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Chapter 1

Perspectives on 'Demography at the Edge'

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The intent of this book is to examine the relationships between 'remoteness' and the demographic characteristics of populations who live in remote areas. It is concerned with the remote parts of developed nations, and so it faces the challenges of demographic research at the sub-national level. The grand theories of demography have been developed around observations of human populations at the national or supra-national scale. While propositions such as the demographic transitions are not universally accepted, they have proven very useful for researchers and policy makers concerned with the characteristics of relatively large populations (Burch 2003). Far less attention has been paid to formal or behavioural demography as it applies to smaller (particularly sub-national), more dynamic and more open populations (Swanson 2004). There are numerous studies about such populations, but they tend to be concerned with data quality issues, methods of data analysis and the production of localised descriptions of population characteristics (see, for example, Wilson and Bell 2004, Wilson and Rees 2005). Processes of industrialisation and post-industrialisation have effected how regional populations change and how they interact with one another (Pierson 1998). A focus on migration, including models of rural-to-urban migration and counter-urbanisation (Bosworth 2008) has been a main feature of sub-national demography. Population changes have been interpreted in the light of theories of economic development such as the staples thesis and various core-periphery

models (Barnes et al. 2001). Overall, however, there have been few attempts to synthesise knowledge about how sub-national populations work into general models, despite calls for attention to the issue over at least the past two decades (McNicoll 1992).

One of the reasons for poorly developed regional demographic models may be the diversity of small and dynamic populations which are available for study. Small area demographic studies have been concerned with cities and urban centres (for example, Haase et al. 2007), suburbs and the rural fringes of cities, agricultural and rural districts (Kandel and Brown 2006) and more nebulous 'remote', 'peripheral' or 'marginal' regions (Gurung and Kollmair 2005). These latter are to be found in all parts of the world, with this book specifically interested in remote regions of developed nations. Developed nations are well progressed along the various demographic transitions and contrast with developing nations, which are still in the process of technological, economic and demographic change (Attanasio et al. 2006).

Regional development theories suggest concentration of a developed country's human and economic resources around mainly urban population nodes (Currie and Kubin 2006). These nodes have critical mass both of producers and consumers. They are well connected to markets and information through hard and soft infrastructure. They also tend to become centres for the creative industries, sports and recreation, education and learning because they have both the population and the economic wealth to invest in these activities. The more distant one gets from these centres (although the relationship is not strictly linear), the more difficult it has proven to bring together and sustain development resources (Polese and Shearmur 2006). Consequently, just as different demographic patterns are observed between nations, there are important sub-national differences (Coleman 2002).

The researchers whose work is featured in this volume are particularly interested in demographic conditions in the more remote regions of Australia, Canada, the United States and the north of

Europe. While these regions are 'at the edge' geographically and economically, they receive disproportionate attention from policy makers and service providers. Sometimes, this is because they contain natural resource wealth critical to the economic growth of the nation and sometimes because they are home to high proportions of Indigenous people and other 'at risk' populations. Remote regions have relatively low population densities (although they can have high concentrations of population in a small number of dispersed settlements) and low total populations when compared with the rest of the country. Understanding the demography of these regions is critical in designing and evaluating policy, workforce planning and the implementation of social services.

There are no existing universally accepted rules for defining what constitutes a 'remote' region. The relationships between remoteness, peripherality and marginality have not been well defined. In some literature, these terms are used interchangeably, while in other cases they are seen to have important differences. What is clear is that they are relative terms defined in part, if not in whole, by what is accessible, core or central. They are also purposive terms, implying the need to state a 'remoteness from' an activity, function or amenity (Wakeman 2004). Any operationalising of remoteness will likely attract criticism because of the issues of relativity and purposiveness.

In the academic literature, 'remoteness' has commonly been associated with health care service provision and indexes of remoteness have been developed in Canada (Leduc 1997) and Australia (Australian Institute of Health and Welfare 2004) that reflect the relative level of (geographic) access to various health services. Spiekermann and Neubauer (2002) reviewed a set of approaches to defining remoteness that were more concerned with the density of transport networks. For them, the ease or difficulty of the journey between places was more important than the level of services at the origin or destination. The term 'peripheral' is widely used in various streams of geographic and economic research, but it is mostly used as an *a priori* label for places (those which are 'known' to be peripheral). Gurung and Kollmair (2005), among others, have provided conceptual definitions for

peripherality and marginality, suggesting that they have spatial and social dimensions, but are difficult to apply uniformly across nations, continents or the globe.

