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1 INTRODUCTION

This Essay asks whether housing, loneliness and health are connected in contemporary Australia, and if they are, is it a nexus that can be addressed positively through housing policy. Since loneliness has only recently emerged as a generalised and disturbing feature of contemporary societies, there is practically no evidence of housing policy that addresses it explicitly or directly. It will be argued that high and increasing rates of loneliness are relevant to future housing policy, not least because housing, loneliness and health *are* interlinked. Loneliness is highly distributed socially and spatially but has remained largely hidden and difficult to detect (Franklin & Tranter 2008). Research on loneliness, housing and health offers policy-makers a timely opportunity to broaden housing policy to address a major social structural problem of our time with considerable scope to increase wellbeing and social vitality. While recent housing policy has focused on building social cohesion, social inclusion and reducing social isolation in areas characterised by social disadvantage and marginalisation, recent research on loneliness demonstrates that these policy objectives have become relevant to a much wider set of cultural settings, sectors of the built environment and places. This Essay argues that housing policy designed to address a more evenly distributed and yet pernicious form of contemporary loneliness with momentous ramifications for health and wellness, cannot rely on simply extending social contacts or social networks, since as Bauman (2000; 2003), Putnam (2000) and many others have argued, the current epidemic of loneliness is not about social connectivity and the net quantum of social interactions (which for many has actually increased) but about the *quality* of the social bonds enacted and maintained. A recent Australian Research Council-funded research on loneliness among older people in residential housing was entitled 'Alone in a Crowd' (Jaworski & Moyle 2008) and reported on how residential propinquity can be converted into social bonds that *matter*, endure and enrich. This, in a nutshell, is the challenge for housing policy makers on a much wider scale. Not all of the causes of loneliness are linked directly to housing, although the fastest growing and soon-to-be dominant housing form, single person housing, certainly is. Much of what we know about the contemporary loneliness epidemic (see Franklin 2009) is related to profound and deeply rooted aspects of social structural change. Nonetheless, the lived experience of loneliness has a housing context, is spatially concentrated in some places, and is located in some housing types and tenures more than others. Loneliness is also endured, mostly in isolation, inside the four walls of a home. Loneliness is also related to specific kinds of housing biographies and careers and therefore it is implicated, amplified and, potentially *ameliorated* by certain kinds of housing processes, all of which can be addressed by evidence-based housing research and policy.

This Essay begins by setting out the historical contexts in which loneliness connects with central tenets of housing policy. It then outlines the theoretical and substantive dimensions of loneliness in contemporary societies, the reasons for its alarming growth in recent years, its distribution and impact, its potential to spread and its profound consequences for health. We use data from a recent survey of loneliness, housing and health conducted specifically for this essay, to see where policy might intervene.

Levels of loneliness on a scale we are witnessing in Western urban contexts today are arguably unprecedented and therefore the stakes and the potential pay-offs from interventions will be high. Loneliness poses one of the most exciting challenges for housing policy-makers in a very long time.

2 THE POLICY RELEVANCE OF LONELINESS

2.1 Housing policy and loneliness

Housing policy has always been concerned as much with fostering local social solidarities as with providing adequate shelter. In countries with British cultural antecedence such sentiments were in evidence from the model industrial communities and 'model housing' of the nineteenth century through to such ideas as garden suburbs and community housing in the twentieth century. It was recognised through this period that modernity always threatened to disrupt traditional social ties and that new living arrangements should seek to recreate them.

Nonetheless, a period of relatively settled industrial development in towns and cities produced discernible urban communities. These were studied in the 1950s and 1960s when they themselves were undergoing the churning effects of major post-war redevelopment and change. While new suburban development recognised the need to build community structures, it was feared that the new towns and more socially mobile working populations would leave behind a more socially isolated elderly population in older city quarters. Here then, in the 1960s and 1970s, were the social scientific beginnings of a concern with loneliness and social isolation.

In studies of loneliness, the operational definition of loneliness has changed considerably from one study to another and from one discipline to another. The earliest sociological studies took social isolation to cause loneliness if it radically reduced the numbers of social contacts in a person's life and there was an associated decline in their social support. Indeed, such was this association that loneliness was not measured *directly* but through proxy measures, the two most important being the number of social contacts and the degree of social support received. Hence a lonely person was defined as anyone with a very low score in both of these measures. Such concerns (and measures) drove new policy making for housing the elderly and providing state forms of aged care and services that were intimately tied to their housing (Weiss 1975; Townsend 1975). The use of proxy measures was justified on the basis that the experience of loneliness carried a social stigma and respondents would under-report loneliness if the word was directly used in a question. In the 1970s there were some prescient sociologists, including Harvard-based Philip Slater, who noted just how *voluntary* and *willing* our self-exile from others was as *a general feature of mainstream society* (Slater 1970) but at the time this idea was not developed further.

Earlier psychological studies of loneliness began with the idea of social isolation as a growing problem in society, but argued that once recognised or perceived, it could be experienced *emotionally* and be evaluated positively or negatively (Ettema et al. 2010, p.2). The positive experience was called solitude, and was recognised as highly valued and important. It was seen as chosen, purposive and delivering benefits such as enjoyment of one's own company, reflection, self-knowledge, and creating important time for decision-making (Tillich 1980). Loneliness was defined as the negative emotional experience of social isolation, which involved a 'mentally distressing and physically stressful way of feeling and being alone' (De Jong Gierveld & Raadschelders 1982; Ettema et al. 2010, p.3).

In recent years, the analysis of social change in modernity identified an important shift occurring approximately in the mid-1970s, leading some to identify a new era of modernity. For some this was best captured by the term post-modernity (Harvey 1989) but more recently the term liquid modernity is considered to be a better metaphor (Bauman 2000). Bauman's work specifically identified an intensification of

those processes that encouraged individualism in modern societies, as arising from new technologies, consumerism, the extension of rights and freedoms, greater mobilities and neoliberalism, and he began to write of a resultant weakening or loosening of former, more solid social bonds. Writing in this later sociological tradition, Franklin and Tranter defined loneliness as an unpleasant emotional and physical feeling arising from the absence of commitments to enduring social bonds. They specifically used the world lonely in their survey questions because, despite the risk of under-reporting it was important not to confuse the presence of social relationships and vibrant social contact with an absence of loneliness. They posed the possibility that loneliness could be experienced within busy social lives, noting also that some studies had discovered loneliness commonly existing within marriages (Franklin & Tranter 2008; Kiley 1989; Stack 1998).

Recent loneliness research has shown that this tangible emotional experience is not linked to the net sum of social contacts a person has but to their *quality*. For example, several studies confirm a widespread discrepancy between an individual's loneliness and the measured number of connections in their social network (Berscheid & Reis 1998; Perlman 2004; Rokach 2004; de Jong Gierveld & Havens 2004; Franklin & Tranter 2008; Mellor et al. 2008; Cacioppo et al. 2009). If loneliness can be defined as 'unpleasant feelings that arise when an individual perceives a discrepancy between their desired and existing social relationships' (Perlman 2004), then it is a subjective experience not linked to conditions of aloneness or predicted by objective indicators (Mellor et al. 2008). Social psychologists such as Mellor et al. (2008) have demonstrated empirically that most people need a minimum number of lasting, positive and significant interpersonal relationships that provide a sense of belonging. When these needs remain unmet a person descends into loneliness and '[t]hus a failure to have belongingness needs met may lead to feelings of social isolation, alienation, and loneliness.' Worryingly, their research has shown that 'people living with others have just as many unmet belonging needs and are just as lonely as people living alone'. In other words, what are missing in a widespread sense, are qualitatively/emotionally satisfying relationships, not relationships per se.

