Food, Household Sustainability and Migration. Practices of Papua New Guinean Migrants in Australia and Aotearoa New Zealand

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Food, Household Sustainability and Migration. Practices of Papua New Guinean Migrants in Australia and Aotearoa New Zealand

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ABSTRACT

Food is central to the global challenge of sustainability and households are positioned as key sites of sustainable action by policymakers in many western neoliberal nations. Thus, ‘household sustainability’ in the Minority World has become the subject of increasing interest in the academic literature. Largely absent from this research are Majority World migrants from diverse ethnic backgrounds who live in the Minority World. The thesis asks, what can we learn from ethnically diverse communities if they are included in debates about household sustainability? To address this question, the empirical focus of the thesis is the everyday food activities of 12 Papua New Guinean (PNG) migrants in Australia and Aotearoa New Zealand. I employed a talanoa-inspired research approach based upon Pasifika values and worldviews centred upon human relationships in response to decolonising methodologies. Consequently, the research design employed in-depth interviews, participant photography, and kitchen tours alongside a research diary. An interpretation of these migrants’ everyday food practices is offered by bringing into concert post-structural feminism with Deleuze and Guattari’s geophilosophy. Across three analytical chapters I seek to highlight how everyday food practices help to (co/re)constitute different places, subjectivities and temporalities and the implications that these have for household food sustainability. First, I illustrate through the concept of the food provisioning assemblage how the normalised refrains in Australia and Aotearoa New Zealand that sustain family and home render more sustainable food practices, that are common in PNG, impossible post-migration. Second, the lens of the food preservation assemblage highlights how post-migration preservation practices are adapted to accommodate new subjectivities aligned with the refrigerator rather than with meat smoking. Third, the disposal assemblage brings into focus the different socio-material arrangements and rhythms that comprise home and facilitate specific conduits of disposal. The thesis illustrates how, when household food sustainability is conceived as a relational achievement, transitioning practices of provisioning, preserving and disposing are always contingent upon the socio-material arrangements through which people achieve a sense of themselves and home.
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I, Rebecca Suganya Campbell, declare that this thesis submitted in fulfilment of the requirements for the conferral of the degree Doctor of Philosophy from the University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. This document has not been submitted for qualifications at any other academic institution.

Rebecca Suganya Campbell

8th April 2020

Parts of the following publication completed in my candidature are reproduced in the thesis:

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CHAPTER ONE: INTRODUCTION

1.1 Introduction

Households are increasingly imagined by policymakers as key sites of environmental action in the context of growing environmental instability and uncertainty. The figure of the responsible consumer is central to neoliberal climate change mitigation policies (Dubois et al. 2019). The concept of ‘household sustainability’ has therefore garnered much interest in climate change debates. This notion has attracted significant academic attention across many disciplines, including human geography. The burgeoning literature tends to focus on so-called ‘typical’ households (predominantly white, nuclear, heterosexual and middle-class) of the Minority World. Overlooked are the experiences and environmental knowledges of migrants from diverse ethnic backgrounds. Accordingly, Klocker and Head (2013) and Head, Klocker and Aguirre-Bielschowsky (2019) advocate engaging with migrants from the Majority World living in Minority World countries. These migrants may provide valuable insights into rethinking household sustainability. For this thesis, I conceive of ‘sustainability’ as being concerned with the practices and materials in everyday life that support environmentally beneficial outcomes.

Household food waste has far-reaching sustainability implications for the Minority World. In the Australasian context (Australia and Aotearoa New Zealand), the scale of food waste is immense. Australians throw away about four million tonnes of edible food a year with a value between five and eight billion dollars (Department of the Environment, Water, Heritage and the Arts [DEWHA] 2010). In Aotearoa New Zealand, which has around a fifth of Australia’s population (Statistics NZ 2020), 157,389 tonnes of food worth about $1.17 billion a year is discarded (Love Food Hate Waste 2020).

1 The terms ‘Minority World’ and ‘Majority World’ refer to what has in the past been known as the ‘First World’ and the ‘Third World’, or, as in the more recent trend, the ‘Global North’ and ‘Global South’. In using these terms, I seek to avoid language that privileges ‘western’ and ‘northern’ worldviews (Punch & Tisdall 2012; Doyle 2005).
Domestic food waste constitutes approximately 29 percent of a ‘typical’ Australian household’s greenhouse gas emissions (Wright, Osman & Ashworth 2009). According to Melikoglu, Lin and Webb (2013), 95 percent of food waste, which comprises the largest portion of municipal solid waste, ends up in landfill. Here food waste releases methane, carbon dioxide and other greenhouse gases through decomposition and processes of anaerobic digestion. These numbers illustrate the significance of the food waste problem and the urgency of addressing it.

The centrality of household food waste to questions of sustainability is evident in the emerging social and cultural geography research, including the work of Waitt and Phillips (2016), Gibson et al. (2013) and Evans (2012a), among others. The focus in this work tends to be centred on Anglo-European households and individuals situated in the Minority World. Ethnically diverse bodies are conspicuously absent, despite the centrality of food and its associated practices to the migrant experience (Brown, Edwards & Hartwell 2010; Hage 1997). This thesis seeks to help fill this disciplinary gap by investigating the food and kitchen behaviours of 12 Papua New Guinean (PNG) migrants in Australia and Aotearoa New Zealand. To interpret participants’ behaviour, I take a feminist post-structuralist approach (specifically, corporeal feminism), tempered with Deleuze and Guattari’s (1987) related ideas of assemblage, refrain and affect. Attention thus turns to understanding participants’ behaviours as embodied and affectual experiences of ‘doing food’. I argue that food waste is always a relational, more-than-human achievement. In doing so, I contribute to scholarship that challenges the view that household sustainability is best addressed by economic imperatives that leave the current economic and social systems intact and encourage higher levels of consumption.

This introductory chapter begins by offering an insight into the political and policy context in Australian and Aotearoa New Zealand, specifically household sustainability and food waste. I then discuss my choice to work with migrants from Papua New Guinea (PNG) and the importance of including this diverse group of people in sustainability debates. Following this, I outline the project aims, research questions and disciplinary significance. Finally, I provide an overview of the thesis structure for the chapters that follow.
1.2 Environmental Sustainability and Food Waste in Australia and Aotearoa New Zealand

Despite some very vocal oppositional voices, there is a general global consensus that the earth is experiencing rapid and unprecedented climate change as the result of carbon-intensive human activity. Most environmental scientists, governments, and international agencies agree that the reduction of greenhouse-gas emissions is vital to stop the global temperature rise (IPCC 2015). Furthermore, limiting these emissions is “necessary to achieve sustainable development and equity, including poverty eradication” (IPCC 2014, p. 5). Currently, there is no intergovernmental body that wields the authority to enforce solutions (Dobson 2004) and globally, there is no cohesive plan to tackle the changing climate (Pietsch & McAllister 2010). Responsibility for transitioning to a lower-carbon society lies with national governments. The divergent policy strategies within the Minority World are evident when Australia and Aotearoa New Zealand are compared.

In Australia, climate policy is underpinned by the embrace of neoliberal principles of successive conservative governments that prioritise economic growth and stability (Mercer, Christensen & Buxton 2007). Considering that 25 percent of the country’s exports are derived from the fossil fuel industries and 16 percent from the agricultural sector (Mercer, Christensen & Buxton 2007), such a view is perhaps unsurprising. This resistance to commit to climate action plays out on the international stage. For example, at the 2019 Pacific Islands Forum, the Australian representatives refused to commit to proposed climate action plans (Blackman 2020). The 2020 Climate Change Performance Index (Burck et al. 2020) ranked Australia as the worst-performing of 61 surveyed countries in terms of climate policy. Burck et al. (2020, p. 16) argued that the newly elected Morrison government “has continued to worsen performance at both national and international levels”. The governmental and policy resistance is apparent even though community environmental concern in Australia is strengthening (Pietsch & McAllister 2010), particularly in the wake of the ongoing (at the time of writing) bushfires in many of Australia’s states and territories. These fires have been unprecedented in scale and destructive power. The bushfires’ increased severity has been attributed to anthropogenic climate change (Mack 2019) and many communities
have mobilised to demand climate action because of the loss of life, and ecological, economic, and emotional damage. Without climate action at both federal and state levels, the Organisation for Economic Cooperation and Development (OECD) (2019) predicts that Australia will fail to meet its 2030 emissions target.

Food waste reduction policy illustrates the federal government approach. In 2017 a National Food Waste Strategy was introduced that commits to halving food waste on a national scale by 2030 (Commonwealth of Australia 2017). This document acknowledges the scale of the food waste, its impacts and the importance of developing a policy framework. Preferred solutions were market development, education programs to change consumer behaviour, economic investment and incentives, and business ‘improvements’. Within this policy framework, there appears to be little engagement with how people’s decisions about what should be eaten or routed to the bin is embodied.

In contrast, the current Aotearoa New Zealand government’s approach to climate change policy has taken a comparatively more pro-active stance. In November 2019, the Climate Change Response (Zero Carbon) Amendment Act was passed into law, committing the country to reduce net carbon emissions to zero by 2050. Part of this mandate was the establishment of an independent Climate Change Commission, charged with monitoring the progress towards this goal and ensuring that all policy – not just that aimed specifically at carbon reduction strategies – is developed within an environmental sustainability framework. Indeed, as recently as in December 2019, the country’s Minster for Climate Change declared that all major decisions made by government would be made through a “climate change” lens, including a mandatory ‘climate impacts assessment’. In contrast to previous, more conservative governments that positioned Aotearoa New Zealand as a ‘fast follower’ of international climate action, the current administration declares that it is committed to Aotearoa New Zealand becoming a world leader in climate change action (Ministry for the Environment 2020). That said, Aotearoa New Zealand currently has no concrete government-led plan of action to tackle household food waste.
1.3 Research Aims and Questions

What can we learn from PNG migrants living in Australia / Aotearoa New Zealand about household food sustainability? The thesis aims to answer this question. In order to do so, I present the following additional research questions:

1. What subjectivities, places, and temporalities are sustained by PNG migrants’ food practices in PNG?
2. How are these practices changed, abandoned, or transferred to Australia and Aotearoa New Zealand?
3. What are the implications of these transitioning practices for household sustainability, specifically food waste?

To address these questions, I draw on post-structuralist feminist geographical thinking to conceive of how food related activities are always a relational achievement and use mixed qualitative methods. The experiences of PNG migrant food activities are conceived to offer insights to how participants achieve their sense of self, place and time. Attention specifically turns to experiences of food provisioning, preservation, and disposal.

Throughout the thesis, I incorporate a ‘portrait’ approach to give my participants voice and to give more insight into who they are as people, rather than disembodied sources of data. To do this, at the outset of each of the formative chapters, I provide a brief narrative of the participants’ lives both before and after migration, based on their own personal stories. Throughout the chapter, I include quotes from their contributions to our conversations. In using portraits, I seek to position the participants at the centre of the research. Doing this reflects the intention of feminist geography (Edwards & Ribbens 1998; Longhurst, Johnston & Ho 2009) and talanoa-based (Vaioleti 2006) research (see section 3.3) to bring participant voices and agency to the fore. This involved a longitudinal methodology that called for multiple meetings with each participant over a period of about one year. Because of this, small numbers were more appropriate than a large sample and not meant to be representative. Because the thesis focuses on how food and food waste is a relational achievement that sustains subjects,
places, and temporalities, I am interested in offering insights into particular moments rather than making broad generalisations.

1.4 Research Significance

The disciplinary significance of this thesis is threefold. Firstly, in working with PNG migrants, a minority ethnic/cultural group in Australia and Aotearoa New Zealand, it answers calls from scholars to bring ethnically diverse voices to the forefront of cultural environmental research (Klocker & Head 2013; Head, Klocker & Aguirre-Bielschowsky 2019; Clarke & Agyeman 2011). Ethnically diverse migrant voices are all too often absent from household sustainability scholarship, including work on food waste, which tends to look at ‘typical’ Western households (white, middle-class, (sub)urban). In this field of scholarship, ‘ethnically diverse’ bodies, households, and communities are afforded little space, and their environmental knowledges are often overlooked (Klocker & Head 2013). Understanding how migrant ethnic communities from the Majority World do everyday activities is vital in order to understand how domestic environmental sustainability might be performed in ways outside of the expectations and norms of the Anglo-European Minority World. As Head, Klocker and Aguirre- Bielschowsky (2019) point out, there is an emerging literature that examines environmental knowledges of ethnic minority migrants. However, in this corpus of work, migrants from the Pacific – one of the most exposed regions to the impacts of climate change – are rarely the focus.

Second, the thesis provides a post-structuralist feminist contribution to the household sustainability and food waste literature (see Chapter Two). The feminist geographical scholarship on food often is framed around the related concepts of emotions, affects, materiality, and the visceral (see Johnston & Longhurst 2012, 2013; Bell & Valentine 1997; Goodman 2016). Yet, rarely are these concepts part of the domestic food waste conversation nor in the general household sustainability literature. The bulk of environmental sustainability food research often fails to acknowledge the loci of the body, household and community. However, there is a small but growing literature that eschews this trend (see Evans 2012a, 2014; Waitt & Phillips 2016). This thesis extends the feminist literature on household sustainability through the novel and exciting application of the related concepts of assemblage, refrain, territory and affect.
Third, the thesis interprets food waste through the lens of mobility and migration, a dimension of household sustainability that goes mostly unstudied despite food being central to the migrant experience and an important part of how people make home in a context of change (Hage 1997). If scholars are to answer calls for increased participation of ethnic minority voices in environmental debates (as discussed earlier) migrant populations are a vital group to include. This is particularly important as the number of worldwide international migrants has grown substantially in the last 20 years, from 173 million in 2000 to 258 million in 2017 (United Nations 2017). It is also important to acknowledge that the transnational movement of people involves not just the mobility of bodies across geo-political borders, but also ideas, subjectivities, temporalities, and knowledges. This thesis seeks to understand how these dimensions of migration shape everyday food activities and the implications for household sustainability while at the same time being alive to how migration mobilities are classed, gendered and racialized (Sheller 2015).

1.5 Why the Pacific and PNG?

The original thesis proposal was to work with migrants from the Pacific region, not specifically PNG migrants. The initial decision to engage with Pacific peoples was motivated by three main factors. First geopolitics. Australia and Aotearoa New Zealand are in the Pacific region and Pacific Island Countries and Territories (PICTs) are their closest geographical neighbours. Australia and Aotearoa New Zealand are two of the three largest nations within the region both in landmass size and population, with Papua New Guinea being the other. Both Australia and Aotearoa New Zealand are members of the Pacific Islands Forum together with PNG and 13 other independent Pacific Island nations and have considerable influence within the region. Australia, for example, is the Pacific’s largest aid donor, providing considerable funding and support (but not without strings), though China’s increasing influence in the region is evident in the form of loans and aid programs (Hayward-Jones 2019). Additionally, Australia had colonial control over PNG for several decades and Aotearoa New Zealand had colonial interests in the Pacific and still administers the territory of Tokelau. These colonial roles were not always benign. The focus on voices from PNG is thus a small step to address colonial legacies of oppression.
Second, Australia and Aotearoa New Zealand (alongside the United States of America) remain major migration destinations for Pacific Islanders (Connell & Brown 1995; Voigt-Graf 2007) and the Pacific has some of the highest levels of outbound migration in the world (Voigt-Graf 2007). Auckland, Aotearoa New Zealand’s largest city, is considered to be the world’s largest Polynesian city (Voigt-Graf 2007) with a population of close to 176,175 Pacific Islanders (excluding Māori) that comprises approximately 11 percent of the city’s total population in 2018 (Statistics NZ 2020), an increase of 20 percent from the 145,434 Pacific Islanders recorded in the 2013 Aotearoa New Zealand census. It is considered that Aotearoa New Zealand has a ‘special relationship’ with Pacific Island Countries and Territories (PICTs) (Bedford et al. 2007). This is reflected in special migration policies such as the seasonal work scheme that makes it an easier process for many Pacific Islanders to enter the country for temporary employment (Australia has a similar program). People from some of Aotearoa New Zealand’s formerly colonised territories such as the Cook Islands and Niue (which are now self-governing in free association with New Zealand) have citizenship status in the country. This means that they can move easily between Aotearoa New Zealand and Australia through the special class visa that allows residents of both countries to have free movement between them. A number of other Pacific Island Countries have an annual quota under the Pacific Access Scheme. Climate change may cause greater numbers of Pacific people to migrate to the two Australasian countries (Campbell, 2014)

Third, the Pacific region is one of the most exposed to the negative impacts of a changing climate, despite contributing far fewer greenhouse gas emissions (at a per capita level) than other more developed countries such as Australia and Aotearoa New Zealand. The Boe Declaration, endorsed by Pacific Islands Forum member states (including both Australia and Aotearoa New Zealand) at the 2018 Leaders’ Meeting in Nauru, identifies that “climate change remains the single greatest threat to the livelihoods, security and wellbeing of the peoples of the Pacific” (Pacific Islands Forum Secretariat 2019). Because the Pacific is disproportionately affected by climate change, the voices of its people are vital in sustainability debates. Considerable research has been conducted in the Pacific in terms of climate change resilience and adaptation (see Barnett & Campbell 2010). Comparatively little space has been afforded for Pacific
peoples to be a part of sustainability conversations situated in other countries that are bigger contributors to global environmental change. One exception was the appointment of the Fijian Prime Minister Voreqe Bainimarama as co-president of the 23rd Conference of the Parties (COP23) to the United Nations Framework Convention on Climate Change. He introduced talanoa sessions to the COP process whereby people were encouraged to share ideas about, and experiences of, reducing greenhouse gas emissions.

For the above three reasons, I chose to work with communities from the Pacific. Initial contacts during the recruitment phases were with people from PNG. From my conversations with participants, I came to realise the methodological implications for a qualitative research project, featuring 22 distinct and diverse PICTs (Andrew et al. 2019), each of which has its own distinct cultures, societies, and environments. Indeed, PNG is one of the most culturally diverse countries in the world with over 700 languages and cultures (Foley 1986). Furthermore, one of the research aims was to open up household sustainability debates to the voices of smaller migrant groups, which are often overlooked but still have much to offer. Most research about Pacific migrants in general tends to focus on people from Polynesia (Samoa, Cook Islands, Tonga, Niue, Tokelau etc.) rather than those from Melanesian countries like PNG, despite them having a long western history of anthropological research. There is comparatively little scholarship with migrants from Melanesia who have settled in other countries like Australia and Aotearoa New Zealand.

As a person of mixed ethnicity, I am interested in how people who are considered ethnic minorities negotiate increasingly complex decisions in their everyday lives that may impact the environment in both positive and negative ways. My growing interest in environmental sustainability at the household level arose as a response to increasing climate uncertainty and my own desires to be a more responsible environmental citizen. Prior to undertaking this PhD, I was trained at graduate level as a post-structuralist feminist geographer, and I wished to bring insights from this perspective to existing household sustainability debates.
1.6 Thesis Overview

This thesis focuses on food purchasing, processing and disposal for a migrant community from the Majority World as people transition to living in a Minority World context. The thesis is not intended to provide a definitive, all-encompassing explanation for why PNG migrants do or do not produce food waste through their everyday activities. Rather, the chapters turn to moments and events to help understand how food waste is produced at the intersection of bodies, affects, emotions and temporalities. Each chapter offers an opportunity for insights into how Deleuze and Guattari’s (1987) assemblage thinking may work alongside post-structuralist feminist theories to unpack how migrants perform food sustainability in the domestic realm. Though ‘waste’ is a process that is non-linear, sometimes fragmented, and often non-sequential, the thesis (particularly the empirical chapters) is written to follow the so-called ‘typical’ journey of food from garden or shop into the kitchen, through meals and to the bin, or other means of disposal.