Remoteness, peripherality and marginality are subjective terms, defined at times by those outside and at times by those inside. Remoteness can be nested within a region, such that the region itself is remote from some core, and there is an internal organisation within the region of central and peripheral locations. Borgatti and Everett (1999) talked about multiple cores and multiple peripheries, which can overlap one another and which do not need to have one-to-one relationships. The four jurisdictions of interest in this book may consider themselves remote or peripheral to a core 'down south', a conception about where decisions are made and where the focus of decision makers lies. Similar attitudes may be held towards the political centres of these jurisdictions by those living in the 'truly remote' parts.

While there may be continuing disagreements about how remoteness is defined, even cursory examination of maps of Australia, North America and northern Europe reveal where the 'extreme cases' (Flyvbjerg 2006) of remoteness are most likely situated. Each map has areas where there are many labels for towns and cities and where there exists a spider-web like network of roads and railway lines. As the eye moves (generally north) from these areas, the number of labels diminishes, along with the number of alternative transport routes between towns and cities. Ultimately, in the far north (and more so towards the west in Australia and North America), the level of human infrastructure is very low and population centres are small and widely dispersed. In Canada, the transition from high density human and transport networks occurs within a few hundred kilometres north of the border with the United States. The Yukon, Northwest Territories and Nunavut are jurisdictions most obviously 'remote' from the main population centres, but so are large northern sections of the more southerly provinces. In Australia, the Northern Territory embodies remoteness, along with the northern and eastern parts of Western Australia and the north and west of

Queensland. Alaska in the United States has a population density of 0.42 persons per square kilometre, by far the lowest density of all States and comparing to 31 persons per square kilometre for the country as a whole. The northern European situation is more politically complex. The Nordic Council of Ministers has identified the 'Northern Sparsely Populated Areas' (NSPA) which includes parts of Norway, Sweden and Finland, along with the Faroe Islands, Greenland and Iceland.

Formal demography is concerned with the statistics that describe populations – age and sex profiles determined by births, deaths and migration (Rowland and Trevor 2003). Formal demography is concerned with methods for enumerating populations, for estimating fertility, mortality and migration rates and for constructing life tables. Behavioural demography looks for explanations for demographic outcomes (Hobcraft 2006) – why are fertility and mortality patterns as they are? Why do people migrate from one place to another? Why are particular population structures correlated with particular health or economic outcomes? Why family structures like they are and what are might be the reasons for differences between populations? Many researchers interested in these questions would not consider themselves demographers at all – they are geographers and economists and sociologists and anthropologists and health scientists. The intent of this book is to construct knowledge of formal and behavioural demography using perspectives drawn from a range of disciplines. The aim is to describe both how and why remote populations change over time and the extent to which their 'remoteness' can be considered a factor in those change processes.

General Characteristics of Remote Populations

Australia, Canada, the United States and Europe's Northern Sparsely Populated Areas face substantial challenges in including their furthest jurisdictions in the processes of post-industrialisation and the development of knowledge economies. It is now widely accepted that such processes are human ones – innovation diffusion relies on the interactions between people and the

organisations they construct (Francois and Zabochnik 2005). People provide the core inputs for networks and clusters. People are the entrepreneurs in economic systems. The collections of people as producers, intermediaries and markets constitute the critical mass which drives innovation. People are not just central to Markey, Halseth and Manson's (2006) qualitative competitive variables; they also feature as inputs to quantitative variables such as economic structure and productivity. The role of people is not limited to economics and neither should economics be seen as the sole justification for the existence of remote populations. People sustain social, political and cultural capital - forces for social development, creativity and cultural enrichment which do not necessarily have to have immediate economic returns (Woodhouse 2006).