Hence, sociological and psychological studies have recently placed increasing emphasis on the quality of the social bond, and this reverses previous conceptions in that new types of low-quality relationships are seen as actually producing social isolation, not the other way around. Under these circumstances the policy tools available to ameliorate loneliness cannot remain the same, notably to reconnect people. Instead, the emphasis would have to be on either coping with more lonely lifestyles, or building stronger forms of social bonds that are compatible with contemporary social and economic circumstances.

While Mellor et al (2008) refer to a universal human need for strong social relationships that deliver a sense of belonging that endures unconditionally, the social theory of contemporary 'liquid' modernity, Zygmunt Bauman (2000; 2003; 2005), suggests that such strong social bonds, of the sort delivered by tradition and by previous eras of modernity, have fragmented to the point where loneliness has become a social structural feature of our times. Neither the outcome of poor housing design nor management, the root causes are deeper-lying, more distributed and ironic:

> … it has become more difficult to commit ourselves to precisely the sort of relationship we still crave as lonely people. We have reached a point where the social relations of marriage, family, community, neighbourhood, even friendship etc., *persist* yet lack their previous bond-like qualities. (Franklin & Tranter 2008).

For instance, in relation to the Australian suburb, Lyn Richards (1991, p.179) showed that 'many were socially isolated but few craved community'. Stack (1998) discovered loneliness to be very common inside marriages; Franklin and Tranter (2009) found loneliness to feature strongly among respondents who described themselves as 'very sociable' and those in de facto relationships; Jaworski and Moyle (2008) found older Australians typically 'alone in a crowd' and Sawir et al. (2007, p.12) found that *all* of their lonely sample of international students in Australia had dense social networks (they too report: 'It is not the quantity of networked relationships but the *quality*').

As the social composition of social housing changed in outer isolated suburbs as well as inner areas of the 1980–90s city, a new raft of social problems prompted policy-makers to investigate their capability to deliver social cohesion. The explicit thinking here was that although poverty, anti-social behaviour, crime, unemployment, transience and domestic fragmentation and turbulence created new forms of social isolation, the social organisation, management and design of housing was implicated in its solution.

Social inclusion emerged as a policy in the late 1990s to address poverty and social inequality (Arthurson & Jacobs 2004)—as well as fear. Social exclusion relates to loneliness conceptually in that social isolation was identified as one of four main ways in which the socially excluded are unable to participate in 'normal' activities (Turok 2008). In this context, social isolation is taken to mean the possession of limited networks for support and advancement and low integration into the wider social fabric. 'Residential sorting' in the housing market and allocation policies in social housing can participate in social exclusion by creating segregation and spatial isolation on housing estates. Policy initiatives tended to favour the creation of more mixed (especially tenure) communities and 'livelier' public spaces as well as neighbourhood regeneration to create a better social tone (or 'quality place-making') (see Franklin 2010). Turok's (2008) review of evidence suggested that the quality of design, careful management and the targeting of appropriate spaces were areas relevant for Australian policy. Social inclusion policies began in many Australian states in the 2000s and, although the emphasis was mostly directed at *exclusion*, research showed important links between social cohesion, individual and family health and wellbeing, and community function (Hulse 2008). Housing impacted on health through processes associated with affordability and stress, security and privacy, housing mobility and instability, as well as location (access to services etc.). Phibbs (2005) identified a potent stress factor in 'inappropriate housing' and the benefits of managed improvement. Other Australian research found inconclusive evidence for the benefits of social mix on social cohesion (Arthurson 2002) or for any necessary relationship between bad neighbourhood and reduced life chances (Atkinson & Kintrea 2002), leading Arthurson and Jacobs (2004) to cast some doubts on the usefulness of social inclusion as a policy tool, or at least a special link with housing that can be addressed through policies confined to housing alone.

If social inclusion was a problematic term, *social cohesion* seemed to offer a more tangible and housing-focused objective for housing policy, particularly in seeking ways to improve life in public housing estates. Research by Hulse and Stone (2007) stressed two main policy dimensions: that social connectedness might be *strengthened* and social differences and divergences might be *reduced* through housing policy. They found a positive correlation between tenure and most indicators of social connectedness, with renters having less attachment to area, less neighbourhood trust and cooperation and less of a shared sense of identity with their place of residence. Being a renter is also negatively associated with feelings of attachment and belonging (Hulse & Stone 2007). As Hulse and Stone (2007, p.viii) argued: 'The type of housing a person lives in, their experience of it, as well as their

legal relationship to it, to varying degrees and in various ways, do appear to influence the way a person interacts with and feels about others.' In addition, there appeared to be viable policy tools to address the problem. Healthy and affordable housing would improve social connectedness through addressing inequalities; housing policy would improve social connectedness and feelings of belonging by enabling people to 'put down roots', if necessary by changing their tenure relation; and housing policies could set about improving places since the quality of place is directly related to social connectivity.

Loneliness relates to policies for, and research on, social cohesion in Australia precisely because it was informed by HILDA (The Household, Income and Labour Dynamics in Australia Survey) data on *social connectedness* and this specifically includes a question on loneliness in a wide-ranging 10-item battery of questions. However, as we shall show below, this was unfortunate, because to aggregate responses on loneliness with other questions on social support and social network size, is to compound (rather than distinguish) variables that are actually very different. This illustrates an important problem with measuring loneliness. The most widely used measure is the UCLA Loneliness Scale (Russell 1996) and this combines variables on social network size and degree of interaction with degree of social support. Questions using the word loneliness are avoided since it is known that this leads to under-reporting; however, not to use the term loneliness that refers to a tangible experience risks using proxy registers to produce an abstract or compound measure that may or may not relate to loneliness as it is felt and experienced.

These abstract notions (social cohesion, community, social inclusion) are warranted by a basic assumption that locally well-connected individuals with solid ties to place are happier and healthier that those less so. But has this assumption ever been adequately tested, and how can this be reconciled against so many studies that illustrate a deepening and entrenched individualism predicated on increasing freedom which is linked to reluctance to commit to enduring social bonds?

2.2 Scale and growth

While concern for loneliness among the elderly has not abated and still drives the largest single research effort on loneliness, surveys by Perlman (1990) in Canada, Flood (2006) and Franklin and Tranter (2008) in Australia, and the Ministry of Social Development (2006) in New Zealand have been warranted by concerns for rising rates of loneliness in other age groups.

According to Andersson's review of studies of loneliness up to the late 1990s (1998, p.267), many seem to agree that 'at least one person in four reports loneliness to occur constantly or fairly often and around 25 per cent of the population currently appear to be lonely from most nationally representative samples in Western societies.'

Alarmingly, recent surveys have begun to show dramatic increases. Studies of loneliness in later life conducted in the last half of the twentieth century show that the numbers reporting loneliness sometimes or often/always have increased from 20 per cent in 1948, to 36 per cent in 1984 and to 43 per cent in 2001 (Victor et al. 2005, p.32).

Perlman's (1990) summary of surveys concludes that 'loneliness was highest among young adults, declined over midlife, and increased modestly in old age.' However, Flood's (2005) Australian study shows that some types of individuals and groups in society are bearing the brunt of this so-called 'new epidemic' (see Franklin 2009) and that in some respects Australia may be different. Franklin and Tranter (2008) found over 33 per cent of those aged 24–45 reporting 'loneliness to be a serious problem for

them at times'. Put another way, one-third of both Australian men and women in the so-called 'prime of life' have experienced loneliness as a serious problem.

