations of stay and hence more pronounced selectivity on the variables mentioned above. Seasonal migration to the sunbelt, for example, presumably necessitates a higher degree of freedom and more resources than a local overnight stay with friends or relatives. Some differentiation should therefore be expected in the characteristics

of temporary movers, with greater selectivity among long distance migrants. If it does occur, such differentiation assumes added significance because temporary mobility does not display the strong distance-decay that is characteristic of permanent migration (Bell and Ward, 1998). Bell and Brown (forthcoming) found that 29 per cent of people away from home on the night of the 2001 Australian Census had crossed a state or territory border compared with just 10 per cent of 2000-2001 permanent migrants. There were correspondingly fewer local moves within the Statistical Local Authority (SLA) of usual residence and intermediate moves between SLAs within the same state or territory.

Distilling these observations enables us to establish six discrete hypotheses which can be empirically tested:

1. As in the case of permanent migration, age will emerge as a primary determinant of the propensity to engage in temporary moves
2. Males will display higher rates of temporary movement than females
3. High mobility will be characteristic of professionals and executives, and of other specific occupational and industry groups
4. Income will exert a positive effect on mobility
5. Low attachment to family and housing will raise mobility
6. Selection effects on these variables will vary with distance travelled

Data and Methods

In Australia, one source that enables these propositions to be tested is the Census. The

window the Census provides on temporary mobility derives from the fact that while it is conducted on a *de facto* basis, information is also collected on each individual's usual address. In essence this means comparing responses to questions concerning place of enumeration with place of usual residence on Census night, both of which are coded to one of more than 1360 SLAs. Data on temporary mobility therefore emerge as a by-product of the Census rather than from a deliberate data collection strategy. On the night of the 2001 Census over 830,000 Australians (4.4 per cent) were enumerated away from their place of usual residence. Moreover, despite a shift in Census date in 1986 to minimise absenteeism (census date was moved to occur during school term), the incidence of this temporary movement increased by more than 100,000 persons (15 per cent) over the 15 years from 1986 to 2001.

The advantages and disadvantages of using the Australian Census to study temporary mobility have been well documented (Bell and Ward, 2000; Bell and Brown, forthcoming). It provides comprehensive coverage of the population, including those in both private and non-private dwellings; information is available at a fine level of spatial resolution; there are 46 multi-part questions which provide a wealth of information on the characteristics of temporary movers. One limitation is that the data provide only a snapshot of temporary mobility on a single night, which is not necessarily representative of other times of the year. The 2001 Census took place on Tuesday 7th August. While this mid-week timeslot eliminates weekend travel, it coincides with the height of the Australian snow season and winter sports holiday-making is at a peak.

The data used in this analysis are drawn from the 2001 Australian census micro-data from known as The Confidentialised Unit Record File (CURF), similar to the UK Sample of Anonymised Records (SARs). The CURF is a 1 per cent sample comprising 188,013 records for individuals in private and non-private (institutional) dwellings. The version used in this analysis, the basic CURF, contains 39 variables and is spatially disaggregated into 48 zones covering the whole of Australia (Figure 1).

Figure 1 here

We focus on a selected range of Census variables to capture the various attributes hypothesised to facilitate mobility. Age and sex are fundamental variables. Employment is captured by reference to labour force status, occupation and industry. The Australian Census also collects data on income and we use individual weekly income as the appropriate measure. Attachment to family and housing is more difficult to capture and we rely on registered marital status to distinguish the now married from those with less immediate ties. Movement distance is classified into three categories by reference to the types of statistical and administrative boundaries that are crossed. We define as local moves those that involve an overnight stay elsewhere within the zone in which the individual usually resides. Moves that cross a state or territory boundary are classified as long distance. The balance, those involving travel to another zone within the same State or Territory, are defined as intermediate moves.

The CURF, like the Australian census as a whole, includes System Created Records (SCRs)

that are invented to represent people thought to have been missed from the census count (ABS, 2002). SCRs have values imputed for age, sex, marital status and usual residence. The remaining variables are set to "not stated" or "not applicable". In 2001 the CURF contained some 4,500 (2.4%) SCRs. These are included in the simple models that use only the imputed variables but are excluded from more complex models.

Simple frequency counts are presented first to explore the characteristics of temporary movers. Analysis is then extended using multivariate Binary (Binomial) Logistic Regression, a member of the family of Generalised Linear Regression Models (GLM). The response, or dependent, variable in Binary Logistic Regression is always dichotomous, that is yes/no or present/absent. In this analysis the response is either "away from home" or "at home". The aim of this modelling process is to determine the likelihood of being temporarily away from home on census night, given a number of characteristics or predictor variables. Forward stepwise regression is used in SPSS with a significance level greater than 0.05 required for entry into the model and 0.1 for removal. The -2 Log Likelihood (-2LL) statistic is used to asses the fit of the model, where a greater reduction in -2LL from the null model indicates a better fit (Kleinbaum, 1994; McCullagh and Nelder, 1992). The model outputs reported are: significance levels, odds ratios (exponential coefficients) and their 95 per cent confidence limits. An odds ratio (including the lower confidence limit) that is above 1.0 indicates a positive relationship – a greater likelihood of being away from home in comparison to the reference group. An odds ratio (including the upper confidence limit) of less than 1.0 indicates the opposite – the individual is less likely to move.