The population dynamics of the remote regions described in this book differ from each other in some important ways, but many of the fundamental characteristics are similar. Similarities are around how the regional populations compare with their national averages and how the regional populations are internally structured. Comparative elements include small size, low population density, high proportions of Indigenous people, high mobility, young age structures and high sex ratios. The comparative statistics conceal some critical internal dichotomies. The 'split' between Indigenous and non-Indigenous populations is most commonly cited (Taylor 2003), but this split does not completely explain structural differences. Remote populations typically have areas of very high population density separated by areas that are barely inhabited on a regular basis. They have one or two comparatively large population centres, with the average population of other settlements consistently low. They have some highly mobile groups and some that appear to be very stable. Their unusual age/sex distributions reflect both a young median age and an ageing population. High sex ratios are often reported, but are not apparent in all sub-populations or at all ages.

While demography of remote populations is a methodological challenge for demographers - from measurement to inferences drawn, it is a practical challenge for those who want to use demographic

data to inform research or policy making. Presenting northern policy makers with summary statistics and then explaining why they cannot be used in the same way as their southern counterparts are used can be difficult. At the same time, there is obviously a limit to the number of views one can provide of a population while still enabling evidence-based decision-making. Each of the chapters in this book struggles with that dilemma. Here we propose seven 'D's which at least help describe why standard demography is inadequate and perhaps provide some insights into alternative approaches.

Perspectives on Remote Demography

The challenges in understanding the behaviour of remote human populations include an information challenge, a knowledge challenge and a management challenge. Formal demographers want information that can accurately measure the characteristics of individuals (age, sex, fertility, migration events and so on) and describe those characteristics at a population level. Behavioural researchers want knowledge about why individuals act as they do and how this manifests in characteristics of the population system. Policy makers want to understand how the population system might respond to interventions and how different system structures influence the supply of labour, housing needs, the demand for services, social inclusion and so on.

Much of the thinking around these challenges has situated itself in the context of national and supranational investigation, with assumptions that populations at this scale are largely closed systems in which fertility and mortality are the driving forces of change (Caldwell 2004). Models developed under such assumptions may have limited utility when applied to remote populations in developed countries. For example, general methods for population projections appear inadequate because of the comparatively high contribution of migration and the substantially different demographic characteristics of Indigenous compared with non-Indigenous populations (Wilson and Bell 2004). Harris-Todaro type rural-to-urban migration models have struggled to adequately account for dynamic internal migration patterns subject to cultural and historical influences (Petrov 2007). The

observed relationships between demographic structures and economic innovation appear different in remote areas (Markey et al. 2006). It is not clear whether existing approaches to demographic inquiry simply need to be adjusted to account for remote conditions or whether new approaches need to be developed (Wilson and Rees 2005).

Remote contexts have inspired theorising in some related disciplines, principally regional economic development. A group of (primarily) Canadian researchers starting with Mackintosh and also Innis in the 1920s have examined how a reliance on a small number of export 'staples' (largely unprocessed commodities such as minerals, timber and agricultural products) influences the economic development of remote regions (Brownsey and Howlett 2008). Regions in Canada, the United States, Australia, New Zealand, South Africa, Argentina, Uruguay and Brazil have been examined in light of the staples thesis (Schedvin 1990). Different researchers have viewed staples economies as essentially positive in helping to overcome the limitations imposed by remoteness, while others portray the staples economy as a condition that needs to be diversified out of if long term growth is to be achieved. Both views may have merit from an economic point of view (Watkins and Wolfe 2006). What is interesting for demographers is the implications of the staples thesis for understanding population growth and change. Employment in resource-based industries is often male dominated and temporary (Barnes et al. 2001, Halseth 1999). A focus on serving the needs of export partners may also reduce the motivation to invest in services for the young and old, stimulating high out-migration of specific age cohorts and of families (Jackson et al. 2008). Indigenous people are often marginalised, which contributes to those populations maintaining different demographic structures from other residents (Kassam 2001).

Versions of Friedman's (1966) core-periphery model resonate for demographers and population planners. Such models emphasise the economic development challenges that peripheries face and what these might mean for the migration of labour between core and peripheral areas. Increased

access to communications technology, improved transportation networks and the globalisation of markets has changed what it means to be 'core' or 'peripheral' (Fujita and Thisse 2006), but the terms are still widely used in the literature. Increased mobility (both labour and lifestyle related) as part of post-industrialisation might also have changed how cores and peripheries are conceived. A recent book edited by Baerenholdt and Granas (2008) explores these issues in some detail. What their contributors describe is a complex set of adaptive responses by remote northern European population systems to internal and external conditions. In some cases, populations age and become less mobile, in other cases, population turnover increases or populations become younger and more prosperous.