It was in this 25–44-year age group that Flood (2005, pp.vii–ix) first showed how *men* are especially vulnerable to becoming and remaining lonely, but particularly if they live alone. Men living alone have poor social exchange or material reciprocity with neighbours and report the worst emotional, physical and mental health. Most extraordinary of all, the loneliness and social isolation of these men remains the same regardless of whether they have been recently separated from a partner or not. While Flood shows how Australian men are (asymmetrically) emotionally dependent on their wives and partners, Franklin and Tranter (2009) have demonstrated how it is that once lonely they are less able to 'bounce back' than women. They have also shown that separated women are only 2.3 times more likely to be lonely than married women while separated men are 13 times more likely to be lonely than married men (2009, p.11). In our latest survey 29 per cent of women reported loneliness as a serious problem as compared to 35 per cent of men in this age band.

2.3 Loneliness and health

Caciappo et al. (2009, p.978) cite scientific investigations demonstrating that loneliness is directly associated with Alzheimer's disease, obesity, increased vascular resistance, elevated blood pressure, increased hypothalamic pituitary adrenocortical activity, sleep disorders, diminished immunity, reduction in independent living, alcoholism, depression, suicidal ideation and behaviour, mortality in older adults, and elevated cholesterol and blood pressure in later life among adolescents. Mellor et al. (2008, p.214) cite further studies linking loneliness negatively to life satisfaction, and subjective wellbeing and to a literature linking high levels of loneliness to higher levels of psychological distress and low levels of psychological wellness.

According to Geller (2000), lonely people are four times more likely than others to have a heart attack, and four times more likely to die from it. Significantly perhaps, 'smokers are only twice as likely as non-smokers to die from a heart attack' (Gellner 2000, p.3). Further, loneliness doubles the chance of catching a cold, is correlated with behavioural problems including sleep problems, disturbed appetite as well as backaches, headaches and nausea (Geller 2000; Stack 1998; de Jong Gierveld 1998; Fees et al. 1999). Lonely people use emergency services 60 per cent more often than the non-lonely, and as elderly people, are twice as likely to be admitted into nursing homes (Stack 2000, p.2).

2.4 Spreading loneliness

While there are general underlying conditions that create a vulnerability to loneliness, recent research shows that loneliness has *contagious* qualities. Cacioppo (2009) proved that as individuals fall into loneliness their social circle and social bonds frequently begin to fragment as they withdraw and fail to maintain quality relationships. Over time this compounding tendency can reduce the connectivity and loneliness of their immediate social network and begin to spread out to other areas. Their analysis confirms that up to three degrees of separation can be 'infected' by the spread of loneliness and also that the edges of social networks are particularly vulnerable. They suggest that 'efforts to reduce loneliness in our society may benefit by aggressively targeting people on the periphery to help repair their social networks and to create a protective barrier against loneliness that can keep the whole network from unravelling' (2009, p.977). These findings may have particular bearing on addressing loneliness through housing policy, since there may be a close correspondence between the peripheries of social networks and housing areas

characterised by high levels of transfer and movement, and some peripheral parts of the housing market.

2.5 Loneliness and housing

In our 2009 survey (see Appendix 1 and Tables A1–A4) we discovered that housing tenure, particularly for those in private rented and public housing, is strongly associated with experiencing loneliness on a frequent basis.[1] For example, only 4 per cent of those who own their own home experience loneliness on a daily basis, compared to 13 per cent of private renters and 11 per cent of public housing tenants. However, those in public housing are much more likely than other tenures to experience loneliness on a regular basis. This is clearly apparent in that only 27 per cent of public tenants rarely or never experience loneliness, compared to 39 per cent in private rental, 53 per cent of mortgagees and 62 per cent of those who own their own homes outright. It is unlikely that a tenure 'causes' loneliness per se, but we note that loneliness is being concentrated in certain tenure forms rather than others and this may also denote some spatial concentration, with possible ramifications for the spread and compounding of loneliness and its capacity to cause poor health.

Housing tenure is also associated with loneliness experienced as a serious problem (Table A1). There appears to be a clear divide in this instance between those who own their own homes, either outright or with a mortgage, and those living in rental accommodation. Renters tend to experience loneliness more acutely. For example, 11 per cent of private renters strongly agree that they experience loneliness as a serious problem. When strong agreement and agreement are combined it is apparent that public housing tenants (47%) are much more likely to see loneliness as a problem, compared to private renters (31%), mortgagees (21%) and home owners (19%).

Household size is related in a curvilinear pattern, the most staggering finding being that almost half of single households (40%) agree that they experience loneliness as a *serious* problem.

Housing tenure is also clearly associated with health in our data. Those living in public housing score 42 points on a 0–100 health scale compared to mortgagees on 66 points, home owners on 60 points and private renters on 59 points. Contrary to the ideal of the healthy country lifestyle, better self-assessed health is associated with living in inner metropolitan areas of large cities, with lower scores in small towns and rural villages. The commonly held view of the socially isolated, mobile and privatised middle classes is also challenged by this new data. While having a tertiary degree is associated with more frequent loneliness, those who claim to be 'lower class' are most frequently lonely, while the upper middle (combined with upper) are least often lonely (data on income triangulates with this impression).

Table A2 suggests that age, housing tenure, partner status, social class and health status are important predictors of loneliness in Australia. While the legal status of tenure is not significant as a primary cause of loneliness, what remains significant for our purposes here is how public housing gathers together and spatially focuses those predictors of loneliness and those who suffer from it most.

Not surprisingly, self-rated health is a strong predictor of loneliness. Those in poor health are almost five times as likely as those in good or excellent health to experience loneliness frequently, and close to four times as likely to experience loneliness as a problem. Another way to express this (see Table A4), is that women

[1] We also present results for the 'other' category, but as this is a mixed group that is not clearly defined, do not refer to it in the analyses.

who experience loneliness frequently are approximately 2.4 times less healthy than women who don't, while lonely men are about twice as unhealthy as non-lonely men.

The conclusion we can draw from this exercise is that loneliness, housing and health are connected, although further research needs to show precisely how.

2.6 Discussion linking housing, loneliness and health

Housing policy can address the nexus between housing, loneliness and health because:

- Loneliness is generated by certain kinds of housing arrangements (e.g. single person households/dwellings).
- Literature supports the idea that many lonely people become concentrated in certain types of housing and certain areas or tenure categories, particularly in rented accommodation and in public housing estates.
- There are certain types of people who appear to be very prone to loneliness and this might be targeted through housing policies designed specifically to help them.
- Households in the 25–44-year age range seem to have specific problems based on the implications of relationship breakdown and subsequent housing arrangements (see Franklin & Tranter 2008).

The next section suggests the possible ways in which policy-makers might develop specific forms of intervention.

3 DEMOGRAPHIC GROUPS AT RISK

3.1 Persons in single person dwellings

Many of the recent loneliness studies were prompted by the dramatic growth in demand for single person dwellings. Lone person households increased from 18.8 per cent of households in 1986 to 24 per cent in 2001 (Australian Institute of Family Studies 2006) and are projected to increase from 1.8 million to 3.7 million in 2026—a rise of 105 per cent (ABS 2005).

Fleming (2007) shows that there are now more single person households in Australia than those made up of couples with children, but also that single person households now comprise between one-third and one-half of most Western cities. Another way of looking at this is the number of people living in lone person households as a proportion of the total population of Australia. Jian et al. (2004, p.7) showed how this has increased from 6.5 per cent in 1986 to 9.3 per cent in 2001 and is projected to become over 15 per cent by 2026.