In Chapter Two, I examine the existing literature and provide the concepts that guide this research. I begin the chapter by discussing how food geographies’ turn to the visceral, embodied and sensual has been largely overlooked in both the food sustainability and Pacific food literatures. I go on to discuss the absence of migrant voices in the household sustainability literature. I argue that the inclusion of diverse environmental knowledges is vital if ‘alternative’ approaches to tackling the issues of climate change at the domestic scale are to be successful. Finally, I bring concepts from Deleuze and Guattari’s (1987) assemblage thinking together with post-structuralist, corporeal feminism that highlight how items categorised as food waste are always relational, while at the same time remaining alive to the visceral, embodied, affectual and emotional dimensions.

Chapter Three outlines the research methodology. I start by outlining my own positionality and interrogate how my lived experience has shaped the co-production of knowledge through my interactions with participants. I then locate my work within discussions of the decolonisation of methods. This is a crucial conversation. Colonial invasion from several countries is not just something of the past. The impacts of ‘soft’ colonialism continue to occur through such measures as foreign aid. In particular, I
explore the notion of *talanoa*, a Pacific-led research methodology from Tonga. *Talanoa* inspired my research methodology. Embedded in discussions of decolonising knowledge, a *talanoa* approach is aligned to slow scholarship and centred on relationship-building rather than survey-based methods or transactional exchanges.

Chapter Four extends the methodology chapter by focusing on recruitment. I discuss the difficulties that arise when recruiting participants from a minority community that has experienced a history of research exploitation. I outline how I addressed the challenge of finding a cultural liaison, and the alternative pathway to recruitment that I pursued when that avenue proved impossible. The use of social media arose as a key recruitment tool and helped sustain contacts over a long period of time.

Chapters Five, Six and Seven constitute the empirical contribution of the thesis. Each of these empirical chapters highlights a different assemblage that makes food sustainability possible, or impossible, for PNG migrants as they make the transition to life in Australia or Aotearoa New Zealand. Chapter Five introduces the notion of the ‘food provisioning assemblage’ alongside the concept of the refrain in order to examine PNG migrants’ encounters with plants and investigates how family is (re)produced in the post-migration context. The chapter discusses how normalised rhythms in Australia and Aotearoa New Zealand work against people’s abilities to grow, and forage for, vegetables that were available to them in PNG. It goes on to explore how food purchasing rhythms and forces sustain the extended family. I here make the case that Australian and Aotearoa New Zealand refrains of food provisioning may inhibit some sustainable food activities (such as foraging, meat smoking and composting) but, at the same time, are difficult to change because they make possible certain subject positions (such as the good tenant subject, the student subject, and the parent subject) that migrants value and wish to maintain.

The ‘preservation assemblage’ is the focus of Chapter Six. The chapter uses the examples of smoke and fridges to argue that food preservation achieves more than the slowing of decay. It also sustains places and subjectivities. I discuss how transitioning to the societal norms prevalent in Australia and/or Aotearoa New Zealand results in the prioritisation of different subject positions from in PNG, and how preservation activities
are changed to accommodate this. These changes, however, do not always support increased food sustainability. Accordingly, I argue that any policy that seeks to encourage people to adopt more sustainable food preservation activities needs to acknowledge that more is at stake for people than might otherwise be thought. This is because food provisioning, preservation, and disposal assemblages sustain subject positions, places, and temporalities that people value and seek to protect.

Chapter Seven offers the concept of ‘disposal assemblage’ to understand how food items are moved out of the house. Here, I explore how non-human actors (dogs, bins, pits and compost) within this assemblage come to be configured as conduits of disposal in PNG. As migrants move to (sub)urban centres post-migration, they become embedded in a disposal assemblage that configures the urban as the absence of dirt. I discuss the key role of non-human agents in how domestic space is imagined as clean and sanitised. As a result, these actors have the capacity to both make and unmake home for PNG migrants in Australia and Aotearoa New Zealand by removing – or failing to remove – food waste from the home. How home is made or unmade, then, may be the result of activities that do not necessarily have an objective of sustainability, even though that may be an outcome. The chapter makes the argument that sustainable food practices are contingent on how the more-than-human can territorialise, or deterritorialise, domestic space as safe and secure.

In the final chapter of the thesis, Chapter Eight, I bring my line of reasoning to a close by revisiting the research questions and summarising the main arguments. I outline the research contributions to the field and outline their implications. I end by identifying the implications for policy and potential avenues for future research.
CHAPTER TWO: FOOD FOR THOUGHT – THEORIES AND CONCEPTS

2.1 Introduction

I draw on two distinct literatures to examine the everyday food practices of PNG migrants and the implications of these for household sustainability: food geographies and household sustainability research. The thesis offers an opportunity to forge connections between these disparate fields through a framework that brings into concert Deleuze and Guattari’s (1987) related concepts of assemblage and the refrain, and corporeal feminist understandings of affect, emotion, embodiment, and the visceral.

The chapter is divided into three sections. The first examines the different disciplinary approaches in the household sustainability literature in order to situate the thesis in broader conversations about sustainable domestic practices. It critiques the dominant ‘utilitarian’ model that positions households and individuals as responsible consumers, and charts alternative approaches that place mundane, embodied encounters at the centre of household sustainability debates. This section highlights the absence of diverse voices in household sustainability scholarship. The second section discusses food geography and the recent turn to the embodied, visceral and affective. This approach is particularly evident in research about how the migrant experience is mediated through food and food-oriented practices (see Longhurst, Johnston & Ho 2009; Johnston & Longhurst 2012, 2013; Hage 1997) but largely overlooked in both the food sustainabilities and Pacific food literatures. The third section provides a brief overview of the thinking that shapes the research, introducing the related concepts of assemblage and refrain that guides the analysis. It discusses how a corporeal feminist understanding of these concepts positions food and food waste as always relationally constituted by building on the work of a range of non-representational and feminist scholars such as Boyer & Spinney (2016), Longhurst (1995, 2001; Johnston & Longhurst 2012, 2013), Ahmed (2004, 2014) and Braidotti (2002). I use these concepts to highlight how food provisioning, preservation, and disposal assemblages can offer insights to the forces that ‘push’ towards, or away from, activities framed as
environmentally sustainable.

### 2.2 Disciplinary Approaches to Household Sustainability

Several approaches have emerged as influential within the household sustainability literature. The first, and perhaps most prevalent, is what Waitt et al. (2012) call the ‘utilitarian’ approach, where the home is positioned as a site of “excessive consumption” (Gibson et al. 2013, p. 8) that needs to be curtailed in order for environmentally beneficial outcomes to be realised. This understanding is contingent upon the framing of individuals as passive consumers, rather than autonomous subjects with agency to negotiate increasingly complex lives (Burgess et al. 2003, Malpass et al. 2007, Evans 2012a). Such a perspective focuses on the transformation of ‘wasteful’ individuals into environmentally responsible citizens (Evans 2012a). The burden of responsibility is thus removed from governments and corporate entities. Systemic issues that impact the environment in damaging ways are left unchecked. In this context, solutions to environmental issues are often technological solutions to reduce waste such as energy-saving light bulbs, recycling bins, and compostable rubbish bags.

However, the utilitarian perspective does not acknowledge the systemic failures of capitalism to encourage environmentally sustainable practices and behaviours. As Gibson et al. (2011 p. 9), informed by Davidson (2010) and Knox-Hayes (2010), point out, this approach “keeps intact the institutions of capitalist democracy – markets, corporations, governments – and emphasises that households must govern their own actions in order to become ‘proper’ sustainable citizens”. Economic (and environmental) concerns are not the only motivators that underpin the purchasing decisions of households. These must be juggled alongside other imperatives that may have more immediate impacts on individuals and families. As Gibson et al. (2011) remind us, households are social assemblages that sustain a range of subject positions, affects, bodies, and emotions (see also Blunt & Dowling 2006). Furthermore, as Dowling and Power (2010) have discussed, materials and practices deemed to be ‘more environmentally sustainable’ may be difficult to implement because they come at the expense of embodied experiences of hominess, sense of self, and feeling of belonging. A greater understanding of these negotiations is therefore important in order to examine the roles that households could play going forward in responding to a changing climate.
Hence, many researchers have turned to other approaches. A visceral perspective has emerged as important to understanding how sustainable – or unsustainable – behaviours are interwoven into the fabric of everyday life and lived experience (Dowling & Power 2010). This focus on viscerality is an emerging strand in geographies of food waste, a perhaps unsurprising trend given the fact that food is often viscerally and materially experienced, traversing the boundary between the body and the outside world. For example, Waitt and Phillips’ (2016) work on food waste and domestic refrigeration offers one illustration. Using a visceral and material lens underpinned by post-structuralist feminist notions of affect and embodiment, they highlight how “affective social relations and subjectivities co-constitute embodied understandings and materialities of foods-becoming-waste” (p.5). Thus, Waitt and Phillips (2016) point to the importance of thinking about refrigeration as an embodied practice. They highlight how food waste is an enacted, rather than a purely socio-technical practice. Accordingly, food waste ‘solutions’ predicated on market forces and/or technological innovation may be doomed to failure. Turner (2019), offers the notion of ‘convivial dignity’ as a means of rethinking how food waste is (re)produced and how “more ecologically attuned worlds” can be created (p. 45). Turner (2019) advocates that this can be achieved through relational flows of affectual, emotional, sensorial, and visceral forces circulating between and through bodies. Central to this concept is the rejection of the notion of bounded entities and an emphasis on “the mutual vulnerabilities that are brought to the fore when we recognise the necessity of our togetherness-in-relation” (p. 43).

There are several other strands of work within the household sustainability literature. First is Gibson et al.’s (2011) cultural economy approach. Their framework seeks to move beyond the positioning of household sustainability as an issue of consumption and the market rather than thinking of culture and economy as separate, independent entities. Such an approach uses the lens of cultural theory to examine the economic dimensions that shape household sustainability, and “traces qualitatively the in situ relationships that unfold between humans, technologies, other living things, institutions and overarching ideologies” (p. 4, italics in original).
Second is a socio-technological approach concerned with technical regimes and social institutions rather than on individual agency and decision-making (Waitt et al. 2012). Shove’s (2003) socio-technical systems approach, for example, brings to the fore how tools and technologies (re)make everyday household practices. Social practice theory (which argues that practices are produced through assemblages comprising meanings, competencies, and materials (Shove, Pantzar & Watson 2012)) provides a counterpoint to environmental psychology and environmental behaviour approaches (Poortinga, Steg & Vlek 2004). An environmental psychology approach is predominantly quantitative and employs a mostly cognitive-oriented perspective to explore how behaviours can be changed to more pro-environmental practices (Hobson 2006). Shove’s work has also shaped the ways in which many researchers have tackled the topic of household sustainability. For example, Evans (2012a, 2012b) explores issues of domestic food waste through a social practice theory lens.

However, common across these strands of literature is an absence of ethnically diverse voices, even though including their perspectives can offer insights into alternative imaginings of domestic environmental sustainability. Ethnic minorities are rarely visible in this research, despite their experiences and environmental knowledges having the potential to illustrate how food waste may be differently embodied and discursively framed. The thesis seeks to address this oversight by working with migrants from PNG.

### 2.3 Migrants in Sustainability/Climate Change Research

Few studies directly examine the ways to understand the relationships between migrants, household sustainability and wider knowledge of environmental issues (Clarke & Agyeman 2011; Klocker & Head 2013). Accordingly, migrant voices are largely absent from a household sustainability literature that often positions ethnic Others as being vulnerable victims of a changing climate. Migrants are rarely discussed in terms of their agency or their environmental knowledges and capacities, despite the valuable contributions that these could make to how we understand and perform environmental sustainability. In climate change studies, migrant populations are addressed predominantly in terms of patterns of settlement, population dynamics, and the environmental motivators that force them to seek homes elsewhere (e.g. Campbell and Warrick 2014, Hugo 2011). Their subjectivities and materialities are almost entirely
overlooked.

Clarke and Agyeman (2011) draw attention to this empirical gap in their work with African American and minority migrant ethnic communities in the United States of America (USA) and point out that such communities need more representation in sustainability research. Their own study focused on how these communities negotiate and discursively construct their and others’ environmental responsibilities. This work gave specific attention to how migrant ethnic minorities frame the environment in conversations and the implications of this for sustainability planning and policy in their communities. Clarke and Agyeman (2011) make it clear that race and culture do have a noticeable impact on how migrant groups construct their environmental identities and responsibilities.

Klocker and Head’s (2013) call for Australian sustainability research and policy to include the voices of diverse cultural and ethnic communities supports Clarke and Agyeman’s (2011) position. Klocker and Head’s response to this gap in disciplinary knowledge is how a better understanding of the environmental knowledges and expertise of diverse ethnic minority groups could contribute to current environmental debates in Australia. They point out that the ways in which ethnic minority migrants view Australia’s environment are often underpinned by diverse understandings. Furthermore, these understandings of the environment are often overlooked not only within academia but also within environmental and natural resource management debates. In discussing household sustainability, Klocker and Head (2013) are critical of how the migrant is largely absent from this literature, which tends to focus on Anglo-European experiences, discourses, and bodies.

Klocker and Head’s call to action echoes Maller’s (2011) work on migrant households’ use of water and energy, which examined the practices and behaviours of individuals of diverse ethnic origins and linked them to issues of environmental sustainability in Australia. She argues that there is little understanding of how Australians of diverse ethnic and cultural backgrounds conceptualise sustainability, climate change, and waste and advocated more research to engage with migrants, particularly in the context of the home. There is a newly growing literature that addresses this gap, such as the work of
Waitt (2018) and Waitt and Nawroozipour (2018), who explored Iranian female migrants’ environmental knowledges of water, and Head et al. (2019) and Dun, Klocker and Head (2018), who examined the agricultural and environmental knowledges of migrants in Australia.

2.4 Food Geographies: A Turn to the Visceral, Embodied, and Affectual

In the past decade, scholarly interest in food geographies has expanded considerably (Cook et al. 2013). This growth has been accompanied by a turn to the visceral, the embodied, the affectual, and the material. Goodman (2016), inspired by Lorimer’s (2005) concept of the ‘more-than-representational’, defined this turn as a ‘more-than-food’ approach. In framing food this way, scholars are increasingly acknowledging that food is “liminal, it is shifting, it is fully situated in temporal, social, material and spatial relationalities” (Goodman 2016, p. 259). Food is so much at the forefront of our lives that the language of food is deeply embedded in everyday practice (Probyn 2000). Our identities, social relations and societal discourses are commonly framed through culinary imagery and metaphor. For example, we ‘are what we eat’ and ‘cool as a cucumber’, we know that ‘the way to a man’s heart is through his stomach’, and dissimilar objects or ideas are often described as being ‘as different as apples and oranges’. Such metaphors suggest that how we make sense of the world around us and our place within it is often mediated through our relations with food. Furthermore, narratives about food reflect wider political and social issues (Cook et al. 2006).

We can often forge an understanding of wider social practices, affects, and materialities through food. Because food comprises a complex nexus of roles and relations it is simultaneously positioned as a molecular, bodily, social, economic, cultural, global, political, environmental and physical phenomenon (Cook et al. 2006). It has become integral to conversations about gender, environment, health and race and thus can help connect these perhaps otherwise disparate subfields (Goodman 2016). Hence, in Cook et al.’s (2013) words, food “offers rich, tangible entryways into almost any issue in which you might be interested” (p. 417).

The visceral is one of the key lenses through which geographers are rethinking food, by drawing together notions of affect, materiality and emotions. The visceral is positioned
by Longhurst, Johnston and Ho (2009) as an extension of embodiment and material geographies. It can be defined as “the sensations, moods, and ways of being that emerge from our sensory engagement with the material and discursive environments in which we live” (Longhurst, Johnston & Ho 2009, p. 334). As such, the visceral encompasses not only the senses themselves (the tastes, textures and aromas that we encounter in any given food-related experience) but, more importantly, the emotional and affectual responses that such senses engender within us. Affective responses are commonly framed as existing ‘pre-social’ and ‘pre-conscious’ – that is, they are produced by and through the body before the influence of the social, political and economic – while emotions have been positioned as conscious (Ahmed 2004, 2014; Probyn 2004). Some scholars argue that emotion and affect are separate (Massumi 2002), but others claim that emotions and affect are intertwined (Ahmed 2004, 2014; Probyn 2004), co-constituted and mediated through the fleshy corporeality of the body. A visceral approach is aligned with the latter thinking.

Feminist scholars have deployed a visceral framework to understand better how power circulates through and between bodies. A visceral approach builds on understandings of knowledge as power, produced through discourses that discipline bodies in ways that benefit hegemonic agendas (Butler 1993). Hayes-Conroy and Hayes-Conroy (2010), identify that the visceral offers three main analytical projects that can help to extend feminist understanding of power as knowledge:

“First, visceral geography advances a greater understanding of the agency of physical matter, both within and between bodies. Second, visceral geography moves beyond static notions of the individual (body) and toward more contextualised and interactive versions of the self and other, combining both structural (political-economic) and post-structural (fluid) concerns. Third, visceral geography encourages scepticism of boundaries — e.g. mind/body, representation/non-representation — not through a complete dismissal of such dualisms but through insistence on the imagining and practising of our (political) lives in, through and beyond such tensions” (p. 1274)
These three projects very much reflect important threads in feminist geography. As Longhurst, Johnston and Ho (2009) point out, the visceral plays an important role in how socio-political relations are shaped. A visceral approach challenges the notion of bodies as surfaces upon which social meanings are written and instead rethinks bodies as relational and unbounded. Some feminist scholars use the visceral as a starting point to unpack how subjectivities, power, and bodies co-constitute each other (Probyn 2000).

Longhurst, Johnston and Ho (2009), for example, deploy the visceral as a lens through which to examine migrant women in New Zealand and their affectual/emotional relations with place and space. They argue that the visceral is central to the construction of identity and belonging for migrants adapting to an unfamiliar country. They argue that the concept of the visceral helps understand how migrants forge connections, or not, between the disparate geographies of ‘here’ and ‘there’ that migrants navigate when they build a home in a new country by invoking certain emotional responses that mobilise particular subject positions, temporalities, and territories. Their work highlights how the visceral, alongside the notion of affect, has the power to re-frame and re-imagine the diasporic subject. Therefore, food, and our visceral experiences of it, plays a central role in how we understand the Self and Other and can move people to act in certain ways. Hayes-Conroy and Hayes-Conroy (2008) also discuss the usefulness of a visceral lens when examining food, stating that:

“Eating - due to its sensual visceral nature - is a strategic place from which to begin to understand identity, difference, and power ... studying food in this way could allow geography to make a powerful link between the everyday judgements that bodies make (e.g. preferences, cravings) and the ethico-political decision-making that happens in thinking through the consequences of consumption” (p. 462)

How we experience the visceral is mediated by the senses. The senses have long been an important consideration in much food geography research. Hayes-Conroy and Hayes-Conroy (2008) emphasise that it is the sensory organs through which we experience the visceral, (re)creating complex affectual relations with space and place.
For Hayes-Conroy and Hayes-Conroy, tasting is a process of ascribing meaning to and emotional connection with the things that we eat, as well as the act of eating itself. The consumption of food is not the only site at which these emotional and affectual relations are forged. Preparation and cooking (Johnston & Longhurst 2012, 2013; Longhurst, Johnston & Ho 2009), and disposal (Evans 2012a) are all embedded in emotional and affective relations. Such research positions the sensory as key to the mobilisation of people’s food-related choices (Hayes-Conroy & Hayes-Conroy 2008). Yet, broader politics of food have generally not recognised this. As a result, the sensory/visceral is all too often ignored in these conversations.

In sum, a visceral approach underscores that our sensory entanglements with food (and the artefacts and practices associated with food) have a profound impact on how we navigate the complexities of everyday life. For this project, which investigates the mundane, quotidian food practices that comprise everyday lived experience for PNG migrants in Australia and Aotearoa New Zealand, the visceral is therefore a powerful means of unpacking the corporeal implications of food practices through the interplay between affects, emotions and subjectivities and place.