There are aspects of post-colonialism embedded in much of the discourse around remote human populations and particularly Indigenous populations (Briggs and Sharp 2004). The discourse suggests a sense of the need to give to the colonised the power to define who they are and how they should be enumerated (Tully 2006). Remote areas are often seen as locations where Indigenous culture has 'survived' more so than in urban areas (Wilson and Peters 2005). Anthropologists working in remote areas have played an important role in describing the demographic characteristics of Indigenous populations (for example, Morphy 2007). Methodologists prescribe specific models for enumeration, estimation and projection (Condon et al. 2004). Behaviourists discuss why Indigenous people have different fertility and mortality rates and engage in different types of mobility (Bramley et al. 2004, Romaniuk 2008, Mazzullo and Ingold 2008). Work on synthesising the various aspects of 'Indigenous demography' and situating the Indigenous within the broader population system is in its infancy.

Remote areas tend to be subject to political pressures to grow the population (Brett 2007). At the same time, they are the hosts of environmental and cultural values that attach to pressures to limit growth (Lawrence and Adams 2005). Indigenous and environmental politics contrive to secure vast

areas of land – over forty per cent of the land area of Australia’s Northern Territory is Indigenous land or national park, for example. Attracting too many people to these regions is viewed by some as a threat to their use for environmental and cultural conservation (Muller-Wille et al. 2008). The health and culture of traditional custodians of these areas is seen as threatened by outmigration and population decline (for example, Kildea 2005; Burgess et al. 2005); so the policy tensions are exacerbated.

Population policies in remote areas reflect a juggling of priorities of the types of growth that are desired. While larger populations are generally perceived as ‘a good thing’ to stimulate development, concerns have been expressed about population ageing (Malmberg and Sommestad 2000), about the nature, volume and sources of international migration (Rooth and Ekberg 2006) and about rural-to-urban internal migration (Taylor and Carson 2009). The attention paid to population by administrators in remote regions reflects a perceived need to influence population systems in far more direct and immediate ways than may be the case in more densely populated, economically diverse regions.

These themes and several others are explored throughout the book. What links the analyses is the insistence that populations be considered as dynamic, adaptive, evolving human systems. There is no single demographic structure towards which all human populations are converging. Rather, different populations respond in different ways to changing environmental, cultural and economic conditions because they bring unique histories and have unique potentials. A diversity of population outcomes, even among similar regions, is not only possible, but unavoidable. This type of thinking has been popularised in demographic research by (among others) Anderson, Kaplan and Lancaster’s (1999) examination of differences in fertility trends in rural United States and Bock and Johnson’s (2002) analysis of migration decisions in Africa. To this point, evolutionary approaches to demography have focused on individual decision-making and have drawn from evolutionary biology and

evolutionary psychology. There is also scope to consider how population systems as a whole emerge over time (Clarke and Low 2001). This book is more concerned with analysing the ‘decisions’ of systems than the decisions of individuals, but the two are clearly interrelated.

System properties (such as age distributions, sex ratios and so on) do not emerge as the optimal responses to environmental conditions. They emerge as part of a process of seeking optimal responses. Systems, like species and individuals, often ‘get it wrong’ – in which case they are motivated to new adaptations and the process of change becomes very rapid. Systems, species and individuals also often ‘get it right’, but can then be exposed to changing externalities (climate change, global economic forces, and so on) which demand further adaptation. Systems should not be judged necessarily by how well they perform at any given point in time, but by how effectively they manage change processes (Tooby and Cosmides 2005).

The principles of evolutionary systems modelling suggest that they are at any point in time faced with multiple options for their futures (choice sets). Choice sets are path dependent, in that the choices that are available at a given point in time arise from choices that have been made in the past (Martin and Sunley 2006). For example, a response to population ageing may be to increase fertility levels. However, the capacity to implement this response depends on (among other things) past migration decisions (women of child bearing age may previously have migrated out of the region). While multiple future paths are available, paths are irreversible in that the system cannot revert to a previous state. Conditions can never be exactly the same at two points in time (Edquist and McKelvey 2000). In this way, even systems which appear to have similar initial conditions can experience vastly different evolutionary paths (Rodrigues-Pose and Crescenzi 2008).