Our study also shows that loneliness in Australia is highly concentrated in single person households and, as Bennet and Dixon (2006) show in the case of the UK, the policy implications are profound. Aside from compounding poverty and inequality with implications for worklessness, they identify health and social care issues alongside implications for community development. 'More single person households, particularly male ones, are likely to increase demand for health and social care services. Social isolation is associated with an increased risk of mental health problems, and people living alone are less likely to be able to rely on informal care provision (Bennet & Dixon 2006, p.39). Precisely because lonely people generally (and men in particular) lose confidence in social encounters, policies to increase existing community facilities for social interaction may not work as well as initiatives that are developed for their specific needs. Here, one policy initiative, 'Men's Sheds' may be adapted by others that address other lonely groups. Men's Sheds, a federally funded men's health initiative, has been a notable success. By creating a space and activities in which men feel comfortable and sociable, the initiative has been able, as they say, 'to support the social interaction of men in transitional periods (e.g. redundancy, bereavement, retirement, ill health, relocation, divorce, respite care) in a non-exclusive, non-judgemental way' (Men's Sheds 2010). Because many of these are events that precipitate episodes of loneliness, Men's Sheds is a rare example of an initiative that anticipates as well as addresses the specific needs of lonely people in Australia. In the English case, Bennet and Dixon (2006, p.35) discovered that people living alone spend more time volunteering than other groups, and they argue this kind of activity translates into 'higher levels of community participation and may result in higher levels of social capital (p.36). Seen in this light, programs such as Men's Sheds may be capable of addressing both health and social care policy objectives as well as policies to improve community development.

Single person household dwellings, particularly in the form of blocks or apartment buildings, rarely include any shared or communal areas. The success of much, if not all, student accommodation may prove to be useful here precisely because universities and colleges want their buildings to encourage some sharing of space and a rapid and successful integration into community life. Shared spaces, and responsibilities for them, provide exactly what is often missing from relationships: an enduring, binding common interest. Some examples from private and public developments, though not typical, might prove useful to study further, particularly those that 'build-in' such features as common or communal gardens, barbeque areas or shared rooftop leisure spaces. Equally, housing and health agencies can combine

to make sure that areas in which there are high densities of single person households have medical facilities and staff trained to identify people at risk from loneliness.

Research also shows that pet ownership can substantially reduce loneliness levels among single people, the elderly and children (Garrity & Stallones 1998). A recent national survey (Franklin 2006) found that the key reason for obtaining a dog, cat or bird in Australia was for company. Eighty per cent of married and de facto households chose dogs for their company. Contemporary pet-keeping has been shown to respond to transformations in family and lifecycle change (Franklin 1998). In divorced or separated households the proportion buying dogs for company rose to 88 per cent, in widowed households to 90 per cent and among the retired 91 per cent. On average, 88 per cent thought that the animals they keep were part of their family.

Importantly, Franklin et al. (2006) show very robust evidence for the health benefits of living with companion animals (although the effect is far stronger for dogs than cats):

> There is considerable evidence to show that companion animals can be highly beneficial to human wellbeing. In 1992, Anderson et al. found that in a survey of those attending a cardiovascular screening service in Melbourne, pet owners reported significantly fewer visits to doctors and significantly less consumption of specified medications (for high blood pressure, high cholesterol, sleeping difficulties or heart problems). Pet owners had "significantly lower systolic blood pressure and plasma triglycerides than non-owners" but the two groups "did not differ in body mass index, socio-economic indicators, or smoking habits" (Jennings et al. 1998, p.163). Moreover, pet owners in the study ate more meat and take-out food. Since then numerous international follow-up studies have largely confirmed these findings (Headey 1999; Friedmann et al. 2000).

Headey and associates (1999) replicated Anderson's survey and found similar results: pet owners made significantly fewer visits to doctors and used significantly less medicine. Using 1994–95 Medicare expenditure and assuming that all recurrent health expenditure can be divided up proportionately to the number of doctor visits people make, Headey (1999) calculated the saving to be $988 million, which was 2.7 per cent of the nation's health expenditure.

However, those moving into single person accommodation are finding restrictive covenants against pet-keeping to be widespread in social housing as well as private rented accommodation, which is where loneliness in Australia is also most concentrated. According to Newby (1996):

> Rental agreements and bodies corporate compound the problem. Most opt for a 'no pets' clause. And this trend is impacting most heavily on precisely the wrong group. Small dwellings and rentals are preferred by people who live in pairs or alone—exactly the group most likely to benefit from animal companionship. Housing concerns are undoubtedly major contributing factors to the counter-intuitively low levels of pet ownership seen in the over 65 age group. As our population ages until fully a quarter of the population is over 65, the disparity can only become more obvious. It is early stages yet, and we are really only looking at warning signs, but to see the potential impact housing policy has on pet ownership you only have to look at the reasons Australians currently give for not owning a pet. It's not because they don't want them—only 2 per cent of those surveyed in National People and Pets said they don't like pets. The number one reason given for not having a pet is restrictions due to housing.

Here then, is a clear case where housing policy can make a demonstrable difference to the experience of housing and the health of residents. In the absence of human co-householders, dogs in particular are very effective in curbing if not eliminating the experience of loneliness. Policies that promote and encourage private landlords and public housing authorities to allow the keeping of a dog would make a huge difference to both social and health outcomes, with the added bonus that research has also shown that walking dogs is effective in creating enduring relationships between owners (Laurier 2006; Serpell 1999). Finally, it is important to note that Australia is very dog-unfriendly in its housing policy and practice, In New York and Paris, for example, the restrictions on keeping a companion dog are far fewer and some agents specialise in letting to dog owners (Franklin forthcoming 2011).

3.2 Public and private renters

Lonely Australians are disproportionately concentrated in these two tenure categories and both have some spatial characteristics in the geography of the city. Loneliness is often sparked by relationship breakdown or life cycle/work-related issues and their movements, together with the circumstances of their movements, contribute to the social tone of localities and may even be implicated in the spread or deepening of loneliness in certain places.

Policy initiatives that seek to enhance the possibility of interaction, engagement and belonging will be helpful, but since loneliness specifically relates to personal circumstances and biography, policy-makers also need to find ways of identifying and helping individuals. Here a coordinated approach between housing and health professionals would seem an obvious starting point, beginning with the availability of information and advice and extending to counselling and other forms of case-based help. Model approaches currently exist in some institutional and residential settings, for example at the University of Illinois at Urbana-Champagne and in residential homes for older Australians. Loneliness in late adolescence/early adulthood and old age has been recognised for a long time and forms of intervention have been trialled and implemented. The challenge facing housing policy-makers in Australia is to innovate or modify a set of such interventions for other age/housing groups, especially the 25–44-year-old renters where such peaks of loneliness are now found (Franklin & Tranter 2009), although in our latest survey reported here, both this group and the 18–24-year-olds have elevated levels of loneliness experienced as a serious problem.

3.3 Gender, loneliness and housing careers

Since so many people suffering loneliness have had their relationships with significant people and their social circles disrupted or terminated, and since this so often results in the fragmentation of households, the relevance of housing to them may be in their *history of forced housing moves* rather than the house that a social survey happens to find them in. As we have seen from two independent studies, while the incidence of loneliness is evenly distributed between the genders, the experience of it and particularly the incidence of it as a serious and chronic problem is highly uneven, with Australian men suffering more, and for longer, than women. Surveys (particularly Franklin & Tranter 2009) that asked respondents about strategies to resolve loneliness, offer only a tantalising glimpse of this unfolding disparity, but new research must investigate how women are more insulated from loneliness and why their strategies are more effective. Flood (2005) seems right to conclude that emotionally, 'women need men less than men need them' but what we do not know is the way in which women organise 'quality bonds' outside of their marriage and the way men fail to do the same. Nonetheless, we found that not living with a partner increases loneliness for men and women. Equally we do not know why it is that women are able

to recognise and resolve their loneliness in ways that men do not. It seems as though men have a lot to learn from women. Since we do not know how housing factors into this emotional turbulence, we need to see if there are any specific housing processes and configurations that contribute to these outcomes. For example, are men more likely to move out of family homes than women? Do they mostly form single person households? Do these moves take men away from previous social networks and the sources of support they need during these times? What impact does moving away from partner and children have on the *distanciated* man (distanciation here carries the sense of spatial *and* social disembeddedness, see Henning 2007)?