Selection among temporary migrants

Table 2 reveals clear evidence of selection among temporary movers but the most pronounced variations are found when the data are disaggregated by type of move. The differences in age composition are striking. Local moves display a high concentration of young adults, a deficit of people aged 35-74, and an over-representation of those aged 75 or more. People moving elsewhere in the same state have a similar profile but with fewer children and larger proportions aged 45 and over. In contrast more than half of all interstate movers were aged over 45 and there was a marked deficit of children and young adults.

Table 2 here

These differences come into sharp relief when the data are graphed (Figure 2, Figure 3a-d). The profiles bear little resemblance to the standard age schedule of migration which peaks among young adults and falls away sharply at older and younger ages. Nor do they display the consistency of shape found among permanent migrants irrespective of distance moved (Rogers *et al.*, 1978). Instead, each type of move appears to be selective of particular age groups and all are characterised by strong sex differentials (Figure 3a). Coupled with the other characteristics in Table 2, these variations lend qualified support to the predictors of temporary movement hypothesised above.

Figure 2 and Figure 3 here

Long distance moves

In the interstate profile the massive bulge around retirement age clearly underscores the importance of freedom from work commitments and child-rearing responsibilities in facilitating long distance travel. Indeed, the volume of movement reflected here perhaps explains why the retirement peak commonly anticipated in the age profile of permanent migration is so rarely found. Seasonal moves may act as a substitute for, rather than as a precursor to, permanent migration (Pollard, 1996). Such moves almost certainly account for a substantial component of temporary interstate movement among retirees, but conventional vacations, 'round Australia' trips, family visits and other motives are no doubt also represented. Focussing on the data in more detail provides valuable insights. Most of the long distance moves involved retired couples: 76 per cent of temporary interstate movers aged 55 or over were currently married compared with only 63 per cent of the same age group enumerated at home, and 80 per cent were outside the labour force (73 per cent). However, income data dispel the stereotypical image of well-heeled sun-seekers. Income may be understated at the Census and is, in any event, a poor surrogate for wealth, but only one in six of this group (18 per cent) reported incomes of more than $600 per week and a third (30 per cent) cited incomes of less than $200. These proportions were similar to people counted at home (15 per cent and 32 per cent respectively).

In contrast with the retirees, the majority (57 per cent) of temporary interstate movers among adults aged between 15 and 54 were male. Seventy-five per cent of these men and 63 per cent of the women were in the employed workforce. They also reported higher

incomes (49 per cent earned more than $600 per week compared with 35 per cent of the same group enumerated at home) and were better qualified (62 per cent held degrees or diplomas compared with 56 per cent). People in management and the professions were strongly represented (55 per cent compared with 39 per cent of those counted at home) and an above average proportion (7 per cent compared with 5 per cent) worked in government administration or defence. The profile for this group clearly points to production-related moves for purposes such as business travel, conferences and conventions. Also apparent are the very low rates of temporary interstate movement among teenagers and young children, reflecting the constraints of schooling mentioned earlier (Figure 3d).

Intermediate distance moves

One third (33 per cent) of all people counted away from home were enumerated in another CURF region in the same state or territory. Peak movement occurs among young adults aged 15-24 years and retirees aged 55-74 years. For people aged 15-54, the over-representation of males (56 per cent) suggests that production-related moves are again important. Movers in this age group were more likely to be never-married (62 per cent compared with 41 per cent of those counted at home) but there was little difference in their labour force participation, income or occupation. Only in qualifications and industry is there some evidence of selection with lower proportions of people holding degrees or diplomas, but slightly more employed in mining.

At older ages there is little evidence of selection in income or labour force composition: only marital status shows some difference with widowed men and women over-represented

among intermediate distance movers (31 per cent compared with 21 per cent of those counted at home), and correspondingly fewer currently married. This may reflect the older average age of within-state movers but it also points to the very different motives for temporary trips among the very old. While within-state moves among retirees are almost certainly pleasure-oriented, at older ages mobility tends to be a product of necessity rather than choice (Rowland, 1996). Widowhood reduces family resources and may compel a relocation, either temporary or permanent, that might be avoided if a partner is present to provide support.

Local moves

Local moves were dominated by the young, aged 15-24 years, and the elderly aged 75 years and over (Figure 1b). For those at older ages, such moves probably indicate the need for care, institutional or familial, since most moves in old age reflect a loss of autonomy (Rowland, 1996). Fifty-three per cent of those aged 65 and over resided in non-private dwellings, but only 5 per cent lived in motels and hotels. The implication is that most are located in communal aged care accommodation. As in the case of intermediate moves, immediate family resources were important in avoiding absences from home; 42 per cent of those aged 65 and over away from home were currently married, compared with 55 per cent of people enumerated at home.