Most change is gradual, but from time to time, systems face bifurcation points where radically different paths become possible (Thrane 2007). It is at these times that the differences between previously similar systems become pronounced. Bifurcation points for national population systems

over the past century have included World War Two (increased mortality among particular cohorts) and the breakdown of the Soviet Union (radical changes in immigration flows in Europe and beyond). While systems need to be innovative to manage externalities, they are rarely able to cope with constant sequences of radical change. Instead, they experience multi-stability – phases of consolidation of new system structures between periods of more intense change (Saviotti 2005). This book is concerned with understanding the evolutionary processes experienced by remote human populations. The evolutionary framework does not itself constitute a ‘unified theory’ of remote population systems. Rather, it provides a lens through which commentary can be made on emergent characteristics and the reasons why a diversity of outcomes are experienced by apparently similar systems. In particular, the book picks up four themes that emerge from the discussion in this chapter. The first is that populations in remote areas are heterogeneous. Populations cannot be described in simple ways, despite their relatively small size. Within remote populations are Indigenous and settler populations (or various kinds), urban and rural dwellers, economically engaged and disengaged and so on. The second theme is of generational change. Newer and younger residents of these regions have different local and global experiences to previous generations and their behaviour is adapting as a consequence. The third theme is temporariness. High levels of mobility and population turnover have become institutionalised in many cases. Finally, remote areas are subject to internal and external ties which affect the ways in which their populations evolve. Highly mobile populations may have weak internal ties and strong external ties, while less mobile populations have strong internal ties and weak external ties. Managing these ties is a fundamental challenge for peripheries.

These perspectives on ‘demography at the edge’ lead us to consider seven ‘D’s relating to how demographic research is conducted and analysed about populations in remote areas. Each of the chapters in the book explicitly reference one or more of the seven ‘D’s when discussing how

demographic techniques and perspectives have been developed or modified to suit the context of populations in remote areas.

The Seven ‘D’s of Demographic Research at the Edge

Demography at the Edge is... Different

We argue that remote regions are ‘beyond periphery’ when it comes to modelling population systems. There are some very good regional demographic models which leverage off core-periphery (CP) understandings of the relationships between regions. CP models are usually idealised in the form of two regions – an urban core which has a dense (and large) population and is the location of most of the high end economic activity; and a rural periphery which has a more sparse, smaller, population and is an economic ‘filler’ undertaking the activities that the core needs but cannot do because of lack of land or proximity of people (Baldwin et al. 2002). When these models are applied to demography, the development of cores and peripheries are seen as linked together. Migration patterns are interdependent (for example, ‘drawn to’ and ‘driven from’ may be intertwined). In times of labour surplus in the periphery, people migrate to the core. They migrate out again when there are labour shortages combined with surplus in the core (Pekkala 2000, Epifani and Gancia 2005, Commendatore et al. 2007). Changes in demographic behaviour (family formation, health behaviours) diffuse from the core to the periphery. What is important in almost all CP models is that a periphery has one clearly identifiable core (although many models allow for cores to have more than one periphery) (Borgatti and Everett 1999, Currie and Kubin 2006). So, if young people move out, their destinations are relatively predictable. If urban to rural migration does occur, its scale can be estimated from an understanding of the characteristics of the core. If changes in fertility and mortality occur in a large city, algorithms can be constructed based on size of population, distance and dependencies to predict the dispersal of these behaviours. Even when changes are viewed as

‘global’, they first appear in the cities and then spread to the surrounding regions (Faggian and McCann 2006).

Remote regions share similarities with peripheries. They are sparsely populated. They tend to have a limited range of economic activity, much of which is based on the provision of goods to external markets. They often rely on capital (finance and labour) to be provided by urban centres and they often lose particular populations (young people, retired workers) to urban centres. We argue, however, that they are different in three key respects -