3.4 Older Australians

Despite being a more established field of research, studies of older Australians have not focused on the specific nexus between their housing, their loneliness and their health; indeed, the most recent ARC-funded study (Jaworski & Moyle 2008) was among the first to set out from the premise that loneliness was a function of the quality of relationships as opposed to 'being alone'. In their conclusion they argue that policies and practices need to be developed that create *relationships that matter* rather than mere co-presence in the form of day rooms, social activities, outings and so on. While much has gone into various forms of the latter, creating strong social bonds is a new and innovative policy aim that is entirely consistent with the best of contemporary research reviewed here.

In longitudinal studies of older people and heart disease, for example, it was found that survival rates and medical interventions following an infarct were substantially reduced if the patient had a good relationship with a dog (Anderson et al. 1992). However, according to Wood (2009, p.31) 'many people are reluctant to enter retirement communities unless they can bring their pets yet few Australian retirement communities have strategies in place to successfully integrate residents' existing pets, let alone plans to cater for new ones.' Other studies (such as Dykstra et al. 2005, p.742) that have rigorously tested most predictive variables of loneliness in older persons, argue that far more research needs to be done on 'accommodation processes'.

3.5 Housing and younger adult Australians

Given men's susceptibility to loneliness in later life and the increased likelihood of several episodes of loneliness across the lifespan regardless of gender, it seems appropriate to make people aware of its dangers, risk factors and solutions in their early adult life when they first encounter it. Colleges, universities, armed forces and other institutions that house or advise young people on accommodation are well-placed to make interventions, in terms of environmental designs, as well as advice, information and counselling. The secrecy and stigma attached to loneliness is clearly out of proportion to the sheer numbers of people who experience it and yet there is still very little attempt to normalise and de-stigmatise, let alone equip young people to deal with it. Research needs to establish the various housing pathways through which loneliness in early adulthood passes, in advance of trialling both design and management strategies.

3.6 Migrants and refugees

Australian migrant studies consistently feature the figure of the 'lonely arrival', often in advance of their partner, children or family. This applies as much today and includes the more complicated process of refugee resettlement as well as much larger numbers of overseas students. The loneliness experienced by new migrants and refugees is often of a different order and magnitude and may relate as much to

homesickness and cultural isolation, and include overt and subtle forms of discrimination and racism (Sawir et al. 2007). Equally, pathways to recovery may require different forms of initiative. As Hay (1994) showed in the case of 1950s migrants from southern and eastern Europe, sports clubs formed around national ethnicities often provided advice and resources on everything from housing to work, education and emotional support. Similar groupings may be best placed to intervene more specifically on loneliness.

3.7 Aboriginal people and loneliness

Under an initiative called *Social and Emotional Wellbeing in Aboriginal Communities*, the National Aboriginal Community Controlled Health Organisation (NACCHA) published the results of some research on 'Understanding Isolation and Loneliness in Aboriginal Communities' in 2006. They explored the implications for loneliness of isolation from culture, family, place and land as well as the precise nature of their physical and emotional forms of loneliness. Among urban Aboriginal groups there was a keen loss of community identity, a lack of solidarity, an erosion of a sense of belonging to a Mob, an erosion of a hitherto supportive kinship system, as well as a greater sense of focus on self and individualistic values. Despite this, the family was identified as a 'core unit' where the strongest bonds are forged and in recent years this has been undermined, especially by factors such as the custodial care of children, death and disability, the stolen generation, behaviour within families not all of which is acceptable, and geographical mobility. Drugs and alcohol, some behaviours and family/kinship breakdown, were seen as the key risk factors, while protective factors included addressing the risk factors, as well as local community organisations (CBOs), including the Aboriginal Medical Service, sports groups, churches, and women's groups (ACCHA 2006). The Australian Survey of Social Attitudes (AuSSA) (King 2006) survey that was used in our empirical survey of loneliness in Australia does not record ethnic identity and so did not pick up on Aboriginal patterns across Australia. However, the study cited above suggests that in addition to culturally specific forms of loneliness (and culture constitutes one of the *expectations* about desired or anticipated forms of engagement and belonging as used in recent definitions of loneliness and in this study) and those factors that cause isolation from family and Mob, some urban-living Aboriginal people may be exposed to the same decline in the *quality* of social bonds, even where they have family and social networks around them. It would be important to understand this further, perhaps by looking more intensively at urban locations where there are distinct concentrations of Aboriginal people, to understand the degree to which they are protective against loneliness. It would also be important to see whether culturally sensitive medical services such as the Aboriginal Medical Service could serve as models for delivering advice and counselling on loneliness in other communities, as well as monitoring the health of lonely individuals.

3.8 Homeless people

According to many homelessness researchers (Rokach 2005a; 2005b; Crisis 2010; Reichenbach 1998), social isolation and loneliness often *precedes* becoming homeless (which means addressing loneliness among the non-homeless through new policy initiatives may help the homelessness problem) and that loneliness is one of the most feared health conditions among homeless people. Homeless people are not only widely shunned, they actually spend a very large part of each day entirely alone and their loneliness becomes part of a significant element in their on-going housing crisis and their low health status. Here then is yet another important link between loneliness, housing and health. Addressing homelessness is a clear element in the National Affordable Housing Agreement, but then so too is identifying and doing

something about ‘people at risk of experiencing homelessness’ through ‘being supported by quality services’ (Commonwealth State and Territories Housing Ministers (2009, pp.6–43). Policy initiatives here might include training in coping with and ameliorating loneliness for those who provide services to homeless people, as well as alerting housing, medical and social workers to the dangers of homelessness among those presenting with and enduring patterns of loneliness. Again, Men’s Sheds (see 1.18, p.9) might prove to be a useful ‘model vehicle’ for interventions in this field.

3.9 Single parents

Single parents in Australia consistently feature as the loneliest Australians of all. There are no specific studies of loneliness among single parents but this Essay suggests that many factors compound their vulnerability to loneliness and inhibit strategies that others are able to pursue. Given their growing significance as parents of young Australians and their long-term parental role, it would seem appropriate to investigate further their special circumstances and needs.

4 CONCLUSION

This Essay is less about a small social problem that requires a remedial set of social policy initiatives than a major social structural change that is beginning to have a major impact on mainstream Australian society. Loneliness has complex demographic, sociological, technical, psychological and cultural origins and this essay suggests it will have major ramifications for housing and health and requires policies that anticipate it and plan effectively for it, as well as policies to help us cope with it. This essay suggests strongly that the demographic, social structural and cultural drivers of contemporary loneliness are deeply rooted and cannot be easily avoided, but with careful forward planning some of the worst implications of a more loneliness-prone society can be avoided. With more research and experimentation with policy levers and interventions, we can help people cope with it more effectively. As demographers Jain et al. (2004) warn us:

> … there will be a substantial increase in one-parent families and a large increase in the number of people living alone, forming their own households, in the future. The average household size and the average family size are projected to decline which may affect the future demand for goods and services in the country. There will be a large pool of people who would be living alone and society would need to look for their welfare and provide facilities to accommodate them into the wider Australian society (Jain et al. 2004, p. 20).

This in essence is the policy challenge posed by contemporary loneliness in Australia.

This essay has shown that loneliness in Australia is already a significant but complex problem that affects far more *types* of people than it did in the past, with profound implications for health and wellbeing. In our latest (2009) survey we found 35 per cent of Australian men and 29 per cent of Australian women reporting that loneliness is a serious problem for them. On average these people report being more than twice as unhealthy as those who are not lonely, and some vulnerable groups in society suffer even more than this (the homeless for example). Unless policy makers intervene it will remain a largely hidden (the symptoms present themselves rather than the causes) but costly problem and will only grow if the Australian Bureau of Statistics is correct in their prediction that the proportion of single person households continues to rise over the next twenty years. However, as we have seen, it is not simply the numbers living alone that determine the problem we face. As Bennett and Dixon (2006) show, even in multi-person households people are doing more things alone and spending more time alone. In addition, as Franklin and Tranter (2009) show, close domestic relationships that have always been relied on as the building blocks of our sense of emotional and social attachment and belonging, have weakened and loosened. Contemporary de facto relationships have also been shown to be ineffective protection against loneliness.