It would seem likely that the peak at younger ages, again, is explained by a combination of production- and consumption-related motives. While it seems improbable that such a large number of young adults would be away from home but within the same region on Census

night, the majority were located in the geographically larger or more populous areas where opportunities for overnight absences from home are greater. Most (90 per cent) were visitors in private dwellings.

In summary, considerable diversity is evident in characteristics such as age, marital status, income and occupation when temporary movers are disaggregated by distance travelled. The analysis thus far, however, has treated each variable in isolation. A more comprehensive understanding requires multivariate analysis. The following sections apply logistic regression to the data while introducing the added dimension of reason for travel.

Segmenting temporary movers

Although the Census does not ask why people were away from home, there are a number of Census variables than can assist in segmenting the population of temporary movers. As noted earlier, a key distinction in temporary migration is between moves that are made for production-related purposes and those driven by consumption. By definition, the former involve travel for work or business and therefore imply membership of the employed workforce. However, labour force status alone does not provide an adequate basis to distinguish the two forms of movement. This is because labour force status refers to the respondent's employment in the week prior to the Census. A more accurate basis for assessing the extent of production-related moves is provided by the question on travel to work, which refers to the day of the Census. Using these criteria, 44 per cent of the 8,064 Australian residents counted away from home in the 2001 CURF were employed, but only

70 per cent (2,447) of these reported working on Census day. This suggests that approximately 30 per cent of all temporary moves are work- or production-related. The remaining 5,617 moves we ascribe to motives associated with consumption. It should be noted, though, that purpose of trip is not recorded in the Census and so the disaggregation into production and consumption related migration is based on inference from labour force status and journey to work data, rather than from a specific question regarding purpose of trip. Furthermore we are unable to differentiate between single-purpose and multi-purpose trips, such as those that combine both work and leisure.

Travel for production

The analysis in this section focuses on the 2,447 temporary movers identified as away from home for work. These movers are initially considered as a group and then disaggregated by distance travelled. Short distance movers were the most common, comprising 38 per cent (917) of the total. Intermediate distance and long distance movers accounted for 35 per cent (864) and 27 per cent (666) respectively. The variables employed in the analysis are sex, age, income, marital status and industry. The reference category was defined as married males aged 25-34 working in the transformative sector (manufacturing and construction industries) and earning less than $200 per week. This reference category was chosen to represent a relatively large subgroup expected to display intermediate movement propensities. Only the variables that were significant in the logistic regression models are reported (Table 3).

Nearly three-quarters of production-related movers were male. This selection effect is

echoed in the regression modelling, females displaying a negative coefficient and an odds ratio of 0.7. In comparison to the reference group of 25-34 year olds, who are highly mobile, only 15-24 year olds were more likely to be counted away from home, though an odds ratio of 1.3 shows the difference to be marginal. The 35-44 and 45-54 age groups were less likely to be away from home, probably as a result of family commitments and lower representation in high mobility jobs. Both industry and occupation were used in separate regression models, but models that included industry showed the greatest reductions in -2 log likelihoods. Employment in mining or agriculture raised the probability of being away from home. The importance of family commitments is reinforced by the marital status variable. Individuals who were never married, divorced or separated were all more likely to be temporary movers than those in a registered marriage. It is not clear, though, whether the absence of family commitments is a cause of high mobility, or an effect. The data also reveal a steadily increasing likelihood of being away from home with increasing income.

These results deliver an image of production-related movers as young, single males in high paying jobs, especially in mining and agriculture. When temporary movers are disaggregated by distance travelled, this image is modified somewhat. Females are consistently less likely to be away from home, irrespective of distance moved. Income, marital status and industry also continue to influence movement propensities, but there is a marked shift in the magnitude of the odds ratios across the three categories of movement distance. Over short distances, income above a threshold of $400 per week raises movement propensities by a fixed ratio of around 1.6 to 1.9. As distance increases, the effect threshold rises and the gradient steepens. For moves over intermediate distances, the

odds ratio rises steadily with income from 1.4 for people on incomes of $400-599 to 3.34 for people earning $1,000 per week or more. For long distances the income threshold at which differences appear rises to the $600-799 category, and the odds ratio for the highest earners climbs to 3.89.

Marital status shows the opposite effect, with higher odds ratios for local travel. Here, it is the never married, together with the separated, widowed and divorced who display the highest ratios, indicating a propensity for local travel ranging from 2.6 to 4.9 times that of the currently married. These ratios diminish for intermediate distances, and for interstate travel it is only the never married (1.7) and divorced (1.5) who move significantly more than the reference group. Age has a similar effect. Over short distances age is a strong discriminator of overnight travel, with young adults aged 15-24 displaying a high likelihood of movement relative to the reference group, but lower travel propensities among those aged 35-64. At intermediate distances, however, only the 15-24 group stand out, while for long distance travel age ceases to be a significant variable in the model.