1. While the exchange of capital between a core and its periphery can result in the emergence of new cities in the periphery (through processes of conurbation, for example), this rarely happens in remote areas because the direct ties are weak; and
2. It is often very difficult to establish which specific urban centre is the ‘core’ for a remote region. Remote regions tend to have multiple ‘cores’. In the Northern Territory, this has been demonstrated through analysis of sources of labour. Typically, a peripheral region will attract three-quarters of new migrants from just four or five other regions (the surrounding peripheries and a single dominant core). Regions in the Northern Territory, however, attract less than half of their new migrants from the top five sources. So, while the Territory is more dependent on external labour than most Australian peripheries, it is much more difficult to identify the sources of that labour.
3. CP models have fractal properties. A core relates to a set of peripheries. Within the peripheries are larger population centres, which relate to their hinterlands as cores, and so on. Such properties make it possible to talk about ‘step migration’, for example – where people move from smaller village to larger town to city but usually within a closed system in which the ‘ultimate core’ can be identified. This means that

sub-regions can be identified with their own 'internal cores' even as the region itself serves as periphery to a more distant and larger centre. In many remote regions, the larger population centres serve at best as weak cores. This is demonstrated in the discussion of responses to weather and climate events discussed in Chapter 16, where initial responses to shocks tend to be movement out of the region altogether.

Some of the remote regions in this book do appear on the surface to have clear CP relationships – Greenland with Copenhagen, the north of Manitoba with Winnipeg. But a closer examination shows these relationships weakening over time. In Greenland, this may be a function of self-government. In Manitoba, it may be more a function of changing economic structure. Ultimately, however, when our remote regions speak about their relationships with the more densely populated centres 'down south', they are likely to be referring to a number of locations (or a poorly defined generality) rather than a single specific one.

Demography at the Edge is... Distant

Change over time is an important variable in understanding the demography of all regions. Changes in transport and communications technology, for example, facilitate connections between regions. Improved transport and communication means that people from peripheries have the opportunity to migrate further from home but retain family and social links. Improved communication means that new behaviours can be learned from distant sources. It has been argued, however, that global transport and communication systems have, in fact, emphasised the importance of local, physical ties (Storper 1995, Cooke and Morgan 1998). Core-periphery relationships have been strengthened in many ways. Cores have remained transport hubs and the key nodes linking peripheries to the outside world. Technology improvements are usually delivered first to cores and then disperse to their peripheries (Green 1994, Krugman and Venables 1995). There are examples of peripheries harnessing improved transport and communication technologies to bypass old cores and establish

themselves as new ones (such as happened during the era of ‘frontier’ expansion in the western United States of America) but these have always been places with ready access to large populations, which can exploit or even create geographic positions of access to markets (Gunton 2003). Remote regions, on the other hand, often become more remote over time as transport and communication ‘improves’. They lack the access to population to exert their position in transport or communication networks. Even Darwin, which appears geographically well positioned as an intermediary between Australia and its large Asian markets, has experienced reductions in air transport services and has been slower to gain access to new technologies than less well-positioned (but more populous) centres. New networks are formed that exclude or marginalise Darwin and it is very difficult to disrupt those networks once they are established. Of course, many remote places lack even Darwin’s geographic advantage and in the maintenance of transport and communication services, there are concerns of policy and polity rather than economy. In our ‘norths’, polity has always served as a weaker force for progress than has economy.

Demography at the Edge is... Dependent

It has proven very difficult to model the economies of remote regions. This is because formal economies tend to be externally focused and internal economies are often informal and poorly measured. Formal economies rely on the export of minimally processed natural resources and these ‘staples’ activities are sustained by externally sourced financial and human capital. Economies are highly susceptible to the boom and bust cycles of international resource markets. This leads to far greater fragility than in less remote places which can foster strong internal markets (Altman 2003, Barnes 2005).

The same dependency on external conditions applies to demography and makes it very difficult to use standard regional demographic models which assume populations are largely internally regulated (for example, Chapter 3 and Chapter 7). Those models become less manageable once migration

begins to play a substantial role (Chapter 12). Their utility for remote regions is limited, then, because external events (which regulate migration) are so important in the remote context. This book discusses some of these events – opening and closing of mines (see Chapter 11), decisions about where to locate education facilities (Chapter 13), external investments in different forms of tourism development (Chapter 14). There is also a high dependency on decisions made by central governments. Decisions about the movement of defence forces have dramatically impacted population structures in all the regions under consideration here, for example. Understanding external influences must play a greater role in modelling remote populations than it does in more standard demography.