2.4.1 Eating Home: Food as a Device of Migrant Identity Management and Home-Making Practice

Substantial research investigates the relationships between food and migrants. Food as a symbol of ‘home is a salient theme in this literature. Furthermore, food practices enable connections to be made between the past and the present, the global and the local, the familiar and the new (Brown, Edwards & Hartwell 2010; Diner 2001; Duruz 2010; Johnston & Longhurst 2012, 2013; Parasecoli 2014). For migrants adjusting to the unfamiliar cultural norms and expectations of a new country, food and its associated practices can invoke homely memories of their country of origin, where these norms and expectations were understood and a part of the everyday fabric of life. Food, the senses that we engage in the acts of consuming and preparing it, and kitchens are strongly associated with memory (Collins 2008, Diner 2001, Law 2001, Meah & Jackson 2016). Therefore, as Ahmed (2004) explains, objects – including food and its associated commodities – are affectual in that feelings of sadness, joy and social longing are embedded in their materiality (Johnston & Longhurst 2012).
How migrants’ home-making practices are shaped by the ways in which they buy, prepare, and eat food is a key research focus (see Duruz 2010; Hage 1997; Johnston & Longhurst 2012, 2013; Longhurst, Johnston & Ho 2009; Parasecoli 2014; Raman 2011). In Hage’s (1997) work on food and the cultural interactions of Lebanese migrants in Sydney, he examines migrants’ attempts to make themselves feel at home in a new country. One strategy was to incorporate varied food practices such as going to speciality grocery stores catering to ‘ethnic’ tastes. Another was cooking food that is ‘from home’. Yet another was engaging in ‘traditional’ rituals as they eat the dishes that they have prepared. These efforts to replicate ‘home’, and the feelings of nostalgia that they arouse, have often been positioned as evidence of homesickness. Rather, Hage argues that in retreating to an imaginary homely past, in order to avoid engaging in the present time and space, migrants are in fact establishing “affective building blocks” (1997, p. 104). These ‘affective blocks’ form the foundations of creating new homely spaces in the country of settlement. The role of food is then often vital to migrants’ shaping of space as comfortable and familiar. However, food waste and storage are rarely addressed in this work, which tends to focus on preparation and consumption.

Johnston and Longhurst (2012, 2013), in a similar vein, investigate the connections between food, eating and home for migrant women, studying particularly the lived experiences of place, power and subjectivities. Alongside this focus, they also examine the emotional and affectual aspects of culinary practice (particularly cooking and eating). They point out that food is integral to the emotional geographies of new migrants navigating an unfamiliar context. Food shapes migrants’ feelings about belonging not only in the ‘here and now’ but also in the distant spaces of the past and overseas country of origin (Johnston & Longhurst 2012). Looking at migration stories through a visceral lens therefore “offers a place from which we can begin to unravel ideas about subjectivity, bodies, power and difference” (Longhurst, Johnston & Ho 2009, p. 335). The research in this thesis follows in Johnston, Longhurst and Ho’s conceptual footsteps by using a visceral lens to examine migrant subjectivities. However, unlike Johnston, Longhurst and Ho, for whom food preparation and eating is the focus, the thesis looks instead to how food moves through the home, from procurement to disposal.
Social relationships sustained by food for migrants are a key research strand. For example, Parasecoli (2014) found that food-related activities are the means through which those of ethnic minority backgrounds can interact with the unfamiliar Otherness of new cultural environments, creating relationships, communities, and networks that might not otherwise exist. In so doing, migrants can transform spaces that might seem alien and threatening into culturally meaningful spaces of comfort and security (Parasecoli 2014). The act of sharing food and the feelings that are associated with it can foster affectual ties between migrant women not only within the same cultural community, but also between individuals of disparate ethnicities (Johnston & Longhurst 2012, 2013; Collins 2008). Food is accordingly a tool through which friendships and connections are forged and group identities and affiliations constructed and maintained (Collins 2008). Meals from ‘back home’ – and particularly the affective and emotional responses triggered through practices of sharing them – have the power, then, to unite (and also, paradoxically, to divide). In re-producing national (or other) identities and in forging a sense of belonging and connection, food can also “reinforce social and spatial differentiation” (Collins 2008, p. 163). Food plays a vital role in sustaining not individual but collective identities in migrants’ lives. Therefore, this thesis examines the role of food in the social relations among PNG migrants, and how this shapes (or does not shape) sustainability practices.

2.4.2 Food and Sustainability

The link between food and household sustainability is a key research focus (Turner 2019; Waitt & Phillips 2016; Evans 2012a, 2012b). This scholarship has arisen out of critiques of food-related sustainability debates that focused on food security (see Schmidhuber & Tubiello 2007; Lobell et al. 2008; Brown & Funk 2008), sustainable agricultural practices (Goodland 1997; Carolan 2006a, 2006b; Piso et al. 2016), and food waste at the commercial scale (Brancoli, Rousta & Bolton 2017; Deishin & Tongarlak 2017). It is only relatively recently that research has turned to the household and, particularly, the body. Given food’s social, cultural, and biological importance, the household should be considered a vital component of how we enact (or fail to enact) practices that are environmentally sustainable. Important topics in this area include food security and systems, community gardens, and food waste.
Food sustainability issues are often considered from a food security or systems perspective and many studies consider how the changing climate effects food production. In this work, agricultural production and the pathways of food from the field, paddy or paddock to the consumer, are examined. This body of literature often uses a political economy framework that focuses on issues of food availability (Campbell 2017). Such work often focuses on Majority World communities in regions such as South Asia, Southern Africa and Pacific Islands, where it is non-white bodies that are most likely to be food-insecure (see Addo, Bessah & Amponsah 2014; Shahed 2015; and Tesfaye et al. 2015, Campbell 2019 for recent examples). In comparison, relatively little work addresses how the changing climate may affect food security in the Minority World. Concerns are usually centred on (often international and political) systems of food production and access. Domestic food practices at the scale of the body and household are missing. That said, Hayes-Conroy and Hayes-Conroy (2013) called for a feminist political economy approach that acknowledges structural, representational and visceral forces at play when it comes to the question of food access.

Community gardens are a burgeoning research field. Community spaces, such as gardens, are key sites of environmental action, where a collective of ‘ordinary citizens’ can perform a meaningful response, even in a small way, to global climate change and other sustainability challenges (Clavin 2011). Within this field, some scholars argue that community gardens, as sources of fresh produce, have the potential to improve waste management and localise food production. Others point to the potential benefits that arise from reducing food miles and the resulting carbon emissions from transporting goods over long distances. Furthermore, community gardens have the potential to pose a possible solution to the growing problem of food deserts (usually low-socio-economic areas within developed regions, where accessibility to adequate food supply is poor (Clarke, Eyre & Guy 2002)) by making accessible fresh fruits and vegetables that otherwise would be difficult to obtain. Clavin (2011) points out that community gardens can be examples of ecological sustainability, challenging in radical ways how we view and use resources. Turner (2011), for example, addresses the embodied dimensions of community gardens. In her study of seven community gardens in the Australian Capital Territory, she argues that people’s relationships to the soil and the plants in their plots, often shape their connections to broader environmental concerns about climate change.
What appears to be missing from much of the work on community gardens, however, are the embodied and visceral knowledges of migrant and ethnic minority participants in these spaces. Furthermore, this body of research tends not to examine food waste and/or disposal as sustainability activities, even though they are intrinsically linked to community garden practice (e.g. composting).

What people eat is a key research question within the food sustainability field. Gibson et al. (2013), for example, discussed the myriad of sustainability issues bound up in the production of a ‘typical’ Australian dinner: Spaghetti Bolognese. In analysing each component of the dish, from the tomatoes to the ground beef to the pasta, the authors highlight the ways in which an everyday meal uses vast quantities of resources. However, they do not discuss the food practices of non-European Australians. Their choice of meal for analysis – Spaghetti Bolognese – is one eaten primarily in white Australian homes, where it is often considered to be a staple dish. The reason for this choice is obvious – it is a very popular meal in Australia, with the average adult consuming over 11kg of pasta annually (Gibson et al. 2013). But for many people in Australia who are of an ethnic minority background – such as those from the Pacific – it is unlikely that many Western meals like Spaghetti Bolognese would be a typical part of their everyday diet. A gap in the literature exists at the intersection between household sustainability, Pacific food practices, and migration.

Preservation practices are addressed in the household sustainability literature. Gibson et al. (2013) discuss the role of the refrigerator, an integral component of modern-day food culture. They discuss the direct ways by which refrigerators contribute to the changing climate through high energy consumption and the use of coolants that act as greenhouse gases. In addition, they argue that the refrigerator “animates the landscape of household sustainability” (p.118) by changing how people purchase food. Furthermore, they underscore the gendered dimensions of household sustainability. In Australia, women are allocated most of a household’s food work, including those centred on mechanical refrigeration. This is a particularly important point to make. Few studies about household food sustainabilities incorporate the element of gender, despite food work being a gendered activity.
Food waste is topic central to the research of food sustainability. This strand has significant traction both in policy and in research. Research on food waste ranges in scope from the level of the nation to the level of the individual. In terms of policy, until recently most government and NGO reports overlooked household food waste almost entirely (see WRAP 2007, DEWHA 2010, EPA 2010). Mason et al. (2011) highlight this point at the outset of their report on the food waste dilemma in Australia.

The food waste literature is also expanding. Commercial food waste is the primary focus, specifically supermarkets, food-manufacturing companies, agricultural processes, and hospitality businesses such as hotels, cafes and restaurants (see Juvan, Grün & Dolnicar 2017; Gruber, Holweg & Teller, 2016; Heikkilä et al. 2016 for some recent examples). Such research shows a tendency to use a quantitative methodology and is often framed using scientific theoretical paradigms. Thus, it rarely seeks to better understand experiences of those employed within the food sector (see Salhoefer et al. 2008). For example, Juvan, Grün & Dolnicar (2017), in their analysis of the food waste produced by hotels in the travel industry, used descriptive statistics as their means of data analysis, and a scientific, hypothesis-driven method to discuss their results.

Williams et al. (2012) examined the relationship between food packaging and subsequent food waste, using a questionnaire to identify the reasons for wasting food, coupled with a food diary that focused on the amount of food wasted. Their analysis followed a quantitative framework with the aim of identifying correlations between purchasing frequency, packaging sizes and food waste (Williams et al. 2012, p. 143). Qualitative approaches appear to be relatively rare. Furthermore, ethnic minority cultures are afforded little voice in research of this nature, which is based primarily in Europe.

Consumer research addresses the question of food waste. Primarily, this research is informed by psychological approaches that seek to better understand the individual decision-making process. Consumer behaviour, then, is at the centre of this work. An example, unusual in the fact that it is based in a Pacific Island context, is Louis and Datta’s (2016) research, which explored the attitudes and purchasing preferences of supermarket shoppers on the Hawai’ian island of O’ahu, which includes the state’s capital city, Honolulu where the great majority of produce is shipped in from the United
States mainland. Researching, the food movement in this setting, the authors identified diverse reasons behind widespread consumer support for local food growers. They found that consumers’ decisions about whether to purchase local food was defined by two main attributes: (1) price and accessibility, and; (2) ability to identify that any given product was local. Furthermore, the prohibitive cost of many local food options priced those who are less wealthy out of the local food movement. They go on to identify how consumer food choices are related to cultural expression. Accordingly, their research is one of few studies that specifically examines how food choices are made across cultures, though their analysis of this is limited. However, Louis and Datta’s research is informed largely by an economic paradigm that fails to acknowledge the embodied and material considerations that influence people’s purchasing and food consumption decisions. Interestingly, however, theirs is one of very few studies that are based in a Pacific Island context, though it should be remembered that Hawai’i is characterised by a very ethnically diverse community and that its indigenous people are no longer the majority population.

2.4.3 Food in the Pacific

To date, Pacific – and Papua New Guinean – food cultures have been largely neglected by the academy, outside of early anthropological, ethnographic accounts (Kahn 1986, Kahn & Sexton 1988, Mintz & Du Bois 2002, Whitehead 2000). Food studies that are situated in the Pacific today typically fall into two main themes: a medical perspective informed by a Western neo-colonialist paradigm of nutrition and health (see Kuzma et al. 2013; Snowdon et al. 2013; Webster et al. 2016); and a focus on fisheries and agricultural management, often linked to food security (Bell et al. 2018, Barnett 2019). Both of these research themes tend to overlook the role that food plays in the social lives of many Pacific communities. Furthermore, the embodied, the visceral, and the affectual are all too often absent in these conversations. In research that looks to migrant populations of Pacific peoples living outside of their home countries, most work focuses on the United States of America and Aotearoa New Zealand. The Australian context is, by comparison, not commonly discussed, despite the geographical proximity of the country to the Pacific, and to Papua New Guinea in particular.

Pollock’s (1992) research identified that food is a prominent form of social currency
amongst Pacific peoples. She pointed out that while food occupies two roles simultaneously: the biological and the social. In the Pacific, including many PNG cultures, it is the social dimension, rather than the biological, that holds paramount importance. Food is an indicator of status, a means of showing gratitude and goodwill to others, and a way to demonstrate strength of feeling and empathy among social groups. Its symbolic, social value plays a crucial role in community relations in many Pacific cultures, including many of those in Papua New Guinea.

Pollock’s work is one of the very few examples that look at ‘modern’ Pacific food cultures, and yet it was published almost thirty years ago – there appears to be little, if any, research that extends her work into the twenty-first century. Since the publication of her book, *These roots remain: Food habits in islands of the central and eastern Pacific since Western contact* (1992), the economic, political, and social contexts of the Pacific have undergone significant change. Crucially, the food practices of many Pacific Islanders are adapting to an increasingly ‘Western’ diet. While some foods such as rice and cabin biscuits were introduced in the early colonial period, more recent food imports to the region such as mutton flaps in the south Pacific (Errington & Gewertz 2008, Gewertz & Errington 2010) and turkey tails (Singer 2014) in the north Pacific have become popular sources of protein. This is particularly the case in cities where fish stocks are often depleted. In addition, instant noodles have become a very cheap, convenient and popular source of carbohydrate in many parts of the region (Errington, Fujikura, and Gewertz 2013). Increasing numbers of people in cities don’t have access to freshly grown foods and some products such as instant noodles are cheaper but less nutritious than traditional sources of carbohydrates. Thus, much of the literature on these changes has focused on the nutritional implications of food imports. However, the voices of Pacific peoples are often missing from these accounts both in terms of understanding why food-related health issues are so prevalent or in terms of finding solutions. The *culture* of food is a dimension missing in much of this research, which tends to use a western medical paradigm in order to examine how ‘healthy’ Pacific diets are. A western medical approach suggests that certain (culturally embedded) practices are either helpful or harmful. Furthermore, it fails to incorporate the lived realities and corporeal experiences of Pacific peoples, and Papua New Guineans in particular, in relation to their food practices.
Food security is another theme evident in contemporary Pacific food research. Food security is often linked to climate change and its impacts, both existing and yet-to-exist. This is unsurprising, given that the Pacific Island states are among the most exposed to the effects of global environmental change. Melanesia is a focal point of this research (see Barnett 2011; MacCarthy 2012; Campbell 2019; Lowitt, Saint Ville and Hicky 2015). Indigenous Pacific food systems were largely sustainable (see Clarke’s (1977) classic work on “structures of permanence”). Working against Indigenous food systems is both a history of colonialism and of the incorporation of the Pacific Island states into global capitalism. Under a regime of mercantile capitalism of the 1800s, plantations of cash crops including coconuts were established in many Pacific colonies. Plantation agriculture displaced significant areas of food producing arable land (Campbell 2019). In the post-colonial era, most PICTs are heavily reliant on food imports (e.g. Connell, 2019).

Fisheries management as a response to food insecurity is one research area that has received much academic interest. Weng et al. (2015), for example, review the context of fisheries development in the Pacific, with particular focus on pelagic fish species. The authors focus on how the challenges of climate change, food security and economic development might impact the policies that govern fisheries management in the Western and Central Pacific. Their arguments adopt a scientific approach that focuses on the fish themselves and economic imperatives. With considerable focus on the biological and scientific (fish populations etc.), this is a lens that is evident in much of fisheries research. For example, Nesbitt and Moore (2016), investigated how species and population biodiversity loss in Indigenous fisheries is a key component of food insecurity in Pacific communities, focusing on the size and stability of catch. Valmonte-Santos, Rosegrant, and Dey (2016) analysed the fisheries policies in Fiji, Solomon Islands, Vanuatu, and Timor-Leste in the face of a changing climate. Dueri et al (2016) modelled the impacts of climate change and fishery management strategies on skipjack tuna populations. Evident in most of these studies is an absence of the individuals who form the fisheries industry in this region. Rather, the focus tends to be centred on political, economic, and ecological systems that look to the macro scale. Missing, is fisheries management research at the scale of the individual self – lived experience, materialities, subjectivities, and affectual relations are almost entirely overlooked.
Other fisheries management research approaches use a more community-oriented perspective. For example, Bennett (2014) examines the experiences and lives of Solomon Island villagers who have customary tenure of reefs in rural villages. He argues that, in order to manage marine resources more sustainably, a shift is needed from focusing on the resources themselves to focusing on the issues affecting the communities concerned. Aswani and Hamilton (2004) look at how Indigenous ecological knowledges of Solomon Islands’ villagers can be integrated into marine and social science in efforts to conserve the bumphead parrotfish. Their study emphasises the importance of diverse environmental knowledges in the conservation of resources. Respect for diverse environmental knowledge is becoming increasingly important in fisheries management research (Aswani & Hamilton 2004). Pacific fisheries research is increasingly turning to incorporate the experiences and lived realities of villagers, as seen in the critical social science approach adopted by Bennett (2014). That said, it appears that absent from this work is a post-structural feminist framework that looks to the corporeal and the sensory.

This research into fisheries management provides important insights into some of the food security issues that face Pacific Island states. Most Pacific Island states rely on fish. Yet, it should be remembered that many PNG peoples are not from coastal areas and their sources of protein are likely to be different. More research into food security beyond fisheries management is needed.

2.5 Key Concepts and Approach

This section introduces the key concepts that have shaped this research. Detailed discussion of the key concepts is embedded in each of the formative chapters. Here I provide a brief overview of the framework that informs the analysis. In the thesis, to rethink how food waste is always a relational achievement, I introduce the notions of the food provisioning, preservation, and disposal assemblages. I offer a corporeal feminist interpretation of Deleuze and Guattari’s (1987) assemblage thinking that brings the visceral, alongside the related concepts of affect, embodiment, and emotion, to the fore. In so doing, I conceive of food and food waste as a ‘becoming’ that is ever-evolving through the sensory entanglements between human (and more-than-human) bodies, and the affectual relations that emerge as a result.
Assemblage thinking draws attention to the enactment of ongoing simultaneous processes of self-making and world-making (Anderson et al. 2012). In drawing upon Deleuze and Guattari’s (1987) assemblage thinking, the thesis examines how the making of self and food waste is continually being (re)produced through ongoing processes of becoming, assembling, and reconfiguration of both the material and non-material (Anderson et al. 2012). An assemblage is therefore an “arrangement … of heterogenous elements” (Nail 2017, p. 22) that work together and alongside each other to produce a “working order”. After Deleuze and Guattari, assemblages have both a material (actions, things, bodies e.g. physically embodied) and expressive content (affect, emotion, ideas e.g. intangible or ideological) (Buchanan, 2015). At the same time, assemblages are not fixed or static, but fluid and ever-changing. When conceived as assemblages, food provisioning, preservation, and disposal are continuously produced by the ways in which material objects (such as the fridge, human and non-human bodies, and waste itself) and ideas (notions of freshness and temporality etc.) intersect and transmit affect to one another. The notion of assemblage invites us to think about how food waste may be performed in different ways rather than as something already made.