Loneliness studies continue to point to the profound problem of loneliness in old age and despite having recognised this problem for over twenty years, very little systematic or effective policy initiatives have reduced it. As Australia also faces an ageing society, this problem, which for many remains a housing policy challenge with profound health consequences and costs, must surely command more attention.

More recent loneliness studies have exposed men (particularly those aged 25–44) to be especially vulnerable, particularly when they are separated from partners and family, but as we found in our 2007 survey, Australian men also find it hard to talk about and *do* something about their loneliness. At present, loneliness is widely

perceived to be an adverse reflection on character. It is stigmatised and researchers have proved that people avoid talking about it. This attitude can be changed, not least because our research has shown how we are *all*, as members of a highly individualised society, vulnerable to loneliness at various (if not all) points in our lives (see Bauman 2000). It is not a personal failing but a feature of our social structure. While this essay has argued that we cannot perhaps repair the damage done to hitherto enduring and solid social bonds, we can at least recognise our loneliness and do more to help those who suffer from it. It is relevant for housing policy makers precisely because housing is so intricately involved in its *experience*, its *concentration* in spatial and tenure terms, and its environmental development.

Housing is therefore a critical point of identification and intervention and this essay stresses that the next stage in developing the first national strategy to address it must be in terms of researching its origins, pathways and resolution, as well as identifying and trialling forms of intervention. Recent initiatives in housing policy bode well for tackling a *social structural* problem that is neither confined to social housing nor marginalised groups, but is likely to affect everyone at times through the life course. It seeks a broader contribution that housing and urban development can make to wellbeing and a healthy and happy society. As the Commonwealth, State and Territory Housing Ministers (2009) argued, for example:

> Housing policy in Australia over the last ten years has been confined within the parameters of the former Commonwealth State Housing Agreement which focused almost entirely on social housing. The National Affordable Housing Agreement broadened the scope of housing policy to include other key portfolio areas such as planning and transport. The Agreement also provided a vehicle to support wider national objectives, regarding social inclusion, assistance to people in the private rental and home ownership markets, integration between housing and other services, and on addressing Indigenous disadvantage (Commonwealth, State and Territory Housing Ministers 2009, p.14).

The National Affordable Housing Agreement affirms the need for joined-up programs that improve outcomes for a range of housing-related issues and clearly policies to tackle loneliness would be a good program to develop. Loneliness causes homelessness, its contagious qualities mean it can spread, particularly around the edges of social networks, reducing social participation and social cohesion. Loneliness is directly implicated in a range of serious mental and physical health problems and it is most concentrated in particular tenure groups. Loneliness very significantly correlates with particular household types, notably single person households and lone parent families, both of which are increasing as a proportion of all households. It is especially worrying for marginal groups, the homeless, refugees and new migrants, Aboriginal people and lone parents. Loneliness is concentrated among the very oldest members of society, an age group that will increase very significantly as a proportion of the total Australian population. This is surely why Phibbs and Thomson (2010) have identified the impact of housing on loneliness as a possible project to develop for joined-up policy research on housing and health.

Precisely because loneliness has become such a significant blight on the lives of the young as well as the old, working Australians as much as the unemployed, those in outer suburbs as much as the inner city, it challenges policy makers, planners and builders to think about the city in new ways. If past cities were largely family-focused and designed to foster family wellbeing and health, how can we now design cities that foster robust social connections, belonging and attachments to a population that live increasingly alone and face the problem of loneliness regularly through their lives?

This is not merely the responsibility of landlords, although it is in the interests of a broad range of people and organisations to be able to re-imagine their city for changing social and cultural circumstances. Ultimately this is the only way to provide sustainable, liveable cities that work well for their inhabitants.

The complex relationship between housing and loneliness that has been identified in this essay suggests that we develop policies that address housing pathways, biographies and careers. Since housing interacts with changing household relationships and the spatial recasting of social networks, the real issues become the sorts of outcome they produce over time and space. Area-based policies, while important, need to be supplemented with dynamic network or system approaches. Another way of putting this is that while older models of community and lifestyle were based on sedentary models and outcomes, increasingly these have to be thought through for a more mobile and flexible society (Urry 2000). Therefore, it has never been more important to understand and improve the ways people can enter, access and navigate pathways through their housing and to develop portable policies within public housing.

This may require new innovations and more roles for community and tenancy management with overlapping agencies involved in wellbeing, housing and health.

This essay strongly suggests that policies need to deploy the great potential of community-based health organisations such as Men's Sheds and voluntary sector organisations. Lone person households and lonely people generally volunteer more than others and this can be exploited in new initiatives designed to build more confident, enduring relationships and attachment/belonging. Here there are roles for church, leisure, sporting and other organisations that may be in a position to know the specific cultural dimensions of loneliness in their communities.

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APPENDIX

Appendix 1: Loneliness, housing and health in contemporary Australia: a survey

Here we present 'highlight results' of a 2009 survey of loneliness, housing and health specifically designed and executed for this essay. .

The data analysed in this research were collected via a survey of Australian adults (n=1502), in the 2009 AuSSA, a national mail-out, mail-back survey based upon a systematic sample drawn from the Australian Electoral Roll.

Several dependent and independent variables are analysed here. Loneliness measures are used as key dependent variables. Loneliness is conceptualised in terms of its frequency of occurrence and in terms of the extent to which it poses a serious problem. Two questions are operationalised to measure loneliness: 'How often do you personally experience loneliness in your life?' and 'Loneliness has been a serious problem for me at times…'.

We also examine self-assessed health measured using the following questions: 'In general, would you say your health is…' The self-assessed health question has been found to be a valid measure of actual health (Burstrom and Fredlund 2001; Idler and Benyamini 1997).

Independent variables include house tenure, sex, age, class and post-secondary education.

Frequency of loneliness

Three tables are presented initially to show the bivariate associations between the loneliness and self-assessed health dependent variables, housing tenure and a range of independent variables. In Table A1 the frequency of loneliness is shown. Housing tenure, particularly for those in private and public housing, appears to be strongly associated with experiencing loneliness on a frequent basis. For example, only 4 per cent of those who own their own home experience loneliness on a daily basis compared to 13 per cent of private renters and 11 per cent of public housing tenants. However, those in public housing are much more likely than other tenures to experience loneliness on a regular basis. This is clearly apparent in that only 27 per cent of public tenants rarely or never experience loneliness, compared with 39 per cent in private rental, 53 per cent of mortgagees and 62 per cent of those who own their own homes outright. It is unlikely that a tenure 'causes' loneliness, but we note that loneliness is being concentrated in certain tenure forms rather than others, and this may also denote some spatial concentration, with possible ramifications for the spread and compounding of loneliness. Household size is also associated with loneliness. Living in a single person household is related to the most frequent experience of loneliness (i.e. once a day or more), although the frequency of loneliness does not decrease in a monotonic fashion.

Little difference is apparent on the basis of gender. However, several other variables are strongly associated with the frequency of loneliness. Loneliness is higher among the younger cohorts. Twenty-eight per cent of 18–24-year-olds experience loneliness once a week or more compared to 13 per cent of those aged 65 or over. Having a tertiary degree is associated with more frequent loneliness. Self-assessed social class is also related to loneliness. Those who claim to be 'lower class' are most frequently lonely, while the upper middle (combined with upper) are least often lonely. Finally, those who are single, divorced or widowed are most frequently lonely.