Industry of employment shows a more consistent effect with those working in extractive industries (mining and agriculture) displaying odds ratios above the reference category for most types of move, and a strikingly high ratio of 5 for mining workers travelling to a different zone within the same State. Also notable is the high odds ratio for long distance moves among individuals employed in Government Administration and Defence, undoubtedly reflecting mobility in the Defence Forces and the movement of public servants between states.

In summary, work-related temporary movers are consistently more likely to be male, earning higher incomes, maritally unattached and employed in extractive industries, regardless of distance travelled. Over short and intermediate distances they are more likely to be young, typically aged 15-34, but over long distances age is not a significant predictor. Interestingly, people employed in producer services, the rapidly growing group of professionals and executives that service global finance and information industries, were no more likely to be away from home than the reference group. This was unchanged when occupation rather than industry was included in the regression models.

Travel for Consumption

The following models consider the remaining 5,617 Australian residents identified in the CURF as being away from home on census night. They are grouped here under the generic heading of travel for consumption, simply as a residual category when work-related travellers are removed. Moreover, we make no attempt to pursue the distinction from Table 1 between people travelling for pleasure, and those away from home for other consumption-related purposes. Occupation and industry have less relevance to understanding consumption-oriented travel so these variables were excluded from the modelling process, but the broader concept of labour force status takes on added significance. While work clearly involves travel for some groups in the labour force, for others it is a constraint on opportunities to get away from home. We therefore anticipate higher rates of travel among the unemployed and those not in the labour force. The reference category was again defined as married males aged 25-34 earning less than $200

per week, and in this case defined as employed.

Initially considering all consumption related moves, irrespective of distance travelled, it is evident that sex is not significant (Table 4). Being male does not raise the likelihood of being a temporary mover as it does in the case of work-related travel. It is also evident that moves for consumption are not the exclusive domain of young people. Compared to the reference group of 25-34 year olds, the older age groups of 55-64 and 65-74 were 1.6 and 1.5 times more likely to be temporarily absent on census night respectively (Table 4). Marital status also emerges as a significant predictor of temporary moves, with those currently unattached most likely to be away. Income remains a significant variable with individuals earning more than the reference group more likely to be temporary movers, and the highest earners most likely to be counted away from home. Position in the labour force was also a significant characteristic with both the unemployed and those outside the labour force more likely to undertake a temporary move. This variable displayed by far the largest odds ratios, with the unemployed more likely to be temporarily absent by a factor of 5.8 and those not in the labour force by a factor of 4.4 compared to the reference group.

As in the case of production-related mobility, distinct differences emerge when the data are disaggregated by distance travelled. Like work-related moves, being aged 35 or over depresses the likelihood of local travel for consumption. Over longer distances, however, people in the early and immediate post-retirement groups (aged 55-74) were more likely than the reference group to be temporary movers. Marital status, too, exerts a different pattern of influence. Being unattached raises the potential for a local consumption-oriented

move, but its effects on longer distance moves are mixed and less pronounced, with the never married showing elevated mobility over intermediate distances but the widowed less likely to travel interstate. As with travel for work the separated group displayed the highest odds ratios.

Income exerts a positive effect on mobility over intermediate and long distances but the relationship is not as strong as for work-related moves, with odds ratios of 1.53 and 2.46 respectively for those earning $1000 per week or more. Equally striking is that income has only a limited effect on local moves, lifting the odds ratio among those in the $200-399 bracket. For consumption-related travel, it is employment status that emerges as the most significant variable, with both the unemployed and those outside the labour force displaying consistently high odds ratios for all distance categories.

Thus it is evident that the characteristics of consumption-related movers are distinctly different from those whose travel was work-related, but also that these characteristics alter with distance travelled. It is apparent the sex is not a discriminator for consumption- related moves, as it was not significant in any of the models. The importance of age varied with distance travelled: for local moves the younger age groups were more likely to be away from home, whereas over intermediate and longer distances the older age groups showed a greater propensity to travel. Increasing income was generally associated with a greater likelihood of moving, though this relationship was not evident for short distance travel and was less pronounced than for work-related travel. At the same time, it was notable that the unemployed and individuals not in the labour force had the highest odds ratios of all

groups, indicating the greatest likelihood for consumption-related travel. The effect of marital status was less clear, though all groups currently unattached were more likely than married people to move over shorter distances.

Discussion

The extent of temporary mobility recorded in the CURF is broadly consistent with the Australian Census as a whole. According to the 2001 CURF, a total of 8064 (4.3 per cent) of Australian residents were away from home on the night of the 2001 Census, which is close to the figure of 4.4 per cent from the Census as a whole. The initial analyses highlighted distinct differences in the characteristics of temporary movers compared both with non-movers and with those who registered a permanent migration. The regression models confirm and extend these findings.