Two aspects of food becoming waste are conceived through these ideas. First, assemblage thinking enables me to highlight the varied socio-material relations that make food waste possible. Second, using assemblage thinking I illustrate how food waste is a relational process that, through the body’s interactions with the world, increases or decreases people’s capacities to act (Gregory et al. 2009, p. 8; Shouse 2005), for example when food shopping or throwing away leftovers. That assemblage thinking encourages us to think about food and food waste as fluid and open to moments of change and innovation (Boyer & Spinney 2016) is particularly helpful for research situated in the context of migration. Migrants in their ‘new’ country may encounter different social norms and materials, including those around food. Possibilities exist therefore to make, remake or undo understanding of food and food waste in the context of the processes of making sense of self and place.

A related concept to assemblage is that of ‘the refrain’. After Deleuze and Guattari (1987), Grosz (2008, p. 52) understands the refrain as “a minimum of liveable order to a
situation in which chaos beckons”. Hence, the concept of refrain points to Deluze and Guattari’s (1987) conceptual starting point, that chaos exists in the world.

Deleuze and Guattari (1987) highlight three interrelated processes in explaining how refrains operate to produce liveable order from chaos. First, as discussed above, are the rhythms and repetitions that (re)produce a calming, stabilising centre amidst disorder, confusion, and chaos. Second, these rhythms and repetitions are carefully negotiated in order to organise a space in such a way that demarcates it from chaos. Thus, space can be territorialised as home, felt as both safe and secure. However, a sense of order that comprises both self and our worlds is a precarious achievement of the rhythms that comprise the refrain. At the same time, the repetitions that territorialise space as home have the potential to be de-territorialised if the rhythms become destabilised. Third, once space has been established as secure, opportunities arise to open up the territory and invite others (human and non-human) to participate in existing rhythms and repetitions. However, doing so runs the risk of disrupting, through error, these rhythms and repetitions and thus letting chaos back into the territory. As Deleuze and Guattari (1987) note, it is important to acknowledge that these three processes are not sequential. Rather, they exist alongside each other and work together to produce what they call ‘the refrain’.

In a context of upheaval and uncertainty, such as migration, the notion of the refrain offers opportunities to understand how people forge a sense of self and home. The thesis explores how the refrains oriented around food and food waste help to territorialise space as home and stabilise subjectivities. The refrain is helpful for rethinking food waste as always relational, situated and provisional. Attention turns to the rhythms of food provisioning, preservation and disposal that can reduce or increase people’s capacity to act in ways that may have less or more devastating impacts on the planet.

To advance a corporeal feminist understanding of assemblage I build on the work of Grosz (1994), Longhurst (2001), Ahmed (2004, 2014) and Braidotti (2002). I do so in order to better understand how affects and emotions circulate within the food provisioning, preservation and disposal assemblages. Corporeal feminism challenges the masculinist privileging of the rational, disembodied mind at the expense of the
feminised body. It brings the body (its materiality, affects, emotions, and visceral experiences) to the fore, and rejects the idea that the mind and body are disparate phenomena (Grosz 1994). Environments and bodies co-constitute each other, and it is through bodies, affects, and emotions that the world is experienced and understood. Thus, a corporeal feminist lens is an example of assemblage thinking that highlights how food and food waste are always relational and not pre-existing. Furthermore, an important driver of the choices that people make in everyday life, is how subjectivities are expressed through, and felt in, the socio-material arrangements that comprise home, including those pertaining to food sustainability. I build upon this understanding of materiality, affect, and emotion by applying these notions to the context of migration and household sustainability. In bringing corporeal feminism into conversation with assemblage thinking, I highlight how affects, emotions, the visceral and the material mobilise people’s choices about food in making, remaking or unmaking home. I seek to illustrate how food sustainability in the home is relationally constituted at the crossroads of material and expressive forces that make up these assemblages.

2.6 Conclusion

This chapter has outlined the literature in the two often disparate fields of household sustainability and food geographies, before introducing the key concepts that underpin the thesis. The first section outlined the main disciplinary approaches to household sustainability to situate the thesis within broader conversations of domestic environmental knowledges. It began with an overview and critique of the ‘utilitarian’ framework that has shaped much of literature and charted some of the other strands of research that have emerged as a response to its limitations. I then discussed how migrant bodies and voices are largely absent from this body of work and how the thesis intends to help fill this gap in disciplinary knowledge.

The second section focused on food geographies. It offered an insight into the visceral turn therein that has brought to the fore bodies and the rethinking of power through emotions and affects alongside that of discourse. The role of food in the migrant experience was also discussed, with a focus on how it helped to constitute particular subjectivities, bodies, and places that made ‘home’ for those settling in an unfamiliar cultural landscape. This section also charted how food has been studied in wider
sustainability debates and provided some insight into the literature on food in the Pacific region.

In the third section, I presented a brief overview of the key concepts that have shaped the thesis. I illustrated how a corporeal feminist reading of assemblage that remains alive to the visceral, embodied, affectual, and emotional relations that circulate between and through bodies frames food and food waste as an always relational achievement. The notions of the refrain and rhythms extend this framework by considering how the house-as-home is territorialised in a migration context, and the implications that this has for domestic sustainable action. By thinking of food provisioning, preservation, and disposal as assemblages that produce a liveable order, insights can be made into how people are mobilised against or towards more environmentally beneficial domestic practices.

I have argued that migrant ethnic minority voices remain underrepresented in household sustainability research. Their environmental knowledges, particularly in relation to food and food waste, is an important gap in the literature. The chapter also highlighted the potential of using a corporeal feminist reading of assemblage to examine how food waste in migrant households is relationally constituted.

Before presenting the empirical findings in Chapters Five, Six and Seven, I next outline, in two chapters, the research design and methods. The first discusses the sensory ethnography that I used to collect data, informed by a talanoa-inspired research methodology and feminist understandings of mundane methods. The second discusses the recruitment strategy, the challenges that arose, and how I addressed these. Each chapter illustrates how the research design was shaped by the concepts discussed in this literature chapter.
CHAPTER THREE: LISTENING AND SHARING – DECOLONISING MUNDANE METHODS

3.1 Introduction

This chapter outlines the methodology used in this study. It demonstrates how post-structuralist feminism and decolonising knowledges have shaped my research practice. Drawing together these two approaches to method provides a counterpoint to, and critique of, the positivist paradigm that has dominated academic inquiry (Edwards & Ribbens 1998). In adopting such a methodology, I move away from epistemologies that emphasise impartiality to one that instead focuses on understanding difference and diversity (Adams-Hutcheson 2014) through interrogating how knowledge is constructed, and questioning essentialist understandings of truth, identity and power (Larner 1995). Furthermore, this methodology acknowledges that research can be messy and unpredictable, as the world that we seek to understand is in many ways “vague, diffuse or unspecific, slippery, emotional, ephemeral, elusive, or indistinct” (Law 2004, p. 2). It is therefore particularly apt for this project, which examines that which is rarely categorizable or predictable, including the material dimensions of waste and disposal, human emotions, affects, embodiments, sensorial capacities and visceral experience.

I incorporate a methodology that is alive to the more-than-representational dimensions of PNG migrants’ everyday food practices. This is in response to calls in the feminist geographical literature for research that goes beyond text and explores other modes of knowledge production and representation, which have all too often been overlooked by an academic epistemology that privileges the written and the visual (Turner 2016; Dowling, Lloyd & Suchet-Pearson 2017). Feminist scholars are increasingly using experiential methods and embodied encounters in their research methods (see Longhurst, Johnston & Ho 2009; Hayes-Conroy & Martin 2010; Waitt 2014 for some examples). However, this work is rarely framed in terms of the politics of the decolonisation of knowledge.
The chapter has several objectives. First, I acknowledge my positionality and how my embodied presence as a white/Asian researcher working with a community that has been colonised, has shaped all stages of this thesis, including fieldwork and analysis. Second, I argue the importance of incorporating a methodological approach that seeks to decolonise knowledge, particularly when working with Pacific communities for whom relationships with the Western academic enterprise have been characterised by a history of exploitation and disempowerment (Vaioleti 2006). Third, I discuss how, in employing a methodology attuned to the politics of the mundane and visceral practices of everyday life, it was possible to access intimate knowledges of food. Such knowledges are embedded in the private sphere of the home and thus not commonly revealed to the public gaze. Fourth, I outline the qualitative methods that I employed throughout the research process, including semi-structured interviews, participant photography, and kitchen insights. In so doing, I highlight why such techniques were appropriate for this study while acknowledging their weaknesses and how these were addressed by the research design. Fifth, I illustrate how the data obtained from this mixed qualitative method approach was analysed using narrative analysis, which makes possible insights into the visceral experiences and knowledges of participants. Finally, I briefly consider the ethics of the research.

3.2 Positionality

It is important that I acknowledge my embodied, affective, and discursive positioning in order to understand how knowledge is situated in the context of the study. As Temple and Young (2004) explain, “one’s position within the social world influences the way in which you see it” (p. 164) and thus it shapes how researchers collect, analyse and interpret data. However, positionality is not static or fixed (Adams-Hutcheson 2014). Rather, it is multi-faceted, subjective and fluid, the salience of particular characteristics ebbing and flowing as we negotiate complex and changing contexts. Accordingly, here I discuss several ways in which my positioning has been interwoven into the research relationships and encounters.

I wish to acknowledge my ethnic embodiment: I am a Pākehā (non-Māori) New Zealander / Thai woman in my early thirties from New Zealand, who migrated to Australia in 2015 to undertake postgraduate study. New Zealand’s colonial history has
parallels across the Pacific, including in Papua New Guinea. The oppression of the Indigenous Māori people has made it possible for Pākehā New Zealanders like me to live there. My ethnic embodiment (as a (partly) white New Zealander) and how it is situated in space is in itself a performance of colonial power that must be acknowledged. Furthermore, as I am a researcher working with a community of which I am not a part, I present the participants’ voices through the lens of my own experience and values (Winchester 2005), which have been largely shaped by a Western, colonial education and social system. For much of the time, I felt that my understanding of Papua New Guinean cultures was limited and as a result felt that our interactions were a process of co-learning and co-constituting knowledges together (see section 3.3 below). Thus, the distribution of power within these encounters involved quite a bit of give and take. In addition, several participants made the observation that I was not full Pākehā and while it is difficult to state with certainty, I felt that our shared difference from the dominant cultural norms of Australia and Aotearoa New Zealand provided a sense of commonality that moulded the comfortability of our conversations.

Like many of the participants, I came to Australia for education: the undertaking of a PhD for which this thesis constitutes the primary output. That most of the participants are also studying at the post-graduate level offered a point of connection over shared experience that helped to foster a sense of rapport between us. As several participants were looking themselves to conduct large research projects of their own by way of Masters’ programs, my experiences as a PhD student were valuable to them and any advice/information that I gave constituted a reciprocal sharing of knowledge from which they gained some benefit. Of course, this was not the case for all participants, as not everybody who was a part of this research was a student, let alone a student undertaking post-graduate studies. However, my positionality as a post-graduate student affected my engagements with participants in ways that enriched interaction and promoted positive relationship building.

3.3 Decolonising Knowledges: A Talanoa-Inspired Approach

As mentioned above, feminist scholars have well documented that the academy is dominated by a Western masculinist paradigm that prioritises detachment, objectivity and neutrality in research (Edwards & Ribbens 1998). This position is also argued in
work by and with First Nations scholars (in Australia and New Zealand, as well as in other states) such as Smith (2012), Sherwood (2010) and Plater et al. (2017) to name a few. Personal relationships between researchers and the researched are according to this model undesirable, for they lack the objectivity that is a central principle of the rationalist epistemology. It is important here to note that traditional, quantitative methods are embedded, for the most part, in a rationalist framework for which ‘validity’, ‘impartiality’, and ‘reliability’ are principles of paramount importance (Carter & Delamont 1996; Hesse-Biber, Gilmartin & Lydenberg 1999) without which the quest for ‘accurate, factual truths’ (Powell 1996) is compromised. From this viewpoint, subjective experience is eschewed and relationships between researched and researcher are positioned as one-sided, where the role of the former is to be acted upon as a passive subject with limited agency (Falconer Al-Hindi & Kawabata, 2002). Implicit in this positioning is the centrality of power and control to upholding the inviolable principles of rationalist research. However, such an approach does not often work well in Pacific cultural contexts, where for many cultures relationships are at the heart of most activities and interactions. As Vaioleti (2006 p. 22) points out, “research methodologies that were designed to identify issues in a dominant culture and provide solutions are not necessarily suitable in searching for solutions for Pacific peoples, whose knowledge and ways of being have unique epistemologies as well as lived realities”. As a response to these issues, researchers in the Pacific are turning to methodologies that acknowledge and are shaped by the values, worldviews, and ideologies of local/indigenous communities in ways that ‘traditional’ western research does not.

Talanoa is one such methodology, popularised by Vaioleti (2006) who has stated that feminist theoretical frameworks have inspired much of his thinking about research practice (Vaioleti 2013). Developed from a Tongan worldview, talanoa has applications for many other Pacific communities, including PNG, due to its non-linear approaches that are responsive and flexible, rather than overly structured and rigid, as many of the tools of Western research tend to be (Vaioleti 2006, 2013). The name of the method itself is a clear indication of its guiding principle: As explained by Vaioleti (2006, p. 23), “tala means to inform, tell, relate and command, as well as to ask or apply. Noa means of any kind, ordinary, nothing in particular, purely imaginary or void … Talanoa, then, literally means talking about nothing in particular, and interacting
without a rigid framework”. ‘Talking about nothing in particular’ enabled many ideas or thoughts to be raised by the participants that may otherwise have been missed if I had adopted an approach that didn’t give space for these exchanges. Furthermore, Vaioleti draws on Churchward’s (1959) description of *talanoa* as the idea of telling stories or relating experience. Throughout my fieldwork and my interactions with my participants, ‘telling stories’ and ‘yarning’ was an important part of the research encounter as it helped foster rapport between researcher and researched (Warrick 2011). Additionally, yarning is an important approach in the Australian context, and as outlined by Osmond and Phillips (2019), offers opportunities for counter-narratives that more traditional means of engaging with participants may not offer. Initial meetings with participants were comprised almost entirely of ‘talking about nothing in particular’ and touched very little on food, kitchens, or household sustainability. However, this early talking constituted a vital part of the interpersonal interaction between the participants and me as it created the appropriate space for discussion and information sharing (Vaioleti 2006). However, the fact that participants were living, studying and/or working in Australia meant that the rhythms of their lives ascribed to the fast-paced Western working life that affords little space, time, or value for ‘talking about nothing’. I am extremely thankful that my participants shared their precious time with me.

There were challenges that arose as I adopted some of the *talanoa* methodological concepts. These are particularly evident in my experience as I am a non-Pacific researcher conducting empirical work in a non-Pacific cultural context. Firstly, as mentioned earlier in the chapter, I must acknowledge my own positionality as a Pakeha New Zealand-Asian who does not have a PNG, or more broadly Pacific, ancestral or cultural heritage. As such, I bring to this research a worldview that is influenced by distinctly Western and Asian cultures and these shape my engagements with participants, my analysis of data, and my writing of results. This is further problematic because I, a PhD student operating within the distinctly Western colonial academic frameworks that privilege certain forms of knowledge over others, seek to translate indigenous Pacific stories and knowledges into formats recognisable to an academic audience but that do not necessarily align to Papua New Guinean traditions of knowledge sharing and storytelling.
Few geographers have engaged directly with *talanoa* as methodology. Exceptions can be seen in the work of Warrick (2011), who employed a *storian* approach (which is a *talanoa* equivalent in *Bislama*) and Falefou (2017) who applied *sausautalaaga* (story telling) in their work on climate change effects on communities in Vanuatu and Tuvalu respectively. However, as yet geographers have not attempted to incorporate *talanoa* or other similar methodologies into research that looks to the visceral, embodied, or sensory, nor into feminist post-structuralist understandings of the Pacific region.

### 3.4 Mundane Methodologies and Private Knowledges

If the home is understood as comprised of ongoing social and material relationships, it is sets of ideas, performances and materials that render the sphere of everyday life as private (Saunders & Williams 1988, Bell & Valentine 1997, Edwards & Ribbens 1998, Pink 2004). The mundane, quotidian performances that comprise our lived realities as private are largely conceived to belong in the domestic space, ‘behind closed doors’. Private, intimate knowledges are highly gendered, just – as has been long argued by feminist scholars – because domestic spaces are highly gendered (Bell & Valentine 1997). They are therefore all too often de-prioritised by an academic and institutional tradition that privileges the objective, rational and detached epistemologies that find their basis in masculinist worldviews (Edwards & Ribbens 1998).

Despite changing divisions of domestic labour (Bell & Valentine 1997, Pink 2004) in the Western context, it remains that women perform most of the household work (Sullivan 2000). Domestic kitchen spaces in particular have been traditionally positioned by hegemonic discourses as gendered spaces in which the majority of (though by no means all) food-related decisions and practices are the domain of female household members. Furthermore, food has been central to the imagining of the female body as nurturer and caregiver of male family members (DeVault 1991, Hage 1997, Young 1997). Thus, everyday food practices are all too often relegated to the private domain and are as a result often under-researched by the academy.

To investigate the private, intimate knowledges of mundane life is to engage in an act of resistance and opposition to the dominant patriarchal public knowledge systems that are predicated on and reinforce Cartesian binary thinking (see Edwards & Ribbens 1998,
Enloe 2011, and Hagen 2014 for some examples of feminist work that seeks to do this). Accordingly, a feminist methodological approach that is alive to difference, seeks to engage with participants on a personal level, and acknowledges that subjectivity – that is, the emotional, affectual and embodied qualities that shape researchers’ identities and thus also how they engage in the research process – offers a useful framework with which we can begin to interrogate ‘traditional’ academic discourse. It is my intent, by seeking to explore the everyday affective, sensory, and embodied engagements that Papua New Guineans have in the private domain of the home, to incorporate this kind of thinking as both a response to and a critique of such systems of knowledge production.

Challenges arise for researchers when applying male-based theoretical understandings to research that seeks to explore private knowledges that are feminised (Edwards & Ribbens 1998). In particular, researchers face the ethical dilemma of how to bring the knowledges that are created by, and in, private spaces into sites of public consumption such as conference presentations, journal articles, book chapters, and so on. As researchers, we must participate in methods of information and knowledge sharing that are often couched in an academic, masculinist worldview that may not necessarily be alive to the complicated morass of embodied, affectual, and emotional knowledges of the domestic space. This challenge is further complicated by the difficulties that we encounter in approaching taboo topics with participants and the ethics of sharing this knowledge with others. While the mundane food waste practices that occur within the domestic and private sphere of the home are perhaps not a taboo topic as such, it is still one that must be approached with sensitivity and care as such practices are often subject to moral judgement. Yet, as Irwin (2006) points out, the research of such subjects and the sharing or dissemination of that knowledge is important. Such exchanges may operate as challenges to the dominant systems of knowledge production and offers the potential to “decolonise the power relations inherent in the representation of the Other” (Behar 1995, p. 4).

3.5 The Research Sites

The research took place in three cities that PNG migrants relocated to: Hamilton, New Zealand, and Sydney and Wollongong in New South Wales, Australia. Hamilton is a
rural city in the Central North Island of New Zealand, with a population of 160,911 at the date of the last census in 2018 (Stats NZ n.d.) Hamilton’s economy is driven largely by dairy farming in the surrounding Waikato region, and has a large university and hospital that are the main employers in the city. One of the fastest-growing cities in the country, it is non-coasted, located primarily in farmland, and sits on the shoulders of the country’s longest river (the Waikato River). Pacific peoples including those from PNG account for approximately six percent of the population, the fourth-largest ethnic group in the city (Stats NZ n.d.)