Loneliness as a problem

Housing tenure is also associated with loneliness experienced as a serious problem (Tables A1 and A2). There appears to be a clear divide in this instance between those who own their own homes, either outright or with a mortgage, and those living in rental accommodation. Renters tend to experience loneliness more acutely. For example, 11 per cent of private renters strongly agree that they experience loneliness as a serious problem. When strong agreement and agreement are combined it is apparent that public housing tenants (47 per cent) are much more likely to see loneliness as a problem, compared to private renters (31 per cent), mortgagees (21 per cent) and home owners (19 per cent).

Household size is related in a 'U-shaped' pattern, with single households (40 per cent) most likely to agree that they experience loneliness as a problem, followed by those in the largest households (27 per cent). The upper middle class are associated with the lowest levels of loneliness as a problem, with loneliness most acute in the 'lower' class. Divorced and widowed people experience loneliness most severely as a problem.

Health

Turning now to Tables A3 and A4, the quality of self-assessed health declines with the frequency of loneliness and health is poorer among those who experience loneliness as a serious problem. Health is measured on a scale here where poor health scores zero and excellent health scores 100. Those who strongly agree that loneliness is a serious problem score 49 points on the health scale, while those with strong disagreement score 69 points, a substantial difference. Similarly, those who daily experience loneliness score 44 points on the health scale, compared to 65 points for those who are very rarely or never lonely.

Housing tenure is also clearly associated with health in these bivariate analyses. Living in public housing scores 42 points on the health scale, compared to mortgagees on 66 points, home owners on 60 points and private renters on 59 points. Contrary to the ideal of the healthy country lifestyle, better self-assessed health is associated with living in inner metropolitan areas of large cities, with lower scores in small towns and rural villages. Age and social class are clearly important indicators of health as expected, while being widowed is related to much lower health scores than other marital statuses, at least partly because of age-related factors. Higher levels of education and income are linked to better health scores, although gender accounts for very modest differences.

Multivariate analyses

Given that the variables discussed so far are interrelated, we now turn to multivariate analyses in a series of logistic regression models to show how these factors are related to the frequency and seriousness of loneliness in the multivariate case (Tables A2–A3), and how loneliness, housing tenure and social background predict self-assessed health (Table A4).

The regression results in Tables A5 and A6 suggest that age, housing tenure, partner status, social class and health status are important correlates of loneliness in Australia. Two models are presented for each dependent variable to show the impact of housing tenure, household size and social background (Model 1) then controlling for health status in Model 2.

Age effects are strong, particularly so for the frequency of loneliness. Loneliness is more frequently a problem among younger cohorts, even after controlling for a range of other factors. Living in rental accommodation is also associated with more frequent

loneliness, and with loneliness as a serious problem, although this appears to be somewhat related to health. When health variables are introduced to the regression equations on Model 2, public housing still shows a positive effect but is non-significant at the 95% level, as is the class variable for loneliness as a serious problem. While the legal status of tenure is not significant as a primary cause of loneliness, what remains significant for our purposes here is how public housing gathers together and spatially focuses those predictors of loneliness and those who suffer from it most. However, not surprisingly, self-rated health is a strong predictor of loneliness. Those in poor health are almost five times as likely as those in good or excellent health to experience loneliness frequently, and close to four times as likely to experience loneliness as a problem. Another way to express this (see Table A4), is that women who experience loneliness as a serious problem are approximately 2.4 times less healthy than women who aren't lonely, while lonely men are about twice as unhealthy as non-lonely men.

In Table A4, frequency of loneliness and loneliness as a problem are modelled by splitting the regression analyses by sex. Some interesting effects are apparent here. First, the monotonic age effects extant in Table A1 vary slightly, particularly among men. Women exhibit stronger age-based effects than men. Not having a partner is associated with somewhat higher odds ratios for men than women on the frequency-dependent variable.

Finally, in Table A7 we present the results of regression analyses that show health status as an ordinal dependent variable, and age, tertiary education, high income, housing status, household size, marital status, location, social class and loneliness (both frequency and as a problem) as predictors of health, with the sample split by sex. Once again we present two models. However, on this occasion loneliness variables are added to the models in Model 2.

The results show different age patterns of health for men and women, with younger women much more likely to be healthy than older women, while much weaker age effects are apparent for men. Having a degree is associated with better health for both men and women. High income is also a significant predictor of good health, but only for men, while being married is linked with better health among women, but not men for whom the effects are in fact negative, although non-significant at the 95% level. Importantly, these results show that women in public housing are far less healthy than women home owners or mortgagees, even controlling for their income, age and other factors, but the effect for men in public housing is not significant at $P < 0.05$. Finally, class location not surprisingly, is a marker of health status, with 'lower' or working class men and women less healthy than their middle class counterparts.

Appendix 2: Tables

Table A1: Frequency of loneliness and social background (per cent)

	Once a day +	Once a week +	Once a month +	Once a year +	Less often/never
Own home	4.4	10.7	10.4	12.8	61.8
Mortgage	3.5	10.8	15.8	17.5	52.5
Rent private	13.3	12.7	14.5	20.2	39.3
Rent public	11.4	31.8	20.5	9.1	27.3
Other	8.2	23.8	18.9	14.8	34.4
(P < 0.001)					
Household size					
1	16.9	20.6	13.8	12.7	36.0
2	3.8	10.4	10.4	16.8	58.5
3	4.5	11.3	15.4	13.6	55.2
4	3.3	12.0	20.7	16.2	47.7
5	4.9	14.6	10.7	13.6	56.3
6+	6.8	11.4	20.5	15.9	45.5
(P < 0.001)					
Rural village	4.0	20.0	9.3	12.0	54.7
Town < 10,000	10.3	8.1	14.7	19.9	47.1
Town < 10,000+	8.6	8.6	16.1	17.2	49.5
Town 25,000+	3.5	12.8	18.0	15.1	50.6
Outer metro 100K+	6.6	14.0	13.4	13.9	52.3
Inner metro 100K+	3.9	10.7	12.9	16.8	55.6
(P = 0.019)					
Women	6.3	11.5	11.7	14.3	56.2
Men	5.3	13.8	15.1	16.2	49.7
(P = 0.065)					
18–24	6.9	21.6	19.6	25.5	26.5
25–44	6.7	14.0	17.4	16.0	45.8
45–64	5.2	13.4	13.8	14.2	53.5
65+	5.3	8.1	8.1	14.0	64.5
(*P* < 0.001)					
Degree	6.6	13.4	13.6	13.5	53.0
Less than tertiary	3.9	10.9	14.0	20.0	51.2
(*P* = 0.008)					
$78,000+ personal income	1.5	9.1	9.6	20.7	59.1
<$78,000	6.5	13.8	14.5	14.1	51.1
(*P* < 0.001)					

	Once a day +	Once a week +	Once a month +	Once a year +	Less often/never
Lower	26.2	19.0	21.4	9.5	23.8
Working	6.7	18.6	16.0	13.8	44.9
Lower middle	7.0	14.8	16.3	16.7	45.2
Middle	4.2	10.6	12.6	15.5	57.1
Upper middle	2.6	5.8	9.0	17.5	65.1
(*P* < 0.001)					
Single	12.0	21.9	18.2	16.7	31.3
De facto	6.3	10.3	13.5	19.8	50.0
Married	2.5	8.8	11.7	15.5	61.5
Divorced	13.7	20.2	22.6	15.3	28.2
Separated	6.9	20.7	3.4	17.2	51.7
Widowed	13.9	22.8	11.4	5.1	46.8
(*P* < 0.001)					

Source: AuSSA (2009)

Table A2: Loneliness as serious problem and social background (per cent)