In support of our first hypothesis, we found that age has a significant effect on the propensity to engage in temporary moves. However, the impact varies according to reason for move and distance travelled. Work-related travel was mainly the domain of young adults aged under 35, and age effects were most pronounced over short and intermediate distances. For longer distance moves, age was not significant in the model. The growth in business travel and other emerging forms of long distance mobility thus appear to involve a wide spectrum of age groups. Selection for local mobility at younger ages is more difficult to explain but these moves may in fact be unrelated to work, even though work occurred on the same day. The young also dominated consumption-related local mobility and together

these moves probably encompass a wide variety of purposes, including travel to education as well as visits to friends and relatives and related forms of travel for pleasure. In consumption-related travel over intermediate and longer distances, older age groups came to the fore. This is consistent with the hypothesised effect of greater personal resources and freedom from the constraints of work as preconditions for travel.

Males were more likely to be temporary movers, due to their pre-eminent role in work-related travel, thus supporting our second hypothesis. The predominance of men largely reflects their over-representation in specific industries and occupations which are themselves characterised by high mobility. However, the analysis provided only qualified support for our third hypothesis. The regression models demonstrated that people employed in mining and agriculture were more likely to be temporary movers than those in other industries, and that defence force personnel were also highly mobile over long distances. These results reflect the use of fly-in/fly-out mining operations to run remote mining sites (Houghton, 1993) and the persistence of seasonal work in agriculture (Hanson and Bell, forthcoming). More surprising was that employees in producer service industries such as finance and business, which include a high proportion of professionals and executives, did not display the frequent business traveller profile thought to characterise these occupational groups (Green *et al.,* 1999). While peripatetic professionals undoubtedly exist, their numbers are perhaps not sufficiently large to influence the industry average.

Our fourth hypothesis was that income would exert a positive effect on mobility. This has been shown to be largely, but not exclusively, true. For the general models that

encompassed all movers, there was a direct association between income and mobility, reflected in higher odds ratios. However, when moves were disaggregated by distance different trends were revealed. Income facilitated intermediate and long distance moves, both for work and pleasure. In the case of consumption-related moves, this reflects the need for extra income to finance more ambitious trips away from home. For production-related moves it is probably linked to the higher earning capacity associated with more mobile occupations. Both showed a strong positive association between income and mobility but this was especially pronounced for work-related travel. More surprising, perhaps, is that increased income exerted a negative effect on mobility for consumption-related purposes over short distances. This may reflect the fact that lower income groups have less security of tenure, and are more vulnerable to frequent, forced relocation.

Compared with the reference category of 'currently married', the higher odds ratios recorded for other marital status groups also provide qualified support for our fifth hypothesis regarding freedom from domestic responsibilities. The never married and divorced were more likely to travel intermediate or long distances for work, and the same was true for the separated over intermediate distances, and for all groups for local travel. However, the effects were weaker for consumption-related moves. Moreover, in the case of local moves unconnected to work, high mobility for some groups may reflect displacement resulting from household dissolution rather than the freedom to travel that underpinned our hypothesis.

Finally, distance was hypothesised to influence selection effects on most variables. The age

data clearly support this proposition, but all the variables considered here differ in significance according to purpose of move and distance of travel. This in turn underlines the substantial diversity in reasons for being away from home.

Conclusions

Like permanent migration, temporary mobility is highly selective of certain socio-demographic groups, but the characteristics of temporary movers differ in a number of respects from their permanent counterparts. In particular, temporary movers display a markedly different age profile and are more strongly selective of males. Moreover, while the age profile of permanent migration is remarkably stable, the composition of temporary movers varies radically according to the distance of travel. Long distance temporary moves tend to be especially selective of older age groups and those on higher incomes. What is also apparent is that mover characteristics alter with purpose of move.

The distinction between production and consumption is fuzzy at the margins and is further complicated as the disaggregation used in this analysis was based on inference from other, related, variables. As such, Australian Census data only permit a coarse distinction between the two motives for mobility. Nevertheless, the evidence assembled here does demonstrate clear differences in the characteristics that predispose individuals to travel for particular purposes. For work-related travel outside the local area, the most significant predictors are being male, maritally unattached, in a high income job, and working either in mining, agriculture, or government administration and defence. Travel for consumption shows more

balanced sex ratios but is selective of older age groups, and of those who are unemployed or outside the labour force. It too shows a strong relationship with income.

These variations in the composition of travelers reflect the extensive range of reasons that almost one in twenty Australians were away from home on Census night. Coupled with the distinctive spatial patterns described elsewhere (Bell and Brown forthcoming), these results point to a dimension of population mobility that has been largely ignored in previous studies, except in a fragmentary way. These temporary population movements not only maintain the settlement pattern in a continuous state of flux, but also act to shape and reshape the composition of the population in individual localities and regions. Such changes have far reaching implications for government and business, but they also present a formidable challenge for population modeling and estimation. What complicates the task is the complex, multi-dimensional nature of temporary mobility, involving, as it does, multi-destination trips of variable duration and indeterminate frequency, the incidence and patterning of which alter over a variety of time scales. The Census offers just one small, but intriguing, snapshot of this intricate network of population movement at a particular point in the year.