Demography at the Edge is... Dynamic

Remote populations are constantly changing, partly as a response to the external events described above. The changes are not only in terms of size, but in terms of constitution. The story of population change following severe weather events as described in Chapter 16 is a stark illustration of the dynamism of demography at the edge. The population of the Northern Territory recovered quickly in terms of size following the devastation caused by Cyclone Tracy in 1974, but it became substantially younger, more male and with fewer families and children. ‘Reconstruction’ of the populations of regions across the north of Sweden resulting from decisions about education (for the young) and retirement (for the older) are also described in Chapter 7. Remote populations may also be susceptible to ‘false dynamism’ to a greater extent than more populous ones. For example, patterns of family formation and migration behaviour of young women in the Arctic North (see Chapter 12) have led to many children being raised (and often legally ‘claimed’ by) by grandmothers or other older relatives of the birth mother – giving the impression of substantial rises in the average age at birth over a very short period. A change in policy for birth registration (as has happened several times in dealing with ‘Greenlanders’ born in Denmark and vice versa) or other vitals

recording can lead to the appearance of dramatic changes that do not really exist (several of our chapters on Indigenous demography discuss this point).

The consequence of dynamic populations is that trends are very difficult, firstly to establish and secondly to project forward. Demographers interested in remote populations need to be aware of the conditions which precede change and the context specific responses that people make to such change. Tools in this area are perhaps more valuable than sophisticated statistical analysis techniques.

Demography at the Edge is... Diverse

Diversity exists between the newcomers and long stayers, the urban and rural dwellers, the overseas born and native born. Many of the key demographic variables in remote populations have platykurtic (flat) or multi-modal distributions. Analysing demographic change based on measures of central tendency of such variables is pointless. Instead, the population needs to be de-constructed and the diversity accounted for. The difficulty is to what extent one can divide such small populations and retain meaning in summaries. It has become very common to implement different models to analyse Indigenous and non-Indigenous populations. It is less common, but not unheard of, to do so with migrant and resident populations or urban and rural dwellers. The critical task for the analyst is to understand the application of demographic information as well as its construction, so that wise decisions about deconstruction can be made.

Demography at the Edge is... Detailed

Because of the diversity and because of the dynamic nature of demographic change, demographic research in remote regions requires an understanding of detail. Seemingly small changes – the decision of a few people to move around, to delay having children, to engage in risky health behaviours – can fundamentally impact the nature of the population.

Demography at the Edge is... Delicate

It is not surprising that demography is a 'hot topic' in all the remote regions we cover in this book. Chapter 17 discusses the significance of population policy across the jurisdictions. Regional economies are often dominated by national government transfers. The size of these transfers are in large part determined by estimates of the population and furthermore of particular sections of the population (Indigenous, rural dwellers and so on). It is therefore important to government in remote regions to have detailed and accurate demographic information.

At the same time, demographic research has been used as an instrument of control and administration of remote populations. The most notable example in this book is of the Sámi population in northern Europe (see Chapter 2). The perceived threat to Sámi cultural survival posed by research (including demographic research) has resulted in the removal of Sámi identifiers from data collections. More subtle, but no less important, has been the failure to participate in demographic data collections of large numbers of Indigenous people in the Northern Territory, the United States and Canada (as described in Chapter 2). There is some evidence to suggest a reluctance to provide information because of concerns about security of land tenure (threatened by outmigration of young people, for example), problematisation of particular behaviours (young males moving to urban centres viewed as 'criminals in waiting' (Taylor and Carson 2009), access to income (mothers might be denied welfare benefits if they acknowledged the presence of a spouse) or cultural sensitivities (Aboriginal people in Australia are often forbidden to acknowledge a recently deceased infant, for example).

There are not just issues of delicacy for Indigenous populations. Remote regions, often viewed as frontiers, can become destinations for people who are deliberately trying to avoid surveillance or start anew (Woollacott 2009).

Structure of the Book

The first section of the book is concerned with the methods and models of demographic inquiry and how they have been applied in the case example regions. Attention is paid to population counts, estimates and projections. Chapters also examine the suite of fertility, mortality and migration statistics that are available and the issues involved in their interpretation and application. There are additional challenges faced in the treatment of Indigenous populations and these are explored. The second section of the book applies theories of population dynamics, migration, human behaviour and economic and social development to the changing conditions observed in the case example regions. The focus is on issues which have relevance across all jurisdictions, including urbanisation and counter-urbanisation, the mobility of 'key workers', population ageing, amenity migration, overseas immigration issues and the influence of tourist populations. The book concludes with a discussion of current population policy frameworks in our case example regions.

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