Sydney is the largest city in Australia, and thus also in the state of New South Wales, with an estimated resident population in 2019 of 5.3 million, according to the Australian Bureau of Statistics (2020). It is the main economic and political centre of the state and has the highest concentration of Pacific peoples in Australia (Batley 2017) The regional city of Wollongong is located one and half hours by train. Wollongong’s economy is powered by coal mining and the local university. However, many of its residents work in the city of Sydney. Wollongong is located between the beachfront and a mountain escarpment, with a generally mild, warm and temperate climate.

The sites of Hamilton, Sydney, and Wollongong were places where I was able to locate potential participants and form a network of contacts for recruitment. These sites also provided a contrast to the context of the PNG city of Port Moresby, where most of the participants had spent some of their time. Port Moresby is a fast-growing urban area in a developing country, experiencing rapid economic growth. For many participants, Port Moresby was a place where they had not grown up, but moved to from rural PNG, where there is considerable diversity and a mix of subsistence and commercial livelihoods.

3.6 Method: A Sensory Kitchen Ethnography

The fieldwork incorporated three research activities: semi-structured interviews, participant photography, and a kitchen insight go-along. Each activity was shaped by a talanoa-inspired approach that encouraged ‘talk about nothing in particular’ and thus held at its core a participant and relationship-focused approach to the research process. This approach fostered inclusion and helped circulate the emotional force of comfort
that made possible insights into intimate and private knowledges about food practices that might otherwise be too embarrassing or private to talk about.

Furthermore, I sought to include activities that were not necessarily predicated on verbal text. It is well acknowledged that the modern academic enterprise privileges written methods of representation that are heavily aligned with Western thinking and principles of knowledge (Dowling, Lloyd, Suchet-Pearson 2017). The methods I discuss below were designed to access participants’ visceral and sensory knowledges through an ethnography that sought to go beyond text and thus was alive to the more-than-human elements of PNG migrants’ food sustainability practices. A sensory ethnography thus offers a ‘way in’ to engage with the corporeal and embodied dimensions of the everyday. It allows us to access “the most profound type of knowledge [which] is not spoken of at all and thus inaccessible to ethnographic observation or interview” (Bendix 2000, p. 41). Because the senses are situated in and experienced through the body, a sensory approach allows us to grasp the materiality of everyday life and how food is a central component of that corporeality (Pink 2015).

3.6.1 Pre-Interview ‘Get-to-Know-You’ Meeting

A vital component of the data collection process was the informal ‘get-to-know-you’ encounters that I had with participants prior to their involvement in any formal research activity. These encounters provided an opportunity for us to connect not just as researcher and researched, but on a more personal and conversational level. We met in places chosen by participants, usually cafes and university libraries. The materials and social norms that shape these places helped foster a sense of comfort. I did not record these conversations, which helped participants feel more comfortable to speak freely with a person who was by all means a stranger to them at that point in time.

While food and this study were a topic of discussion (it was important to be transparent about the research aims, why I was speaking to Papua New Guineans, and how I hoped that the participants, and the PNG migrant community, might benefit from this research), it was not the central aim of the initial interaction. Instead, we told stories of our lives, our families, our work, and our homes. As Martha, a 19-year-old woman from the Enga province, pointed out to me in one of our informal ‘chats’, the act of telling
stories is a central component of building and maintaining relationships for many PNG cultures. This exchange of story-telling - or, to use the *talanoa* phrase, ‘talking about nothing in particular’ - provided an opportunity to build rapport and trust with the PNG migrants while at the same time giving important insights into how participants’ knowledges were situated within certain family, cultural, and environmental contexts.

Furthermore, our interactions in these ‘get-to-know-you’ encounters offered an opportunity for reciprocity, as I shared some of my own experiences, background, ideas, and information with participants. This was particularly important given that research with Pacific peoples has historically positioned them as subordinates from whom information was extracted for Western academic consumption (Lal 1998). Thus, the 12 participants (see Chapter Four) could get to know me and ‘suss me out’ before committing to research participation.

### 3.6.2 Stage One: Semi Structured Interviews

Primarily, data was collected by way of semi-structured interviews with participants. Like the ‘getting to know you’ encounters, these conversations also involved periods of ‘talk about nothing in particular’. Despite the apparent contradictions I found that semi-structured interviews complemented the *talanoa* as they both encourage discussion, conversation, and dialogue. Furthermore, because semi-structured interviews are considered to be fluid, there was space for participants to bring to the fore that which was most important to them and for us both to engage in knowledge sharing through telling stories. Interviews are not merely about talking, but also about listening (Oakley 2000). Therefore, interviews offer a sensitive and people-oriented means of data collection. Interviewees are presented with the opportunity to construct narratives of experience using their own words and expressions (Valentine 2005). Accordingly, in this project semi-structured interviews allow for insights into participants’ worldviews, values, and beliefs, and how these are reflected in their food and kitchen practices in everyday action.

As stated by Denzin (1970) and Valentine (2005), where interviews are undertaken can have a significant impact. The interviews for this research occurred at locations that were of the participants’ choice – several participants chose to meet in their home, but others wished to do so at cafes that they knew and where they felt comfortable, or
facilities available on the university campuses. In giving participants the option to engage with me ‘on their own turf’, I sought to “facilitate a more relaxed conversation [that] offers … the possibility to learn more about the person from seeing them in their own environment” (Valentine 2005, p. 118). Interviews were recorded on both a voice recorder and the voice memo function of my iPhone, depending on the situation and with participants’ permission. In keeping with the conversational, informal, and relaxed atmosphere that I strove to foster, and because in many Papua New Guinean cultures food is a vital component of social engagement and interaction, I brought a small snack for us to share - usually in the form of biscuits or some other ‘afternoon-tea-type’ offering. The feeling of the majority of the interviews was that of a friendly ‘chat’ between friends, felt through embodied expressions of laughter and humour, alongside the sharing of personal, sometimes intimate, stories from both parties. This reflected the importance of the ‘get-to-know-you’ meeting, which allowed for a more relaxed interaction during the interview phase.

As mentioned above, interviews were conversational rather than directive. This is one of the great benefits of a semi-structured approach to interviewing, where strict adherence to a rigid schedule of questions is not required. As dialogue, rather than interrogation, semi-structured interviews are fluid and can be somewhat amorphous. Therefore, they allow for the unexpected to come to the fore (Warrick 2011). Dialogues are not linear, and thus a semi-structured approach to the interviews allowed for discussion to follow tangents and conversational offshoots that at first may not have appeared directly related to the research questions but yielded rich insights into unexpectedly important issues. For example, in the interview with Connelly, a student in Hamilton who came from Bougainville, our conversation turned to the plant karakap, an important source of food for his family in PNG but considered to be a weed in Aotearoa New Zealand. The semi-structured interview allowed for participants to discuss at length the topics that were most important to them, as related to food provisioning, preservation and disposal. Thus, the combination of a talanoa approach and semi-structured interviews allowed for a more participant-led discussion than other, more inflexible methods might have offered.
Key features of the semi-structured interviewing technique, as discussed above, are its flexible and open qualities. A challenge inherent in this method is that the advantage of being able to follow unexpected conversational gambits is somewhat of a ‘double-edged sword’ in that participants’ responses can be convoluted, circulatory, and lengthy, resulting in complicated and time-consuming transcription and analysis processes (Warrick 2011). However, these sorts of responses are an important part of the talanoa methodology, where ‘talking about nothing in particular’ and allowing conversational tangents to develop form the foundations of researcher-participant rapport and trust. While my encounters with participants may have taken a little longer, the duration of the sessions was at the discretion of the participants whether or not they wished to continue chatting.

Furthermore, it might be argued that using a verbally oriented method as a main means of data collection does not seem to connect to a visceral ethnography that emphasises non-verbal dimensions of food sustainability practice (Turner 2016). However, experience is articulated and understood through language, and vice-versa. It is thus impossible to separate language from thought from experience. This is in line with the arguments made by Dowling et al. (2017), Kanngieser (2012) and Dewsbury (2010), who advocate the use of semi-structured interviews in embodied and affective geographies. How people frame their visceral and affectual experiences through words in itself provides interesting insights into how they see themselves and their material, visceral, and affectual relations to others and the environments in which they are situated.

3.6.3 Stage Two: Participatory Photography

Stage Two involved a participant photography activity. After completion of the interviews, participants were asked to take photographs of their kitchen spaces over the course of a ‘typical’ food week (i.e. a week where there were no holidays, celebrations, or other activities that might engender food practices not usually undertaken in everyday life). Four of the 12 participants consented to undertake this task. I asked participants to take at least one photograph everyday day for seven days, either using their own cameras or smart phones, or one provided to them by me (via the School of Geography and Sustainable Communities). At the end of the week, I then met with the
participant again for an audio-recorded ‘follow-up’ conversation where we discussed and reflected upon the images taken.

In turning to the visual through the medium of photography, I sought to engage participants beyond verbal text. As English was not the first language of many of my participants, some of the concepts we discussed in interviews were difficult to articulate and thus encouraging people to create photographic data aided in their communication and expression of complex ideas. For this project, which seeks to understand the cultural underpinnings of food and kitchen sustainability practices, participant photography was particularly useful because photographs are both products and reflections of societal and cultural norms, values, and beliefs (Pink 2001, Prosser & Schwartz 1998).

In representing the captured subject, photographs reveal clues as to the positionality of the photographer him, or herself, as the process of photography involves drawing upon “personal and cultural resources of visual experience and knowledge. [Photographers] thus compose images that they intend to represent particular objects or meanings; moreover, they do so in particular social and material contexts” (Pink 2001, p. 27). Participant photography therefore offered insights into the lived realities and cultural norms of the photographer’s (ethnic) community or society (Bourdieu 1990, cited in Pink 2001, p. 26-27) and how these are reflected in their food and kitchen practices.

Furthermore, participatory photography is a means by which I could learn how participants are situated in relation with the more-than-human others (Alam, McGregor & Houston 2017) that they interact with in the kitchen, such as food itself, fridges, rubbish bins, compost bins and so on. In this way, the method can “amplify other sensory, bodily, and affective registers” (Whatmore 2006, p. 606). And yet, as Alam, McGregor and Houston (2017) point out, few have considered the embodied performances that co-constitute the photographic processes. Rose points to this performative aspect of photography by arguing that images are more-than-representational blocks of places and spaces as images make certain spaces not through what they show but through how spaces are ‘seen, displayed.
“and circulated’ (2008, p. 157)...rethinking imaging practice as an experiential and embodied response can provide opportunities not only for marginalised humans who actively choose to respond but also other non-humans that are involved in this process” (p. 257-258).

Incorporating a ‘follow-up conversation’ with participants, where we discussed the images taken, introduced a space where participants could reflect and contemplate upon the images taken (Alam, McGregor & Houston 2017). Our discussions within these interviews evoked emotional responses to visual representations of participants’ environments and how participants engaged with the material and emotional terrain of those environments. The participant photography activity was quite successful, as the participants who consented to do it were very thorough in terms of the breadth and depth of their chosen photography subjects, which ranged from food storage in fridges to scraps in the rubbish bin.

3.6.4 Stage Three: Kitchen Insight

Stage Three introduced a place-based and embodied research encounter in participants’ kitchens referred to as the ‘kitchen insight’. This made possible the investigation of the visceral and affectual relations that are entangled in PNG migrants’ domestic food practices. Of the 12 participants I engaged with, two agreed to take part in the kitchen insight. I chose not to video record the encounters, as the presence of a video camera or other similar recording device can be intimidating, and thus people are more likely to modify their behaviours as a response. I asked participants to take part in a ‘go-along’ tour of the spaces in which they engaged in the activities that contributed to and were a part of food-related processes and systems in their households – most often, this was the kitchen, though some participants did show me other spaces of their home that were central to their food practices - for example, Lena, as one of the few participants who owned her own home and thus was able adapt the backyard for growing vegetables, showed me her home garden space. Where the kitchen insight took place was influenced by the narratives that emerged in the interview discussion that we had in Stage One.
Like the participant photography, the kitchen insight is a method by which this research was able to go beyond verbal representation of experience and knowledge. As I am investigating that which is not always easily explained using language (emotion, affect, embodied experience), go-along methods can be particularly useful as they involve both observing practice and asking questions within specific environments, thus gaining insights into participants’ attitudes, knowledges, experiences and practices as they inhabit specific contexts (Carpiano 2009). It was the intention that the kitchen insight would capture the emotional and affective dimensions of everyday food (waste) practices through experience, observation and conversation. Food is an inherently embodied, affectual, and visceral phenomenon. Accordingly, food-oriented research that uses primarily text-based methods such as interviews all too often fails to capture embodied experiences. This was certainly the case for many of the interview encounters that I had with participants. Questions in the interviews that sought to explore the sensory entanglements of PNG migrants’ everyday food practices often engendered confused responses. Furthermore, moving beyond text-based research and embracing other modes of knowledge sharing such as photography and shared embodied experience through go-along methods, allows researchers working with non-Western cultures for whom text is not a traditional or primary method of communication and information dissemination, to engage with people in ways that may better fit with their cultural worldview, values, and practice. Western knowledges, and Western academia privileges the written word and thus, it may be argued, locks those, for whom that is not the primary or most valued communication mode, out of academic conversations.

The kitchen insight approach that I used is based on a similar method, referred to as the ‘go-along interview’ (Garcia et al. 2012) or the ‘walking interview’ (Evans & Jones 2011). This technique has found popularity in the health sciences to better understand the spatial dimensions health phenomena. As Carpiano (2009) defines them, “fundamentally, all go-alongs involve interviewing a participant while receiving a tour of their neighbourhood or other local contexts” (Carpiano 2009, Garcia et al. 2012, Evans & Jones 2011). For this project, however, the encounter was – at least on the surface – more static in that we were not moving outside of the home.
The kitchen insight activity presented some distinctive challenges. As discussed above, this research focuses on the intimate geographies of PNG migrants’ everyday food practices. It might be expected that some participants would feel self-conscious discussing activities that are often judged by others, such as those associated with food waste. I was cognisant that inviting a researcher into their domestic space, to observe their kitchen spaces and associated practices, is an act of trust, particularly for those of an ethnic group for whom research encounters have been historically exploitative. Another challenge was that the living situations of many participants meant that a kitchen tour was not possible. For example, several participants shared their home with others in flat-share arrangements (this was particularly the case with the student migrants) and thus felt uncomfortable inviting a researcher into a space that was not solely theirs, which could be seen as a breach of privacy for others in the home. Accordingly, uptake for this activity was lower than the other two phases of the research.

3.7 Data Analysis

As the process of ethnography is often messy and non-linear, it is important to note that the analysis is not temporally or spatially removed from the collection of data (Pink 2015). Thus, analysis began in the field and extended beyond that into the writing phase – accordingly, it did not have a defined beginning and end, and was instead interwoven within all stages of the research process. Implicit in ethnographic encounters is reflexive and analytical thought that is a central component of social engagement with others, and particularly in interactions for which active listening or participation is key.

Bearing that in mind, a systematic method of analysis was also employed to ‘make sense’ of the collected data. I used a narrative analysis approach, intended to address the challenges of interpreting and understanding the myriad and interconnected layers of meaning that are present in dialogue (Wiles, Rosenberg & Kearns 2005). Narrative analysis is the interpretation of the stories that emerge from the data collection in order to identify how spaces, social relations and identities are (re)produced through interactive talk and other means of communicating stories (Wiles, Rosenberg & Kearns 2005). Narrative analysis is helpful in that it “values connectedness and appreciate[s] uncertainty” (Fraser 2004, p.185) by acknowledging the messy, circuitous and non-
linear characteristics of conversation. Thus, it fits well with a talanoa-inspired approach that is oriented around the sharing of stories and ‘talking about nothing in particular’.

As narrative analysis looks primarily at the words and phrases deployed by participants, it perhaps might seem a mismatch for research that focuses on the visceral, sensory and affectual. This method of analysis does not appear to have been widely applied to a corporeal feminist geography, perhaps because of critiques that a focus on words and language prioritises representation over material elements of power (Price 2010). However, it is important to remember that words in and of themselves hold an affective register and thus are sensory and visceral in themselves. Furthermore, this mode of analysis is “particularly sensitive to the ways fragments of ideas might be expressed” (Fraser 2004, p. 185), and is helpful to use with ideas that are difficult to articulate clearly, such as embodied or affectual experiences and memories, which constitute important components of the kitchen assemblage. Furthermore, narrative analysis has been used extensively in the medical and psychology literatures by scholars who posit that people undergoing bodily crises use narrative to repair the disruption that such predicaments bring to their lives by telling stories about their experiences of medical events (Heavy 2015). As storytelling is increasingly positioned as performance, interest has recently turned to how “the fleshy reality of the body affects the narratives we tell, and how we use the body, and are constrained by it, as we tell them” (Heavy 2015, p. 429). By this view, all storytelling is embodied. It is through narratives that people attribute meaning and understanding to experience; therefore, identifying and analysing the narrative threads evident in transcripts, observations, and photographs provided rich insights into not only the lived and material realities experienced by participants in their food and kitchen practices, but also into the affects and emotions embedded in them.

Narrative analysis focuses on the retelling of stories and allows participants to represent their own identities, realities, and societies in a way that is personal, subjective and sensitive to difference (Fraser 2004). Given that the voices and stories of Pacific communities are often afforded little space in household sustainability research, a narrative approach therefore seems particularly apt. As I have mentioned above, my participants pointed out to me that telling stories is a central part of social relationships and interactions and thus a bedrock of PNG cultural engagement:
Martha: We are Enga’s ... people, so we like to greet people and be
dependent on each other and say hello, and you see next neighbours
and we blood to blood ... we telling stories and we never forget about
blood to blood.

Therefore, using a method of analysis that emphasises and respects storytelling was
very important to preserving the integrity of participants’ contributions.

3.8 Ethical Considerations

It is important that all social research is conducted in an ethical manner. When the
research is conducted in a cross-cultural setting, where there is potential for
misunderstanding because of language or cultural barriers, it is even more so. As
outlined in the following chapter, I took considerable care to establish a rapport with the
research participants founded on mutual respect and co-beneficial relationships. From a
more pragmatic perspective my research was required to have ethical approval from the
University of Wollongong’s Social Sciences Human Research Ethics Committee
(HREC). As part of the process of approval, I outlined my research objectives,
methodology and recruitment plan. This involved the creation of a participant
information sheet (Appendix 1) outlining their rights as a participant in this project: the
right to withdraw at any time, to have anonymity if they so wished, and to decline
answering any question posed to them. Alongside this information sheet, I also provided
a consent form (Appendix 2). The ‘get-to-know-you’ encounters with participants was
designed in part to be an opportunity to discuss these documents with participants to
explain the expectations of participation and to answer any questions they have had.
This helped to ensure that their consent was adequately informed, while also initiating a
trusting relationship. All of the participants appeared to be happy with the information
provided and signed the documentation.