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Table 1: A typology of temporary moves and diagnostic attributes

	Production-related	Pleasure-seeking	Other Consumption
Reason for move	• Business travel • Long-distance commuting • Seasonal work	• Family visits • Excursions / vacations • Snowbirding / Sunbirding • Extended travel	• Conferences & conventions • Hospitalisation & respite care • Study and residential courses
Characteristics	• Low and High income • Professional/managerial • Specific industries • Males	• Financial resources • Freedom to travel • Low family attachment • Low labour force attachment	• Professional • Aged and disabled • Low family resources • Children & young adults

Table 2: Characteristics of people counted away from home by type of move 2001

Characteristic	Per cent counted away from home	Population characteristics by type of move (per cent)			
		Counted at home	Local	Intermediate	Long-distance
Age					
0-14	2.5	21.0	17.4	10.2	8.0
15-24	5.4	13.5	22.4	18.0	10.3
25-34	5.0	14.5	19.2	16.7	15.1
35-44	3.6	15.4	12.2	13.1	12.6
45-54	3.8	13.8	8.7	13.0	14.5
55-64	5.9	9.3	6.5	13.6	18.1
65-74	6.4	6.7	5.3	9.3	15.5
75+	5.1	5.8	8.3	6.1	5.9
Total	4.3	100.0	100.0	100.0	100.0
n=	8064	178072	2652	2676	2736
Sex					
Males	4.7	49.1	53.1	54.5	52.7
Females	4.0	50.9	46.9	45.5	47.3
Marital status (persons 15 and over)					
Never married	5.6	31.2	48.8	37.2	25.7
Widowed	5.2	6.2	8.3	7.0	5.4
Divorced	5.6	7.4	8.8	8.8	8.3
Separated	6.5	3.4	6.6	4.4	3.4
Married	4.0	51.8	27.6	42.6	57.2
Weekly income (persons 15 and over)					
Less than $200	4.5	29.4	29.3	28.5	26.4
$200-$399	4.8	23.0	25.8	21.3	23.7
400-599	4.1	17.4	17.9	13.6	13.9
$600-$799	4.7	11.8	11.1	12.8	11.0
$800-$999	4.9	7.0	7.0	8.0	6.9
$1000+	6.0	11.3	9.0	15.8	18.0
Total	5.2	100.0	100.0	100.0	100.0
Labour force status					
Employed	4.3	58.6	54.6	54.8	48.3
Unemployed	6.1	4.5	7.8	5.1	5.1
Not in labour force	5.3	36.8	37.6	40.1	46.6
Total	4.7	100.0	100.0	100.0	100.0
Occupation					
Managers & professionals	4.7	39.6	36.7	41.5	55.6
Tradespeople	4.6	12.7	14.4	15.4	11.9
Clerical/service workers	3.4	30.6	25.8	26.7	20.8
Production and transport	4.0	8.3	9.8	8.2	5.5
Labourers & related workers	4.4	8.8	13.2	8.1	6.2
Total	4.2	100.0	100.0	100.0	100.0
Industry					
Transformative	4.2	20.1	20.7	20.4	18.2
Govt. Admin. & Def.	5.1	4.4	3.6	5.2	7.1

Consumer	3.8	19.9	17.3	18.2	18.1
Distributive	3.5	26.8	24.9	21.8	20.4
Agriculture	7.1	3.8	8.5	4.7	7.0
Mining	14.9	0.8	2.7	4.4	2.1
Personal	4.7	8.9	10.9	11.0	8.2
Producer	4.1	15.2	11.3	14.3	19.0
Total	4.2	100.0	100.0	100.0	100.0