	Strongly agree	Agree	Disagree	Strongly disagree
Own home	4.4	14.7	38.8	42.1
Mortgage	3.8	16.8	38.8	40.5
Rent private	10.8	20.5	41.5	27.3
Rent public	6.7	40.0	40.0	13.3
Other	9.8	19.7	44.3	26.2
(*P* < 0.001)				
Household size				
1	10.9	29.0	36.3	23.8
2	5.0	16.3	38.0	40.7
3	3.2	17.2	40.7	38.9
4	5.8	13.8	44.6	35.8
5	2.9	10.5	41.9	44.8
6+	6.7	20.0	40.0	33.3
(*P* < 0.001)				
Rural village	6.0	20.0	39.3	34.7
Town < 10,000	8.5	16.3	42.6	32.6
Town < 10,000+	4.3	18.3	38.7	38.7
Town 25,000+	2.9	14.5	45.7	37.0
Outer metro 100K+	6.3	18.8	40.1	34.7
Inner metro 100K+	4.6	15.2	36.9	43.3
(*P* = 0.266)				

Women	5.9	18.1	39.1	37.0
Men	5.2	16.4	40.8	37.7
(*P* = 0.754)				
18–24	9.8	15.7	50.0	24.5
25–44	6.2	19.4	40.2	34.3
45–64	5.3	17.9	37.9	39.0
65+	4.5	14.8	40.4	40.4
(*P* < 0.050)				
Degree	5.3	17.8	34.6	42.3
Less than tertiary	5.7	16.9	42.0	35.4
(*P* = 0.044)				
$78,000+ personal income	3.0	13.6	35.2	48.2
< $78,000	6.0	18.2	40.2	35.6
(*P* = 0.004)				
Lower	18.2	36.4	34.1	11.4
Working	4.1	19.3	47.8	28.8
Lower middle	5.5	23.1	42.9	28.6
Middle	6.1	13.9	38.3	41.7
Upper middle	2.6	13.7	26.3	57.4
(*P* < 0.001)				
Single	9.3	25.8	40.2	24.7
De facto	7.2	21.6	42.4	28.8
Married	3.6	12.6	39.8	43.9
Divorced	11.8	26.8	40.2	21.3
Separated	3.3	16.7	36.7	43.3
Widowed	7.5	30.0	31.3	31.3
(*P* < 0.001)				

Table A3: Health (0–100 scale), loneliness and social background (means)

Own home	60.2	**Degree**	70.6
Mortgage	66.0	**Less than tertiary**	58.1
Rent Private	58.7	**(*F* = 0.001; Eta = 0.22)**	
Rent Public	41.5		
Other	64.2	**$78,000+**	70.5
(*F* < 0.001; Eta = 0.18)		**<$78,000**	60.3
		(*F* < 0.001; Eta = 0.14)	
Rural village	58.9		
Town < 10,000	58.4	**Lower**	37.2
Town < 10,000+	63.5	**Working**	55.9

Town 25,000+	57.6	**Lower middle**	59.0
Outer metro 100K+	61.3	**Middle**	63.8
Inner metro 100K+	65.7	**Upper middle**	72.5
(*F* = 0.001; Eta = 0.12)		**(*F* < 0.001; Eta = 0.26)**	
Household size		**Single**	63.6
1	53.7	**De facto**	63.0
2	60.2	**Married**	62.8
3	65.0	**Divorced**	56.6
4	66.1	**Separated**	58.9
5	68.6	**Widowed**	47.8
6+	63.0	**(*F* < 0.001; Eta = 0.14)**	
(*F* < 0.001; Eta = 0.17)			
Women	62.6		
Men	60.2		
(*F* = 0.069; Eta = 0.05)			

Source: AuSSA (2009)

Table A4: Health (0–100 scale), loneliness and social background – continued (means)

18–24	71.6
25–44	66.9
45–64	61.2
65+	53.7
(*F* < 0.001; Eta = 0.21)	
Loneliness frequency	
Once a day +	43.7
Once a week +	53.4
Once a month +	59.3
Once a year +	65.0
Less or never	65.3
(*F* < 0.001; Eta = 0.24)	
Loneliness problem	
Stronly agree	48.8
Agree	55.5
Disagree	58.8
Strongly disagree	69.2

(*F* < 0.001; Eta = 0.25)

Source: AuSSA (2009)

Table A5: Frequency of loneliness and loneliness as a serious problem (odds ratios)

	Frequency		Problem	
	Model 1	**Model 2**	**Model 1**	**Model 2**
Women	0.91	0.87	1.09	1.05
Aged 18–24	2.56***	3.19***	1.48	1.85*
Aged 25–44	2.47***	2.85***	1.62**	1.82**
Aged 45–64	1.72***	1.88***	1.33*	1.42*
Aged 65+	1.00	1.00	1.00	1.00
Degree	0.99	1.10	0.97	1.05
Earn $78,000+	0.84	0.91	0.72*	0.75
Private rental	1.48*	1.42*	1.47*	1.40*
Public rental	1.81*	1.42	1.93*	1.42
Household size (1 to 6+)	0.92	0.93	0.90*	0.91
No partner	2.54**	2.39***	1.80***	1.69***
Live inner urban > 500K	0.85	0.87	0.82	0.83
Lower or working class	1.57***	1.43**	1.38*	1.25
Fair health	-	2.01***	-	2.06***
Poor health	-	4.72***	-	3.64***
R^2	0.12	0.16	0.07	0.11
n	(1283)	(1282)	(1297)	(1296)

Source: AuSSA

Table A6: Frequency of loneliness and loneliness as a serious problem (odds ratios)

	Frequency		Problem	
	Women	**Men**	**Women**	**Men**
Aged 18–24	3.87***	2.18	1.75	1.88
Aged 25–44	3.16***	2.43**	1.76*	1.90*
Aged 45–64	2.08***	1.67*	1.29	1.55*
Aged 65+	1.00	1.00	1.00	1.00
Degree	1.05	1.19	1.07	0.97
Earn $78,000+	1.14	0.81	0.79	0.74
Private rental	1.35	1.58	1.40	1.39
Public rental	1.60	1.02	1.57	1.15
Household size (1 to 6+)	0.91	0.97	0.87	0.98
No Partner	2.21***	2.91***	1.64**	1.78*
Live inner urban >500K	0.90	0.81	0.79	0.93
Lower or working	1.28	1.66*	1.07	1.52*

class				
Fair health	2.23***	1.79**	2.00***	2.17***
Poor health	7.23***	2.94**	3.24***	4.13***
R^2	0.16	0.16	0.10	0.13
n	(724)	(558)	(733)	(563)

Source: AuSSA

Table A7: Self-assessed health and loneliness (odds ratios)

	Women		**Men**	
	Model 1	**Model 2**	**Model 1**	**Model 2**
Aged 18–24	5.35***	6.32***	3.21**	3.36**
Aged 25–44	2.34***	2.72***	1.62	1.81*
Aged 45–64	1.99***	2.30***	0.90	0.99
Aged 65+				
Degree	1.92***	1.85***	1.81**	1.91**
Earn $78,000+	1.03	1.07	2.21***	2.12**
Private rental	0.81	0.83	0.78	0.82
Public rental	0.23***	0.27***	0.36	0.41
Household size (1 to 6+)	1.02	0.99	1.06	1.06
Married	1.68**	1.47*	0.87	0.71
Live inner urban >500K	1.32	1.29	0.97	0.93
Lower or working class	0.52***	0.56**	0.64*	0.65*
Loneliness a problem	-	0.78	-	0.67
Frequent loneliness	-	0.41***	-	0.47**
R^2	0.16	0.20	0.14	0.18
n	(733)	(721)	(568)	(559)

Source: AuSSA

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