3.9 Conclusion

In this chapter, I addressed five main objectives as outlined in the introduction. I first
outlined my positionality as a Thai-Pākehā New Zealander and postgraduate student. In
identifying how these axes of identity have shaped the research, I acknowledged the
role of my own embodiment in my encounters with participants. Second, I explored
some of the theoretical concepts that have framed this methodology, and in particular have identified how feminist, post-structural understandings of knowledge provide opportunities in research practice to critique the dominant masculinist framings of knowledge and expertise that are prevalent in Western academia. Third, in using a methodology attuned to the mundane and everyday practices of the private and feminised domain of the home, this research seeks to challenge the hegemonic discourses that devalue the domestic space and the knowledges embedded within it. Furthermore, the research incorporated a *talanoa*-inspired research methodology that rejects the positivist hallmarks (objectivity, validity, and reliability) for an approach informed by the values of Pacific people, which are more relationship than outcome oriented. Fourth, I identified and discussed the main methods used to gather the empirical data for this research: semi-structured interviews, participant photography, and kitchen insight go-alongs. Each method provided the means to learn in a variety of ways from PNG migrants about how they procure, consume, store, prepare, and dispose of food, both in PNG and in Australia/New Zealand. Incorporating visual/experiential methods alongside verbally oriented semi-structured interviews allowed for insights beyond text and this was particularly important given that they ways in which people experience food are often emotional, embodied, and affectual. Finally, I outlined the narrative analysis approach that was employed to interpret the data, with a focus on how such an approach makes possible insights into emotional, visceral, and affectual experiences. In the following chapter, I address the challenges of recruitment when working with an ethnic minority group within a decolonising knowledges framework. I also outline how these challenges were overcome.
CHAPTER FOUR: RECRUITMENT – THE CHALLENGES OF DECOLONISING MUNDANE METHODOLOGIES

4.1 Introduction

Recruitment of participants is a vital component of research and can shape its outcomes in profound ways. However, despite its importance, it is an under examined and under theorised part of the research process, particularly in the field of social and cultural geography. The reasons for its absence in the literature are unclear; it is possible that researchers may identify recruitment as a possible limitation in their research, or that it is a result of human geography’s shift away from scientific paradigms for which representative samples are a requirement. Whatever the case may be, given the changing technological and communication landscapes that researchers now operate in, it is important to revisit discussions about how social scientists engage in the process of participant recruitment. Furthermore, as human geographers seek to engage more with communities of diverse ethnic ancestries, recruitment becomes an often-challenging issue that merits more attention in academic discourse. This is in part because the commonplace rhythms and routines of recruitment (such as cold-calling and advertising), that often operate within western research do not always transfer well to a post-colonial context, where different considerations around relationships and power are at play. In this paper, I outline the challenges that the recruitment process of my PhD research encountered, and the strategies that I subsequently employed to address them. The issue of recruitment arose as I was conducting fieldwork for this research with Papua New Guinean migrants in Australia/New Zealand and encountered several social and cultural barriers to identifying, contacting and recruiting potential participants. In the conclusion of the chapter, I identify three key recruitment considerations that have arisen from this research. These points are important to take into account when recruiting ethnic minority migrants who come from cultures that value the collective and communal.
4.2 Recruitment in The Literature

Recruitment of participants is a fundamental component of the research process. Recruitment design and implementation shapes research in profound ways, from the practicalities of fieldwork, to the sample obtained, to the analysis of raw data. However, a review of the human geography literature suggests that recruitment has been almost entirely overlooked, despite the central role that it plays in research. This is further problematic given that the ways in which we forge and maintain social relationships have been transformed by a rapidly changing communication landscape that has significantly altered or altogether rendered obsolete many ‘traditional’ methods of recruitment, such as snow-balling, advertising and cold-calling (Valentine, 2005). The growth of social media and the internet as the primary means by which we network and connect with others has meant that the methods by which researchers engage with (potential) participants has undergone a significant shift, with internet-based media such as emails, Facebook and Twitter becoming central to recruitment efforts (Sikkens et al. 2017).

A review of all Area journal volumes (which often include articles on methodological issues in geography) over the past decade (2007-2017) identified no papers focussing on recruitment strategies, challenges, or concerns, much less any papers that looked specifically at the recruitment of participants from migrant or ethnic minority communities. It might be expected that human geography methods books (such as Kitchin & Tate 2000; Hay 2016; Clifford et al. 2016) would discuss recruitment at least as a vital part of the research process as a whole. However, this is not the case. Despite being fifteen years old, Valentine’s (2005) contribution to Flowerdew and Martin’s (2005) Methods in Human Geography is the only example, since the turn of the millennium, that I could find of a human geography text that incorporated a discussion of recruitment methods in any great detail. This demonstrates a significant gap in disciplinary knowledge that human geographers need to address.

In terms of the recruitment of participants from ethnic minority communities, it has been made clear that there is a need for human geographers to include more diverse voices in research. Increasing calls for ethnically diverse environmental knowledges to be incorporated into sustainability research (Clarke & Agyeman 2011, Klocker & Head
2013, Maller 2011) demonstrate the importance of recruiting culturally diverse populations. However, this rising interest in ethnically diverse ways of knowing in the social sciences, and in the fields of environment and sustainability in particular, has not been matched by an equal investment in the methodological literature that looks specifically at the challenges and issues (including recruitment) that are a part of working with people who come from these social groups (Collins & Huang 2012). In migration research, this is an acknowledged problem. As Collins and Huang (2012) point out, while it is evident that increasingly varied methodological approaches are being employed to cater to culturally diverse research communities, there is a notable absence of conversation about the ethical and conceptual implications of these. Recruitment certainly appears to be a component of the research process that is consistently under-discussed, despite the growth of interest in, and increase in calls for researchers to include, diverse populations in social science research. Given this interest, it seems prudent to consider why geographers aren’t discussing recruitment methods of potential participants from ethnic minority cultures.

In the social sciences more generally, some space is allocated to discussions of recruitment and there has been some attention to ethnic minority groups in this conversation. Eide and Allen (2005), for example, highlighted the importance of trust in approaching the participant community. They argue that it is through ‘knowing and being known’ that trust and rapport is achieved, which is why ‘traditional’ recruitment methods such as flyers and advertisements fail to work. An effective and ethical way to establish this trust is by forging partnerships with key informants from the target community, such as with cultural liaison assistants (an individual from the community who advises on cultural protocols and helps facilitate recruitment). Almalik, Kiger and Tucker (2010) focused on a very different aspect of recruitment, better understanding the role that interpretation plays in approaching members of ethnic minority groups that speak a language different from that of the researcher. Their work focused on interpretation during the recruitment period of fieldwork with migrant women from European countries (including the interpretation of recruitment papers and audio-recorded encounters with potential participants). They offered a positivist framework in which translation could be measured for efficacy in the recruitment phase of fieldwork and thus assessed in terms of impact and quality.
For the health, psychology and medical fields, the recruitment of culturally diverse participants appears to be an issue of considerable concern (see Waheed et al. 2015, Baxley & Daniels 2014, Brown et al. 2014 for examples). For researchers in these disciplines, the under-representation of ethnic and racial minority groups is a challenge that could pose significant risk to how disease incidence and the natural history of the general population are understood (Baxter et al. 2012). The participation of these groups in medical studies is therefore a vital element in the process of developing successful health interventions and programs. There is demonstrated evidence to suggest that it is difficult to recruit members of ethnic minorities to health research (Waheed et al. 2015). Given the imperative for representative samples in much medical research, it is unsurprising that the issue of minority recruitment has been given space in their literature.

Establishing trust is a fundamental issue in recruitment. Baxley and Daniels (2014), in their work about the strategies employed by health researchers to recruit adolescents from ethnic minority communities, highlighted that trust (or rather, a lack thereof) inhibited research participation. This was particularly evident in communities, such as the Latino and African American communities in the USA, that had endured a history of unethical research with minority children. The importance of trust is a claim echoed in anthropological and other social science research that engages with diverse populations (see Eide & Allen 2005 above). Baxley and Daniels outlined three main ways by which researchers can foster trust with target populations: First, forming positive, working relationships with community gatekeepers and leaders; second, shaping the research protocols to take into account the nuances of the community’s culture and language, and; third implementing sound ethical practice through such methods as key informants and advisory boards to help alleviate mistrust by invoking accountability measures to hold researchers to.

Brown et al. (2014) conducted a meta-analysis to better understand why ethnic minorities are often missing in mental health research through a systematic review of nine papers from the United States of America. The authors identified 33 barriers, which they then grouped into five themes: participant-related, practical issues (such as transport provision or lack of childcare), family/community related, health service
related, and research process related. However, while Brown et al. outline what these barriers are and why they are problematic, they do not go on to address what strategies could be employed to overcome them though they make it clear that the recruitment process is multifactorial. Therefore, they argue that many of the challenges that they discuss are interrelated. To alleviate one challenge can have a ‘knock-on’ effect to (at least partially) alleviate others. As a follow up to this paper, Waheed et al. (2015) discussed possible strategies that health researchers can employ to overcome the difficulties raised by Brown et al (2014, p. 3), which included working with multiple community organisations, collaborating with religious leaders, appointing cultural consultants to “improve the relevance of outreach materials”, setting up an advisory board, and so on. The authors further argue that, as there is no quantifiable way to measure the success of such methods, it is unclear how effective they are. While several trials conducted by other researchers in the health and medical fields have evaluated the efficacy of recruitment strategies in the ‘general population’ (see, for example, Treweek et al. 2013), none have yet been conducted to ascertain the same for ethnic minorities specifically.

The above are just a few examples of recruitment-oriented literature in the health and medical disciplines. Such studies originate from fields that are traditionally positivist in their theoretical approaches to research and therefore have a tendency to frame recruitment as the means of obtaining representative study samples in order to reduce the risk of selection bias (Baxter et al. 2012). Perhaps another reason to account for the interest in recruitment in these fields is that, in the United States of America, the National Institute of Health mandates that ethnic minorities be included in clinical trials. For these reasons, recruitment is considered a key concern. For feminist geographers, for whom representative samples are not necessarily seen as a requirement for rigorous research, perhaps recruitment is then considered to be less important. Such an outlook, however, poses something of a difficult paradox for feminist researchers, who must balance the ethical considerations of research, and the ethical imperatives to avoid positioning research participants as mere subjects, with the Western, patriarchal epistemologies that shape much of academic inquiry.
4.3 Recruitment Context

In order to discuss the recruitment process and the inherent challenges, it is important to consider the historical and geographical contexts in which recruitment occurred. Papua New Guinea and Australia share a unique and complicated relationship, in that PNG is the only country to have been colonised by Australia (other than the colonising of the indigenous people of Australia itself), which began its formal administration of British New Guinea in 1906 and the north eastern part colonised by Germany during the First World War. PNG did not achieve independence from Australia until 1975 (Denoon 2005), and the effects of colonialism linger today. As a part of the agreement to grant PNG independence, Australia pledged continued and substantial aid support to PNG and remains today the largest bilateral aid donor to the country (Ferns 2015). At the same time, Australia’s refugee policy – which in recent times includes the offshore processing of asylum seekers in Papua New Guinean territory – has created a strain between the two countries, politically, with some critics arguing that the policy has perpetuated the neo-colonial nature and ‘master-servant’ dynamic of Australia and Papua New Guinea’s relationship (Ferns 2015). Historically, Papua New Guinean migration to Australia involved large numbers of labourers recruited to work in the sugar cane plantations in, primarily, Queensland (Museums Victoria 2017). However, such migration was not always undertaken willingly, with many Papua New Guineans forcibly removed from their island homes to undertake work in Australia.

It is in this colonial and neo-colonial context that contemporary PNG migrants forge new lives in New South Wales. The population of PNG migrants in New South Wales is small. According to 2011 Australian Census data, 5,428 people in the state identified as Papua New Guinean (Department of Immigration and Citizenship 2014). Given that New South Wales’ total population is 7.79 million residents as of December 2016 (New South Wales Government 2017), the approximate percentage of the population that is PNG-born is less than 0.1 percent. While this data applies to the state as a whole, it can be assumed that the numbers are fewer in the specific study area of the Sydney/Illawarra region.

The relationship between Papua New Guinea and New Zealand is quite different, as the two countries do not have a shared colonial history. However, politically and
economically, the two countries have close ties. Following Fiji, PNG is New Zealand’s second largest goods export market in the Pacific (NZMFAT 2017a), and New Zealand offers financial aid to Papua New Guinea to address energy, agriculture, law and justice, and economic governance issues (NZMFAT 2017b). New Zealand also maintains strong commercial interests in, and military cooperation with, the country. However, the PNG population is not considered to be one of the ‘main Pacific ethnic groups’ in the country’s census data (Statistics NZ 2020), with a population of less than approximately 7,000 nationally (at this time, no data specific to the field site of Hamilton is publicly available, though it can be assumed to be significantly lower than that number).

Accordingly, this community is less visible than other, larger migrant groups and is often ‘lumped in’ with others under the non-specific label ‘Pacific Islander’ (which excludes Samoan, Tongan, Cook Island, Niuean, Tokelauan, and Fijian peoples for example).

It is important to note here that the PNG community is not necessarily a united group whose members share the same difficulties, goals, and outlooks. Indeed, the population appears to be fairly dispersed and somewhat fragmented. There is currently no formally recognised ‘PNG community’ in the Sydney Illawarra region, for example, following its collapse after its president stood down five years ago. Because the PNG community in the Sydney/Illawarra area has no official representation, it was particularly difficult to connect with migrants.

This project highlighted the recruitment difficulty that researchers with a different ethnic ancestry can encounter working with a small ethnic group that lacks community organisations. As fieldwork progressed, it became apparent that the recruitment of participants from a small ethnic minority community presented a number of unique challenges that resulted in a difficult and slow recruitment process.

4.4 The Challenge: The Cultural Liaison

Many feminist geographers articulate the importance of a participatory methodological approach to cross-cultural research, developed as a response to exploitative research (Breitbart 2016, p. 198). The appointment of a cultural liaison assistant is one way to facilitate collaborations with those of the ‘target’ community, the co-production of
knowledge and to bridge gaps in cultural protocol between researchers and the community (Foster & Stanek 2007). Ethical considerations are a key concern of such an approach, one of the intentions of which is to create more equal partnerships between academic researchers and the communities with which they work (Balakrishnan & Claiborne 2017).

The original research design of the project identified that a cultural liaison from the PNG community would be engaged to help advise on cultural protocol, recruit potential participants through leveraging their personal networks and connections, and attend interviews and other research activities with participants to foster an environment of rapport and trust. Accordingly, the role of the cultural liaison was envisioned as being a central component of the recruitment process, and as a means of access to a community that I had limited pre-existing contact with. In my intention to work with a cultural liaison, I sought to engage in ethical research that directly involved Papua New Guineans in the research process beyond their participation as interviewees, in ways that build trust.

To this end, I contacted via email the president of a prominent New South Wales’ Pacific community organisation with a request to meet to discuss the possibility of collaboration and a cultural liaison to join my research (this was before narrowing the research focus from Pacific Islanders in general to PNG migrants specifically, as discussed in Chapter One). Initially, this request was accepted, and a potential cultural liaison identified. However, all future communication attempts received no response and I had to look elsewhere. There are few community organisations for Pacific Islanders specifically, excluding churches and, when I made the choice to focus on Papua New Guineans, this was further narrowed. I made contact with a local, small PNG language group and with the president of a PNG students’ association at a Sydney university: the first engendered no response, though the second (whom I met through another participant) did help me connect with some students in the Wollongong area.

It quickly became clear that a participatory approach using a cultural liaison did not work in the context of this research. Lack of visibility of the PNG population in both the Australian and New Zealand field sites was a major contributing factor to the failure to
engage a cultural liaison. There were several reasons for this lack of visibility. Firstly, as noted above, the numbers of PNG migrants are very small, with the population comprising less than one tenth of one percent of the total population of both Australia and New Zealand. A reason why this was so difficult could be ascribed to the relatively small networks that participants had with other Papua New Guineans. This suggests that the community consists of small, somewhat scattered pockets of migrants who are not necessarily well connected with each other. It may also explain why the initial intention to hire a cultural liaison did not work well for this project.

Secondly, the lack of active community organisations meant that there is no official representation for PNG migrants. The recruitment of a possible cultural liaison proved difficult. As seen in the work of Jackson (2016), recruitment of migrant participants works particularly well when conducted through organisations which are centrally involved in the relevant community and therefore have established trust with its constituents. Sydney’s PNG community is small, particularly when compared to those in, for example, Brisbane and other areas of Queensland. While there are some organisations that cater for Pacific Island communities in general (for example, the New South Wales Council for Pacific Communities and some church groups), there are few that are aimed at PNG migrants in particular. The Sydney Wontok Club and some university student organisations do exist, but these are small and somewhat difficult to contact. The organisations that I did contact did not respond to requests for opportunities to meet and discuss the possibility of collaboration. Cultural liaisons appear to work best when working alongside an organisation with which the researcher has a positive, mutually beneficial, and long-standing relationship. Furthermore, as there appears to be little formal organisational or institutional support for the PNG community, finding an appropriate cultural liaison assistant proved difficult through these channels.

Lastly, many PNG migrants hold temporary residents’ visas for Australia and Aotearoa New Zealand as students or employed as seasonal workers. Hence, living in Australia for relatively shorter periods of time often missing were longer-term relationships and connections with others in the PNG migrant community. Indeed, according to the 2011 Census data, 61.7 percent of the PNG population in Australia over the age of 15 holds
some form of higher non-school qualifications (compared to 55.9 percent of the ‘Australian’ population). This might suggest that most PNG migrants and participants are in tertiary education. If the sample is indeed a true reflection of the PNG populations of Sydney/Illawarra (Australia) and Hamilton (New Zealand) it would suggest that the PNG migrant community is transitory, and this poses a variety of challenges to the recruitment process. The transient quality of the student migrant population made it difficult to find a possible cultural liaison assistant with wide-ranging networks that could be used to contact potential participants.

These reasons made it a challenge for me to find and communicate with potential cultural liaisons; they also made it difficult for those who potentially could have filled the role to accept the invitation to do so. Several participants whom I broached the subject with indicated that they felt uncomfortable occupying such a role, given that they knew few other PNG migrants. Work and family commitments, as well as interpersonal relationships with others in the community, were other reasons why potential liaisons felt they had to decline.

Furthermore, as I found myself engaging with Papua New Guineans from a range of regions and cultures, speaking a variety of languages (though with pidgin as a common one that most PNG migrants can speak), the usefulness of working with a single cultural liaison became potentially problematic. As I became alive to the differences within the PNG migrant community, in terms of the cultural, political, economic, financial and interpersonal, alternative methods of engagement arose as appropriate means of connecting and maintaining relationships with a range of PNG migrants. The PNG migrant population is very diverse, and this potentially impacted recruitment as my initial, perhaps naïve, assumptions that the PNG community in the Sydney/Illawarra region would be a united, connected group is not necessarily the case. Papua New Guinea comprises over 200 cultures, each with unique traditions, and is home to over 700 different languages (Foley 1986).

As discussed above, the failure to engage a cultural liaison presented many challenges in terms of the social, cultural, ethical, and personal dimensions of the recruitment
process, and required alternative methods of reaching out to the PNG community in Australia and New Zealand.

4.5 The Solution: (Social) Networking

Social media and other online communication methods provided alternative pathways to communicate to Papua New Guinean migrants the invitation to participate in this project. As a result, a wide-reaching snowballing technique, incorporating both ‘new’ technologies and more traditional methods of networking, was adopted to reach potential participants.

I turned to personal contacts who had either lived in and/or worked in PNG or were Papua New Guinean themselves. I also adopted a wider snowballing recruitment method from existing participants from several different areas of PNG, including the Hela, Sandaun (formerly West Sepik), Enga and Bougainville provinces. Each of these people had their own networks of PNG friends and family that often were from similar areas or cultures and had better understandings of how to reach out to them in the most appropriate and effective ways. They were also able to facilitate introductions and were an important connection between me – a stranger and researcher – and potential participants. It is their networks from which a vast majority of participants were recruited, through often complicated and international webs of connections in Australia, New Zealand and PNG.