Source: ABS 2001 Census CURF

Table 3: Binary logistic regression outputs for production related moves

Category	Variable	All Cases		Local		Intermediate		Long-distance	
		Odds Ratio	95% C.I.	Odds Ratio	95% C.I.	Odds Ratio	95% C.I.	Odds Ratio	95% C.I.
	Constant	0.014**		0.006**		0.00**		0.00**	
Sex	**Female**	0.70**	0.64-0.77	0.75**	0.65-0.88	0.62**	0.53-0.73	0.73**	0.61-0.88
Age	**15-24**	1.30**	1.13-1.49	1.22**	1.00-1.49	1.43**	1.14-1.79		
	35-44	0.81**	0.71-0.91	0.69**	0.57-0.85				
	45-54	0.78**	0.68-0.89	0.60**	0.47-0.76				
	55-64			0.55**	0.40-0.76				
	65-74								
	75+								
Income	**$200 - $399**	1.25**	1.02-1.52						
	$400 - $599	1.44**	1.12-1.74	1.60**	1.22-2.11	1.40*	1.00-1.96		
	$600 - $799	1.81**	1.49-2.21	1.59**	1.19-2.14	2.23**	1.59-3.12	1.56*	1.06-2.30
	$800 - $999	2.23**	1.80-2.75	1.86**	1.35-2.56	2.56**	1.78-3.67	2.20**	1.47-3.29
	> $1000	2.92**	2.39-3.56	1.64**	1.20-2.25	3.34**	2.37-4.72	3.89**	2.68-5.63
Marital Status	**Never Married**	2.01**	1.84-2.33	2.59**	2.13-3.15	2.12**	1.75-2.57	1.70**	1.43-2.02
	Widowed			2.88**	1.50-5.55				
	Divorced	2.26**	1.94-2.63	3.32**	2.60-4.24	2.16**	1.69-2.78	1.46**	1.09-1.95
	Separated	2.89**	2.40-3.48	4.88**	3.71-6.43	2.85**	2.09-3.87		
Industry	**Govt. Admin. Def.**							1.70**	1.23-2.35
	Consumer								
	Distributive	0.84**	0.74-0.95						
	Agriculture	2.01**	1.65-2.44	2.67**	2.02-3.52			2.04**	1.40-2.97
	Mining	3.53**	2.76-4.52	3.11**	1.98-4.89	5.04**	3.60-7.06	2.27**	1.39-3.73
	Personal								
	Producer			0.71**	0.55-0.91				
Reference Category		**Male, 25-34, <$200, Married, Transformative Industry**							

* *p-value of 0.05 or less*
** *p-value of 0.01 or less*

Table 4: Binary logistic regression outputs for consumption-related moves

		All Cases		Local		Intermediate		Long-distance	
Category	**Variable**	**Odds Ratio**	**95% C.I.**	**Odds Ratio**	**95% C.I.**	**Odds Ratio**	**95% C.I.**	**Odds Ratio**	**95% C.I.**
	Constant	0.001**		0.00**		0.00**		0.00**	
Sex	**Female**								
Age	**15-24**								
	35-44	0.71**	0.62-0.81	0.67**	0.53-0.84	0.66**	0.52-0.83	0.78**	0.63-0.96
	45-54			0.54**	0.41-0.71				
	55-64	1.64**	1.45-1.85	0.69**	0.53-0.90	1.76**	1.43-2.17	2.36**	1.96-2.85
	65-74	1.51**	1.33-1.73	0.65**	0.50-0.86	1.40**	1.11-1.77	2.44**	2.00-2.98
	75+								
Income	**$200 - $399**	1.23**	1.13-1.34	1.25**	1.07-1.46			1.38**	1.21-1.57
	$400 - $599	1.22**	1.09-1.37					1.61**	1.36-1.91
	$600 - $799	1.53**	1.32-1.76			1.39**	1.09-1.77	2.11**	1.73-2.59
	$800 - $999	1.44**	1.20-1.73			1.42*	1.05-1.93	1.74**	1.33-2.28
	> $1000	1.76**	1.52-2.05			1.53**	1.18-1.98	2.46**	1.99-3.03
Marital Status	**Never Married**	1.31**	1.19-1.46	2.14**	1.76-2.61	1.40**	1.17-1.67		
	Widowed			1.67**	1.31-2.14			0.58**	0.47-0.72
	Divorced	1.14**	1.00-1.28	1.86**	1.45-2.38				
	Separated	1.28**	1.08-1.51	2.86**	2.16-3.78				
Labour Force Status	**Unemployed**	5.76**	5.03-6.59	7.49**	5.89-9.53	4.43**	3.48-5.64	5.48**	4.37-6.87
	Not in Labour Force	4.39**	3.97-4.85	5.27**	4.31-6.45	3.96**	3.33-4.70	4.17**	3.58-4.87
Reference Category		**Male, 25-34, <$200, Married, Employed**							