As these relationships were transnational, using new media was essential, communicating primarily through Facebook chat or email. As Masson et al (2013), Parkinson and Bromfield (2013) and Palys and Atchison (2012) point out, for populations that are difficult to reach, social networking and internet-based communication are useful methods of recruitment, and this was certainly the case here. Without them, it is unlikely that the international networks of colleagues, participants, friends, and family, could have been utilised. Often, I was not the person making initial contact with participants. Rather, it was most often my own contacts who chose to get in touch with their friends, family, and colleagues who they thought might be interested in participating in this research.
Participants were, in the end, recruited primarily through snowballing through three or four key participants and friends from personal networks. Participants from the Illawarra region of New South Wales, Australia, were recruited through a PhD student colleague in the University of Wollongong’s Geography School. These individuals were her neighbours and friends, with strong personal and social relationships with her. Opportunities to further grow recruitment through these migrants’ networks was limited as their migration status was temporary (student visas, primarily) and therefore their social circles were somewhat limited. While such methods of recruitment might seem conventional, it’s important to note that the main reason why such methods worked so effectively in a sample group of disparate persons in three countries (New Zealand, Papua New Guinea and Australia) was through media that until fairly recently were not widely available, particularly in PNG. PNG communication infrastructure is less established than both Australia and New Zealand – according to the country’s National Information and Communication Technology Authority, only 10 percent of Papua New Guineans have access to the internet, as (at the time of writing – there are plans to introduce low-cost broadband internet in 2020) it is amongst the most expensive in the world compared to income (Deloitte Touch Tohmatsu 2016). However, it appeared that, amongst PNG migrants in Australia/New Zealand, Facebook was highly adopted. Facebook thus became the social network through which many new connections were made. Usually, recruitment took place by participants contacting friends through Facebook and then contacting the researcher through the same platform. Many participants had wide networks that existed on Facebook and online, but not necessarily face-to-face in ‘real life’. It is also one of the most frequently checked means of communication – many participants who didn’t often respond to emails were far quicker to respond if contacted via Facebook’s messenger function. Emails also served to be an important communication and recruitment method.

I recruited participants from Hamilton, New Zealand, through a family friend who had worked as a researcher in PNG for several years. He is not from PNG himself but, having spent time in the country both in work and for research, he had extensive networks of PNG migrants in Hamilton. As a lecturer at the University of Waikato, he knew several PNG students who expressed interest in participating in my research. Participants in Sydney, Australia, were recruited both through the family friend
mentioned above but also through some of the participants from Hamilton. From these initial connections, further snowballing of participants occurred which extended also to participants in Wollongong, Australia. Most contact was via the internet, which enabled rapid international-scale networking.

Underscoring this process of recruitment was the importance of personal connections and relationships, without which many participants who in the end agreed to participate, would have been out of reach. My contacts in New Zealand had fairly extensive networks in Sydney and it is from these friendships that I was able to connect with several PNG people in Australia. The network of contacts I used comprised mostly individuals who either worked in academia or were students at academic institutions. Therefore, they knew primarily other PNG migrants who were currently undertaking tertiary education.

Fostering a rapport of trust was an important component of the recruitment process (as noted in section 4.2 above) and of encouraging potential participants to want to contribute their time and knowledges to this project (Brown et al. 2014). Historically, issues of trust – and mistrust – have been a key challenge for researchers who work with minority groups, such as Papua New Guinean migrants in Australia/New Zealand. As Zinn (1979) points out, a history of exploitative research relationships with minority people has resulted in some hostility and distrust of researchers and academia that, despite the passage of time since Zinn’s observations were put into print, still exist today (Wang et al 2017).

Particular problems of power inequities and racial disparity arise when brown (or black) bodies are researched by white bodies, as is arguably the case here - although technically a person of colour (I am of mixed racial descent, half-Pakeha (white) New Zealander and half-Thai), my physical embodiment reveals few markers of my Asian heritage (when I reveal my complex cultural heritage to others, it is not uncommon to receive a response of surprise that I am not (fully) white) although several of my participants ‘suspected’ I was different from the norm. Trust is an embodied phenomenon, and our fleshy, corporeal realities matter in the process of forging relationships of rapport. Considering the colonial history of exploitation that exists
between Australia and Papua New Guinea, it was important for me to acknowledge how my physical embodiment might be a source of potential wariness and caution. As Withers (2017) points out, it is important that as researchers we are cognizant of how and why we and our informants ascribe trust and trustworthiness in others, a process that is inherently embodied and affectual (Withers 2017). However, despite the fact that I largely ‘white-pass’, my own experiences living in a cross-cultural household and ‘telling stories’ of some of my family’s experiences with food in a migrant household, was a point of commonality across difference. I found that our interactions countered a tendency in academia to frame a research relationship as being either one of sameness or difference, which has had the implication that social scientists often fail to acknowledge that researcher and researched can forge understandings across ‘difference’, or encounter points of contention through their ‘sameness’ (Valentine 2002).

As noted above (section 3.5.1), my first meeting with each participant was rarely an interview or other research activity. Rather, we spent at least that initial encounter ‘getting to know’ each other through informal conversation and sharing of stories. As George and Stratford (2010) point out, ‘getting to know’ the person is important in establishing mutually beneficial relationships of trust. Such ‘orientation’ sessions are vital to the success of working with participants, particularly across difference. At the same time, I explained the research project, why I was interested in the topic, and how I hoped that it could in some way benefit the local PNG community. I was transparent about the aims of the research, its place within a wider research project, and my own interest in the topic and with working with PNG migrants. Several participants commented that they greatly appreciated this transparency and honesty. It was at the end of these informal ‘chats’ that I introduced the formal documentation (consent forms and information sheets) and explained their purpose and meaning.

4.6 Sample Attributes

The sample consisted of 12 Papua New Guinean migrants in the Sydney/Illawarra regions of New South Wales and the Waikato region of New Zealand and were recruited from August 2016 to January 2018. Table 1 outlines some of the key characteristics of this group of participants.
As is evident from the table, the majority of participants were students (see above for a discussion of the recruitment challenges posed by this). As a result, the sample is largely comprised of temporary migrants to Australia and New Zealand. In fact, many PNG migrants in these two countries reside there on a short-term basis, either as students (as is the case for many of the participants of this research) or – and this is particularly the case in Queensland, Australia – as seasonal workers present in their host countries for limited periods of time to work in agriculture. Accordingly, speaking to students provided interesting insights into a temporary migrant population that is largely transitory. This poses the opportunity to explore not only how food sustainability practices from PNG are maintained, adapted or discarded as people move to Australia, but also when they return to PNG. For most temporary student participants, planned length of stay was tied to the length of their studies and their intention was to return to PNG at the conclusion of their education.

Recruiting primarily students was the result, perhaps, of most networking and snowballing contacts being embedded in some way in academia, either as students themselves or as (academic) staff. The word ‘student’ in Australia brings to mind
several stereotypes, that of the young school-leaver (17-25) being one of most prevalent. However, it is clear from the table above that this does not hold true for many PNG migrant students in Australia. Most participants who were in Australia/New Zealand for education were between the ages of 30-45 and were on scholarships provided to them either by the Australian or PNG governments or by their employers (usually, but not always, in the education or health sectors), suggesting that many from PNG who come to Australia/New Zealand for study are able to do so only with the backing of an institution’s financial support. The fact that many of the participants were students in tertiary education, a large number of whom were postgraduates, indicates that the sample is highly educated. However, this may not necessarily be the case for the majority of Papua New Guineans and it cannot be assumed that access to tertiary education is widespread. It must therefore also be acknowledged that the subset of migrants who participated in this research are likely to be from more privileged backgrounds that have afforded them the opportunity to study overseas. Accordingly, the experiences discussed in this research may not be reflective of the perspectives of other people from PNG.

Largely (but not entirely) absent from the sample were PNG migrants who were not students and who had a longer history of settlement in Australia and Aotearoa New Zealand\(^2\). It could be expected that these migrants have very different food-oriented stories and food sustainability practices than those who have resided in Australia and Aotearoa New Zealand for much shorter lengths of time. Their experiences, unlike more transitory populations, are likely to have been shaped by years of establishing and maintaining relationships, routines, and rituals of practice.

Most participants were female. In PNG, as in many areas of the Pacific, traditional gender roles are prevalent. Women traditionally are positioned as being responsible for the preparation of food. It is therefore perhaps not unexpected that a PhD project about food would attract those who have most to do with its preparation, storage and disposal.

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\(^2\) Because only one participant was a long-term migrant, the thesis focuses on the experiences of temporary migrants (mostly students). Examining the differences between the experiences of temporary migrants and more permanent, long-term migrants is outside the scope of this thesis.
However, as Bourke and Allen (2009) point out, in PNG, men also do participate in food-related labour (particularly agriculture, but also in performing some tasks that might be considered as ‘women’s work’ in kitchen spaces). Their experiences and perspectives are therefore of equal interest for this project, and the fact that a comparatively small number of male participants were recruited is a limitation that should be noted.

4.7 Conclusion

It is clear that recruitment has been largely overlooked in the human geography literature, even though the ways by which we form and maintain connections with others has substantially changed since the turn of the millennium. Furthermore, recruitment of ethnic minority groups for social science research in general has been rarely discussed, and even more so in an explicitly post-colonial context. I have here demonstrated the recruitment challenges that researchers can encounter when engaging with members of social groups that are ethnically diverse, small in numbers, dispersed, and largely transitory. Social science researchers working with such communities need to consider the following in their recruitment strategies:

1. Personal connections and relationships are vital to accessing participants and engendering feelings of trust. Such connections and relationships do not necessarily need to be proximate, as increasing use of internet and social media has allowed for easier trans-national communication.

2. Incorporating an informal ‘getting to know you’ meeting aids in fostering trust and rapport with participants from ethnically diverse backgrounds and for whom research engagements have not always been positive. Discussing the research directly with participants and being transparent about the aims, benefits and challenges helps foster feelings of trust.

3. Utilisation of social media and internet-based communication methods, particularly Facebook, is a vital component of the recruitment process for a community that is small, transient and widely dispersed. Furthermore, social media allows for international networking that would otherwise be impossible and thus widens the networks from which researchers can recruit.
If human geographers are to answer calls for increasing research with those from minority cultures, incorporating some of these practices may help in our recruitment efforts so that voices from these communities can be better represented in academic literature. It is important that recruitment within a post-colonial context incorporates the need for alternative methods of engagement that resonate with non-western epistemologies.

In Chapter Five, I present the first of the empirical chapters. I introduce the notion of the ‘food provisioning assemblage’ through the examples of foraging for leafy green vegetables, shopping for groceries, and checking domestic food supplies. The chapter argues that the food provisioning assemblage produces refrains that make and remake home in ways that motivate people towards or away from environmentally sustainable food practices.
CHAPTER FIVE: GROWING, FORAGING AND BUYING – THE FOOD PROVISIONING ASSEMBLAGE

5.1 Introduction

This chapter explores how PNG migrants’ food provisioning rhythms and practices transition to Australia and Aotearoa New Zealand and the implications of this for household sustainability. I mobilise Deleuze and Guattari’s notions of the assemblage and the refrain, alongside post-structuralist feminist ideas of affect, viscerality, and embodiment to think through how rhythms of shopping, growing, foraging, preparing and eating food sustain certain subject positions and territories. In so doing, I offer insights into how food provisioning as an assemblage is a relational process that can push people towards, or against, more sustainable action and thus shape how food becomes waste in domestic space. I argue that becoming part of a provisioning assemblage in the Minority World increases the volume of food that migrants discard, even for those who arrive with histories of frugality.

Food provisioning rhythms and routines have been of interest to some scholars in the health (e.g. Jilcott Pitts et al. 2013) and consumer studies (e.g. Kärrholm 2009) fields. While food waste is increasingly being included in these conversations (see Stefan et al. 2013, Stancu et al. 2016, Fiore et al. 2015), it is rarely addressed in terms of migrants’ everyday experiences in their country of settlement. Furthermore, this growing body of work does not often adopt an assemblage-oriented approach to thinking through these issues of migration, food consumption, and waste. The more specific concept of the refrain appears to be absent altogether from this work, even though it can offer insights into how shopping rhythms are socio-materially constituted. This chapter seeks to help fill this gap in scholarly knowledge.

The chapter is structured in four parts. First, I begin by outlining the theoretical concepts that inform the analysis – specifically, the food provisioning assemblage, and related concepts of the refrain and affect. In applying this framework, I enable food provisioning to be rethought of as co-constituted through the rhythmic interplay that
comprises spaces, subjectivities, and temporalities. Second, I introduce the participants whose narratives provide the empirical basis for the chapter’s arguments. In so doing I offer insights into the social, cultural, and economic contexts that have shaped their everyday experiences both in PNG and in Australia or Aotearoa New Zealand. Third, the chapter uses the examples of aibika and karakap (leafy green vegetables) to illustrate how migrants’ capacities to grow and forage for foods from ‘back home’ in PNG were reduced by the rhythms and affective forces normalised in the post-migration provisioning assemblage. Fourth, I discuss how the different food provisioning refrains that were normalised pre- and post-migration sustain certain subjectivities and notions of family that worked against people achieving more sustainable shopping rhythms in the post-migration context.

5.2 Food Provisioning Assemblage and the Refrain

In this chapter, I bring Delueze and Guattari’s (1987) concepts of assemblage and refrain into conversation with the feminist post-structuralist notion of affect. Doing so makes it possible to draw insights into how food provisioning produces certain subjectivities, places, and temporalities that work against, or towards, sustainable domestic food behaviours. By framing food provisioning as an assemblage, the chapter highlights how it is always relationally constituted, that is, re-produced through the intra-actions between forms of content (actions, bodies, things, etc.) and forms of expression (affect, ideas, discourses, etc.). As Chapter Two suggests, assemblage thinking rejects the binary notion of cause-and-effect and promotes the idea that food provisioning “emerg[es] through the non-deterministic enactment of processes of world-making” (Anderson et al. 2012, p. 181). Rather than understanding food provisioning as linear, or of food waste as the unilateral movement of matter from one state to another, assemblage thinking opens up the opportunity to think of these phenomena as ongoing processes of becoming that are “always being provisionally ordered” (Anderson et al. 2012, p. 181). Accordingly, food provisioning is not static or fixed, but instead fluid and open to moments of change and innovation (Boyer & Spinney 2016).

The ever-changing and rhizomatic qualities of the food provisioning assemblage are particularly evident in the experiences of migrants who, as they move between their country of origin and their country of resettlement, find themselves negotiating shifting
expectations, knowledges, built environments, social norms, and relationships. The food that people bring into the provisioning assemblage can play a vital role in how home is made, remade and unmade in an unfamiliar socio-cultural landscape (Johnston & Longhurst 2012, 2013; Rabikowska 2009; Hage 1997). The shopping, foraging, and growing rhythms by which that food is procured are also key to how domestic space is made homely and comfortable. Thus, I use the notion of the refrain (Deleuze & Guattari 1987) as a lens through which to understand how these rhythms territorialise domestic space as safe and secure for migrants in a context of change and upheaval. This chapter highlights how the different rhythms that constitute the provisioning assemblage in PNG and Australia / Aotearoa New Zealand are integral to how family is performed, felt, and understood. This is achieved because these rhythms generate a liveable order that sustains certain valued subject positions that, in turn, make domestic space comfortable and homely.

5.3 Participant Portraits

I draw on the lived experiences of five Papua New Guinean migrants. **Connelly (36)** migrated to Hamilton, Aotearoa New Zealand in 2016 to pursue a Master’s degree in human resources at the University of Waikato. In PNG, he worked for provincial government / administration as a human resources officer. He lived in campus self-catered accommodation, in a ‘cottage’ that he shared with five other post-graduate students, many of whom were from other nations in the Pacific region. Connelly was the recipient of an NZAid scholarship that covered both his tuition and living costs. He came from the island province of Bougainville and lived on a small island in the area. His family was a matrilineal line where land was passed down through the generations to female family members. He lived in Hamilton alone, his two daughters remaining in PNG with their mother.

**Lakari (41)** lived in Wollongong and moved there in 2015 to pursue a Master’s degree in business administration. Like many participants, he had a scholarship to support his living costs and cover his tuition while in Australia. When he first moved to Wollongong, he lived by himself and thus was responsible for all of the food-oriented decisions for his household. However, six months into his stay in Australia he was joined by his pregnant wife and three of his four children. As a result, the food-oriented
labour in the house was redistributed. Lakari came from the Hela province in the Southern Highlands, a mountainous area that is considered quite remote, but he worked and lived in Port Moresby most of the time. In PNG, he worked as a financial inspector for a government department and hoped to return there after finishing his study to take up a senior position.

**Jessica (38)** is Lakari’s wife. When she migrated to Wollongong to join her husband, she was pregnant and arrived with three of her four children. Like her husband, she came from the Southern Highlands and while she identified her husband’s home village as her own, she grew up in a different village. In Australia, she was responsible for much of the food preparation, shopping, cooking, and waste management in her household, and identified as a home keeper.

**Marina (33)** moved to Hamilton in 2017 to pursue a qualification in electronic commerce at the University of Waikato to support her career in banking. Her husband and son still live in PNG. Though she lived in Port Moresby for 10 years, at the time of our meeting, she no longer did so because she found the pace of development in the city to be too rapid and the cost of living too expensive. Like Connelly, she lived in self-catered campus accommodation in Hamilton, sharing a cottage and communal kitchen with three other female international students.

**Joyce (43)** was a teacher trainer in Papua New Guinea. Before she moved to Wollongong in 2017, she lived in Wewak, the main urban centre in, and capital of, the East Sepik province, with her husband, and their children. She has also lived in Port Moresby. Her family did not migrate with her and remained in PNG. Though she had migrated in the past to New Zealand for university education, she came to Australia to attend the University of Wollongong to gain a postgraduate qualification specialising in ICT (Information and Communication Technology) in education, while at the same time pursuing a TESOL (Teaching English as Second Oral Language) qualification.

### 5.4 Encounters with Leafy Green Plants

As migrants moved to Australia and Aotearoa New Zealand, it became apparent that the rhythms and affective forces normalised in these social contexts worked against
people’s capacities to engage in the more environmentally sustainable practices of growing and foraging for foods commonly found in and eaten in PNG. Here, I discuss the examples of aibika (Abelmoschus manihot) and karakap (Solanum nigrum, two leafy vegetables – referred to by the migrants as ‘greens’ – commonly found and eaten in PNG but not so easily accessible post-migration. The lack of familiar foods such as these appeared to leave a void that could invoke a strong yearning for home. Their efforts to seek these foods out confirms existing research in the literature positing that food is often the device through which unfamiliar spaces can be made to feel homely and comforting (Hage 1997, Johnston and Longhurst 2012). However, at the same time, their absence may serve to destabilise the home through negative emotions and affects. Furthermore, because of the absence or inaccessibility of plants like aibika and karakap, participants often had to alter their food purchasing rhythms. This often had a flow-on effect on how food eventually became diverted to the waste stream.

The absence of aibika was noted by several participants in our conversations. Aibika, is a very popular food choice in PNG and has been found to be high in protein, calcium, iron, vitamin A and C, and folic acid (Lyons et al. 2010). Many participants mentioned that it was a staple food in their diets before they moved overseas. For Joyce its absence was felt not only by herself, but also by many of her PNG friends and acquaintances, who “really miss aibika, ... and of course that can’t grow. The climate is just all wrong”. A key point here is that Joyce identifies the importance of seasonal and weather rhythms in making possible the growing of aibika. She went on to mention how different rhythms of rainfall and temperature, for example, made it impossible for migrants to grow the plant in their gardens, if they had access to one. Thus aibika, and the processes and rhythms of growing, harvesting and purchasing it that were part of everyday life ‘back home’, became absent from the food provisioning assemblage. The absence of aibika in the post-migration assemblage, Joyce’s quote suggests, brought to the fore feelings of yearning. Thus, its absence served to highlight the differences between old home and new home, particularly in terms of the environmental context (weather and climate). This example supports the arguments of several scholars that the materiality of food can often be embedded with feelings of sadness and longing (Ahmed 2004; Johnston & Longhurst 2012, 2013; Raman 2011; Parasecoli 2014). A desire to
recapture feelings of home through foods like *aibika* drove some participants to seek out alternative ‘greens’ that could fill that void, as discussed below.