** p-value of 0.05 or less*
*** p-value of 0.01 or less*

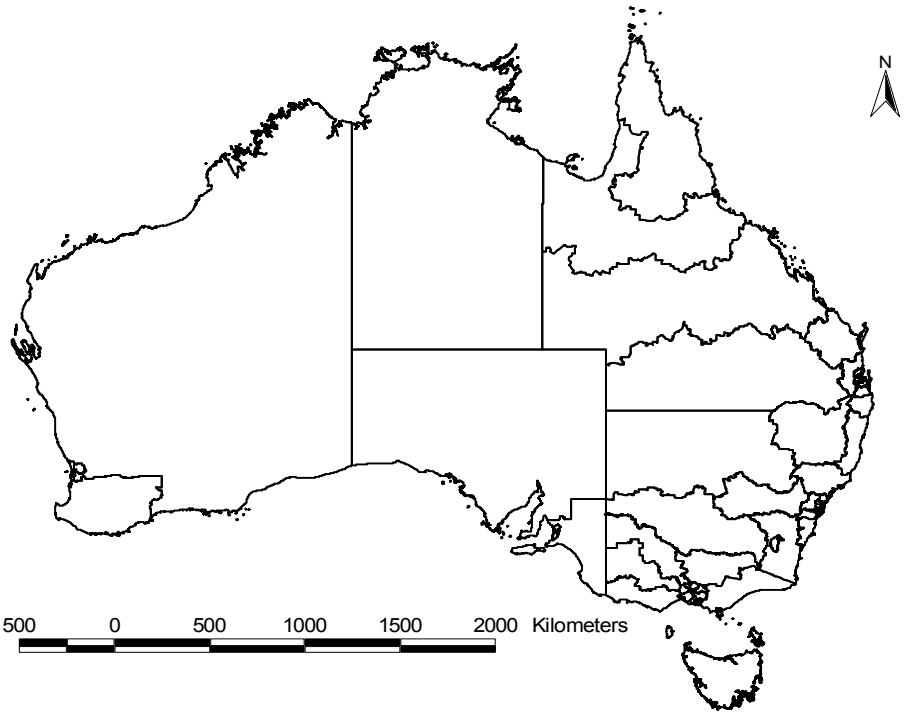

Figure 1: The 48 Basic CURF Regions in Australia

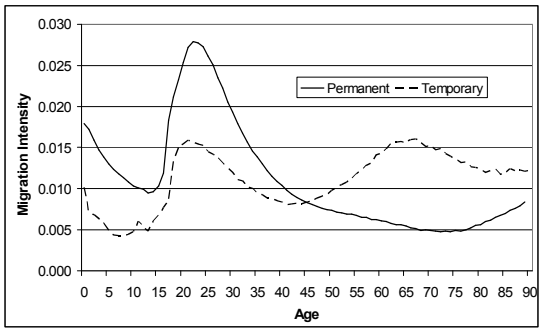

Figure 2: Age profile of temporary movers (2001) and Permanent migrants (2000-20001), standardised by total number of movers/migrants, Australia, 2001

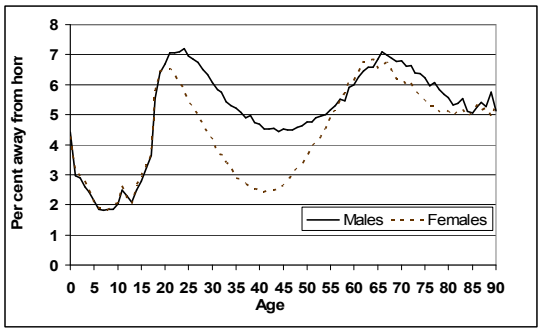

Figure 3a: Age profile of all temporary movers in the CURF

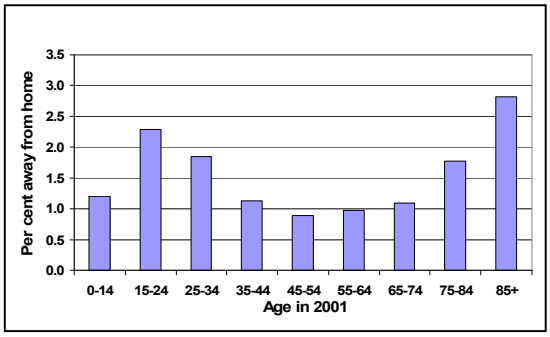

Figure 3b: Age profile of local temporary movers, Australia, 2001

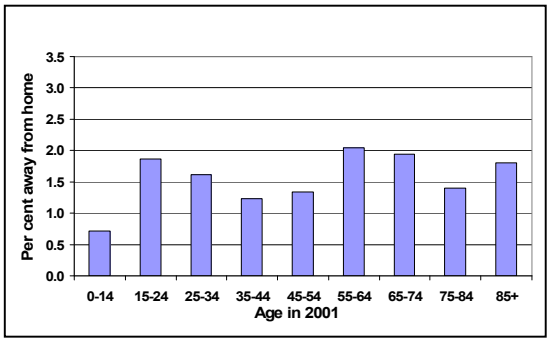

Figure 3c: Age profile of intermediate temporary movers, Australia, 2001

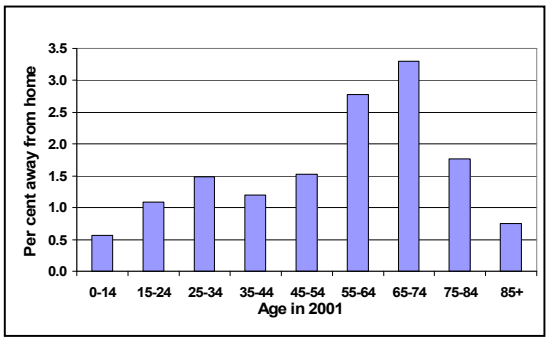

Figure 3d: Age profile of long distance temporary movers, Australia, 2001