The *karakap* plant (see Figure 1) was also identified as a leafy green vegetable that became inaccessible post-migration. However, unlike *aibika*, which struggled to grow in the climate of Australia (with the exception of more tropical areas to the north) and Aotearoa New Zealand, *karakap* was abundant but not suitable for foraging or eating. Known as ‘blackberry nightshade’ in Australia and Aotearoa New Zealand the discourses around this plant in these places position it as unwelcome and undesirable. Parts of the plant are poisonous to both livestock and humans. Hence, some government agencies consider the entire plant to be toxic (Queensland Government 2019) despite the fact that the ripe berries and leaves can be consumed safely both as food and as herbal medicine. Furthermore, *karakap* is considered an invasive, non-‘native’ species that may pose a threat to ‘natural’ ecosystems that are already at risk. Thus, in Australia and Aotearoa New Zealand, the plant is considered a dangerous, inedible intruder that has little use or value and may in fact damage agriculture and ‘native’ flora and fauna. Accordingly, *karakap* is often positioned by scientific reports as a weed, to be controlled or eradicated (Head et al. 2015). These expressive forces around *karakap* work against it being considered a viable food source and thus foraging for it becomes an impossibility with the introduction of herbicides to control its population growth.

This positioning is particularly important, because it paints *karakap* as waste in and of itself before it ever fulfils its capacity to become food. As Douny (2007) points out, weeds connote neglect and an absence of care as they encroach upon the space of desirable ornamental or edible plants. Accordingly, weeds must be removed from both public and private space as they constitute matter out of place (Douglas 1966, Head et al. 2015) and, in urban contexts, destabilise notions of space as controllable, clean, and pathogen-free (Srinivasan 2018). Plants categorised as weeds are further rendered inedible through the methods employed to remove them in Australia and Aotearoa New Zealand. The introduction of toxic herbicides to the provisioning assemblage means that Connelly cannot forage for *karakap* despite seeing it ‘everywhere’ around him, as identified in my research notes from our unrecorded pre-interview meeting:
Connelly spoke quite a bit about a plant called karakap, which he said grew everywhere around [the University of Waikato] campus, but that he couldn’t eat. I wasn’t sure what plant he was referring to, so he took me outside later and showed me some growing outside Momento [a café on campus]. I didn’t recognise it, as it seemed to me to be just another leafy green weed and something that I’d never noticed before. He mentioned that at first, he was quite pleased to see so much karakap growing around, but his friends told him it wasn’t good to eat because of the pesticides that people spray on them. He mentioned that it was frustrating to see so much of it and be unable to forage or harvest it, and that it was a waste for it to be just growing there only to be killed off. He and his friends could have made use of it and eaten it.

Figure 1: A karakap plant Connelly showed me at the University of Waikato
The material embodiment of the *karakap* plant becomes one of toxicity with the potential to cause ill-health, regardless of the presence of chemicals or not. For Connelly, *karakap*’s transformation to inedibility within the procurement assemblage engenders an affective response: that of frustration and longing. The abundance of a food that can never be harvested, foraged or eaten, seems to him to be wasted potential and the opportunity to territorialise home in Aotearoa New Zealand through rhythms of foraging and eating *karakap* was therefore lost. While these rhythms were common in PNG and helped to sustain the rural domestic territory as stable and secure, they were disrupted post-migration by the interplay between expressive forces that frame the plant as dangerous, unhealthy, Other, and weed, and the material forces of toxic sprays.

In the absence of familiar green vegetables like *aibika* and *karakap*, some migrants turned to alternatives available widely post-migration, as Jessica does in Wollongong, Australia:

**Rebecca:** *Is there anything else that you miss from home that you can’t find here?*

**Jessica:** *Yeah, like the only thing we could find in here that we like is the kalee. The kale ... It’s like, similar to, to what we like so that is why we are buying that ... And like this, these leafy foods that we are seeing when you [Australians] are growing ... they are not really naturally grown but like they are putting some things to make it grow. In our country, it just grows.*

For Jessica, the absence of leafy greens that she enjoys from PNG in the food provisioning assemblage pushes her to seek out alternatives that are easy to find in Australia, such as kale. Rather than engaging in rhythms of growing or foraging, however, she has to purchase it from supermarkets and ‘vegie shops’. Accordingly, she adopted changed rhythms of purchasing to access foods that could provide familiar embodied experiences and feelings of pleasure while eating. Kale filled the void left behind by the absence of vegetables that she liked in PNG. However, the affective and visceral experience leaves something wanting, and her efforts to recapture the same tastes as she would encounter in PNG by changing her routines and rhythms of
shopping appear destined to fail. The processes and rhythms of production that exist in the Australian supermarket supply chain and agricultural systems had a very real impact on her enjoyment of the kale, as she later identified foods have “less flavour” than similar plants in PNG as a result of fertilisers and sprays. Thus kale, while on the one hand providing an opportunity for Jessica to capture feelings of nostalgia and familiarity, also served in some moments to widen the chasm between old home and new home.

5.5 Food Provisioning Rhythms and Doing Family

For some participants, a vital part of the food provisioning assemblage in PNG was their embodied knowledges about rhythms of subsistence agriculture. These knowledges and rhythms constituted a refrain that helped to sustain notions of the rural in PNG but felt ‘out of place’ in the (sub)urban contexts people lived in after they migrated to Australia and Aotearoa New Zealand, where ostensibly more wasteful rhythms and routines were the norm. Marina, for example, explained how the intergenerational transfers of these knowledges and rhythms were key to how relationships between women were constituted in everyday life and played an important role in how community was (re)made in rural PNG:

Marina: So, like, for a girl growing, like, when you’re born and then you’re raised, like, your mother teaches you everything. So, then it’s, I spent a good number of years, like, growing up in some of the local areas in PNG. So, and I had, um, house girls and babysitters who are local women so then they’d teach us, like we’d go to the gardens and they’d be like okay so you watch this plant, this is how you harvest it. This is when you’ll know it is ripe, like there are certain ways of like looking at the vegies and stuff. This is how you know this is ripe, this is ready to eat. Or, you know it’s been forced to ripe or it’s been just like, cut or harvested from the garden and then left to ripen probably or to get to a stage where it can be sold. Yeah. So… It’s passed down. Yeah, to their daughters. And it passes on. Yeah. Also, I guess, from experience. Like sometimes for those that are not really family, those that were not raised, like, in the villages, they actually go and buy
It is apparent from Marina’s account that embodied knowledges of food procurement in this context were highly gendered. Practices of intergenerational knowledge transfer circulated amongst women and helped to create and maintain relationships between, and community among, female members of villages and families. In PNG embodied knowledges of the agricultural rhythms of growing and harvesting food, and the practices by which women shared them, helped to produce gendered identities of ‘mother’, ‘grandmother’ and ‘house girl’. Thus, learning fruit and vegetable ripening, fruiting, and flowering rhythms was important not only in terms of how people came to know if certain foods were appropriate to harvest and eat (ensuring the practices were sustainable and not wasteful), but also in terms of how gender roles and subjectivities were produced pre-migration. Furthermore, Marina suggests that these emerging roles and subject positions helped to (co/re)constitute the rural as gendered spaces of learning, family relationships, and community. Embodied and material knowledges about food procurement clearly foster a potential sense of connection, belonging, and community alongside notions of what makes the rural territory in PNG. However, Marina also acknowledges that the urban is made through the absence of these moments of intergeneration knowledge transfer. It is implied that a sense of disconnect from rural space and family / female relationships results in a process of ‘trial and error’ by way of material or bodily experience through which this knowledge is gained.

Marina’s experiences also illustrate how embodied knowledges gained pre-migration through intergenerational rhythms of knowledge transfer can also help to reduce food waste, at the same as it helps her to reconnect to PNG. Marina brought these embodied knowledges with her to Aotearoa New Zealand and integrated them into her current purchasing practices. In doing so, she was able to attempt to forge a connection between ‘old home’ and ‘new home’ by applying familiar embodied knowledges that helped to constitute a sense of self and belonging in a new environment (Hage 1997; Longhurst et al. 2012, 2013). In the following conversation, she explains how she applies these embodied knowledges when shopping for taro (*Colocasia esculenta*) and sweet potato.
**Rebecca:** So what, um—can you give me some examples, actually, of, um, some of your favourite fruits and veggies that you buy in New Zealand and how you, you know, what you look for when you buy them?

**Marina:** Okay, um. What would – oh, kumara is one. Um, when I go to the Silverdale shop [a local fruit and vegetable store], um, I look at the size and then I look at the skin to see whether it is bruised or whether it has a lot of the um, what do you call it? The roots stuck to it. And, yeah. But basically, it is the skin itself. And then I tend to pick it up and see whether, feel whether it’s like light or it’s heavy or it’s soft. Yeah. So, then from there I can be able to work out, like, whether it’s good or, so if, kumara, which has soft skin, doesn’t have a lot like the roots stuck to it and—

**Rebecca:** Soft skin?

**Marina:** Yeah, ah, smooth. Yeah. Like it’s – like it hasn’t been bumped or bruised, yeah. So that’s something I look for, yeah.

Here, Marina introduces the idea of looking, touching, and weighing, rhythms of food selection that follow a certain order and require certain embodied knowledges of what constitutes kumara that is suitable to purchase. If a kumara feels too light, doesn’t feel smooth and soft, looks bruised or bumpy, or has roots sprouting from it, it is unlikely that Marina will purchase it. Thus, it never enters her home, where it then has the opportunity to become domestic food waste more quickly than kumara that do not have these qualities. In rejecting these foods at point of purchase, Marina avoids introducing them into her home where through rhythms of decay they may destabilise the domestic space and thus become consigned to the bin.

These practices indicate potential pathways through which food waste may be produced. Marina’s embodied knowledge and experience of taro (which is imported to
Aotearoa New Zealand, mostly from Fiji, and often already deteriorating in the shops) and sweet potato that she gained in PNG has shaped her food preferences. Through avoiding the purchase of what she deems inferior products, she avoids the possibility that she may have to send these foods to the bin. The taro and sweet potato available post-migration had very different material characteristics from that she was used to in PNG:

**Marina:** Um, I think, I’d say the texture itself is not, um, is… [pause] Not good, yeah … It is too soft, yeah. Cause the one we have back home is, like when you lift the actual taro up its heavier, whereas the ones here is a bit lighter so you know that—

**Rebecca:** Oh, so you know there’s more air.

**Marina:** You can feel, yeah … So, the kumara in PNG, we have so many different types. So, they vary like the different parts of PNG. And in terms of sweetness as well, so, um, the ones here [Aotearoa New Zealand], like the ones that I’ve tasted so far have been like of the same texture … The ones here are a bit watery … Yeah, so when you try to boil it, it gets very soft quickly whereas back home we have different types and there are some that you boil and although they are cooked, it’s, like, really nice and hard on the inside, yeah.

From this example, I argue that the embodied knowledges and experiences of taro and *kaukau* that Marina knew from PNG, and that helped to constitute the rural pre-migration, clashed with the material reality of taro and *kumara* in Aotearoa New Zealand. For her, ‘soft’ was not a quality that she appreciated in these foods. She implies that the ‘nice and hard’ *kaukau* she enjoyed in PNG were desirable, but the watery, soft, less flavourful *kumara* post-migration were less so, providing less visceral pleasure and therefore holding less appeal. Taro and *kumara* in Aotearoa New Zealand were felt as ‘too soft’ and ‘lighter’ through embodied and visceral knowledges of touch when compared to that which she was used to consuming. ‘Softness’ thus became a marker that highlighted the disparities between old home and new home and served as a reminder of distance and difference. Thus, soft foods were often determined to be
destined to become waste and were not purchased and consumed. This was a perspective shared by some of the other migrants. Jessica, for example, spoke of how ‘soft’ vegetables and fruit were not something that provided a pleasurable eating experience for her or family members. Consequently, these foods were sometimes not consumed and thus discarded. For example, Jessica said, when talking about how she purchases fruit in Wollongong, Australia:

Rebecca: So, when you’re picking your fruit and vegies, do you use smell?

Jessica: No. Feels. Not smell, but you feel. It’s hard a bit, I buy. I buy. Not soft … We like crunch … Oranges there is like water in there so. Apples is like crunch. When I feel it and it’s strong, I buy.

Like Marina, Jessica employs embodied knowledges of touch to make decisions about which fruits she and her family will enjoy and want to eat. Again, ‘soft’ is sensed as an undesirable quality. Soft fruit and vegetables are more likely to be discarded once they enter the home. For instance, Jessica goes on to mention when talking about her encounters with soft apples in her fridge: “We just throw it [soft apples] into the bin. What? This is not a good apple. What do I do? This is not good”. From Marina and Jessica, it becomes apparent that embodied knowledges about foods like taro and kumara and the practices that accompany such knowledges do transition easily into the post-migration context. However, the differences in the visceral and sensory enjoyment that people have while eating these foods means that soft fruit and vegetables are more likely to be left uneaten.

Because the material and expressive forces that comprised the provisioning assemblage are fluid, shifting over space and time as migrants move between PNG and their country of settlement, food shopping routines and the refrain that they (re)produced were very differently realised in the Australian and Aotearoa New Zealand. Accordingly, the rhythms that created the house-as-home as safe and stable in PNG became destabilised post-migration. As a result, there was a need to adopt the rhythms of supermarket shopping in Australia and Aotearoa New Zealand that comprised these places and re-establish a homely and comfortable domestic territory. As Deutsch (2010) points out,
supermarkets – and thus also the rhythms of shopping that help to sustain them – are embedded in capitalist notions of mass consumption. However, at the same time they can also help create family and belonging in a post-migration context.

Food-oriented practices, including acts of provisioning, have been shown by many scholars to be key to how home and family are (co/re) constituted in everyday life (Rabikowska 2009; Hage 1997; Johnston & Longhurst 2012, 2012). This is shown to be the case for Lakari, who explains in the following exchange how everyday domestic routines around the provisioning of milk sustained his family in a very different way from that in PNG:

**Lakari:** But coming in here [Australia], different things happen. So, it’s our pattern of, our pattern and our process of food is quite different now. The kids, they have got to have breakfast, carry their lunch pack. So, everyday I’ve got to look for their milk. Because milk has to last for a week or so around here. You don’t have to buy a milk tablet to stay for months [laughter]. So, we’ve got a concern whether there’s milk in the house, whether there’s bread in the house, and, like, sugar and all these things to go with tea, morning milo.

In particular, Lakari highlights how patterns, rhythms and processes of food that sustain notions of family were very different in Australia in comparison to PNG. He raises the example of milk to illustrate this point. In PNG, buying milk was a less frequent food shopping rhythm because the tablets he bought could sustain his family for months and did not need a refrigerator to keep from decaying because its material embodiment was dry and less at risk of spoilage. In Australia, Lakari could buy fresh milk but this did not last as long and needed to be purchased more frequently. Lakari thus needed to engage in rhythms of checking every morning to ensure that the foods that sustain family life for his household haven’t run out. Foods such as milk, Lakari implies, are important for how family is enacted through preparation of lunch packs and the provisioning of breakfast for his children. Thus, shopping and checking rhythms are important to how family is constituted both in Australia and in PNG. The implication is that if these foods were to become absent, if the domestic rhythms and routines that comprise a family
morning were to be disrupted, the alimentary refrain would become destabilised and home as safe and secure could be potentially threatened.

From this example, it becomes apparent that rhythms of food shopping are both shaped by, and sustain, Lakari’s family’s everyday domestic routines. Lakari’s family is the outcome of a process, and he notes that workings of food in sustaining a family are different following migration. Changing his rhythms of milk checking and purchasing, however, were seen as important in helping to establish their Australian kitchen as a comfortable and secure domestic territory. Adopting normalised ‘Australian practices’, such as having breakfast at an allocated time in the morning and bringing a packed lunch to school, helped to establish a morning domestic refrain of predictability and familiarity that would come under threat if, for example, the milk or bread had run out. To forestall the risk of chaos entering this refrain, Lakari engages in repeated patterns of checking the supply of these items and purchasing more frequently from the supermarket than he did in PNG, where milk tablets that lasted for months were the norm. Accordingly, the domestic refrain and the household territory in the Australian context were partially sustained by foods such as the milk that became an integral component of his family’s morning routine – for the morning milo and tea.

Furthermore, these food shopping and checking rhythms help to maintain the parent subject and this, alongside the material embodiment and availability of foods on sale like milk, may result in increased food waste.

In order to join a domestic refrain that revolves around food eating and purchasing, Lakari spoke about his desire to ‘eat like an Australian’. To do so, he needed to forego the PNG foods and methods of cooking that he and his family commonly used pre-migration:

Lakari: Because I’m studying so I tell my wife to take care of the food stuff, um, she tries to bring in the PNG style of cooking and food preparation and I sometimes tell her [makes whooshing noise] I’m tired of being in Australia sometimes we cut the ways of Australians to cook, you know. We’ve got to look for, you know, t-bone steak, and look for, uh, beef, slice them up, gravy them, and then... You kinda
need to do a lot of boiling like you do, you're boiling up there in PNG. You know you boil, boil, boil, boil them a lot. Forget about boiling. We’ve got an oven here, try to get those chickens, gravy them around and then, you know.

From this conversation, I argue that Lakari and his wife seek to territorialise home in different ways, by adopting disparate rhythms of food purchasing, cooking, and eating. Lakari’s wife sought to reterritorialize home by following the rhythms of food preparation that she had engaged in before moving to Australia. Doing so may be seen as an attempt to stabilise her unfamiliar and post-migration domestic space through a refrain by introducing familiar rhythms of food preparation, such as boiling. Often the food she prepared used methods of PNG cooking (see Figure 2).

![PNG meal prepared in Australia by Jessica for her family](photo by Lakari)

**Figure 2: A PNG meal prepared in Australia by Jessica for her family (photo by Lakari).**

Her active search for foods that she enjoyed in PNG such as pumpkin tips in Australian supermarkets may also be seen as an effort to establish a connection to the familiar through food (Hage 1997, Rabikowska 2010, Longhurst et al. 2012, 2013). However, Lakari rejected her attempts to territorialise home in this way. As part of the refrain, Lakari encouraged his wife to change their food purchasing, cooking, and eating rhythms to help constitute his sense of self as Australian and establish a sense of
belonging in post-migration. He is mobilised to do so by a desire to eat Australian style meals and by the material elements of the food provisioning assemblage such as ovens, T-bone steaks, and chickens. Thus, it appears important for him that he and his family join the normalised shopping refrain already existing in Australia so that they may realise the ‘Australian’ subject. Accordingly, rhythms of food preparation performed in PNG like boiling meats were to be rejected in order to join the ‘Australian’ food provisioning refrain and establish a sense of belonging. It appears that disparities between his and his wife’s desired rhythms of food procurement and preparation may invite conflict and chaos that potentially could destabilise the home territory and thus must be carefully negotiated.

In Port Moresby (PNG), however, shopping rhythms had the potential to support very different subject positions and notions of family. Joyce, for example, highlighted how the many shopping rhythms that she engaged in when living in Port Moresby helped to facilitate both the collective and working subjects. These were important to establishing a sense of self and identity. When asked how she shopped in PNG, and in what ways it was different from how she did so in Australia, she said:

*Joyce: When I’m busy at work [in PNG] like most of the times I go back home, um, late, so I have um... Like a house girl ... I have my like stepdaughter. I tell her, okay, you send the babysitter or the house girl like just to help us go out, or otherwise she can look after the kids and then she goes to the market. So that’s what they do, I just leave the money, the list, and then say you just decide between the two of you who’s going, so yeah, they do that.*

This example brings to the fore how the ways in which people negotiate their mundane food provisioning rhythms helped to (re)create the extended family unit. This supports existing arguments that acts of shopping are key to how family relations are realised (Miller et al. 1998). Shared rhythms of food shopping helped to constitute a sense of family and community. The presence of house girls and babysitters, and their role in food provisioning practices, illustrate how communal and collectivist values that sustain the extended family unit in PNG are embedded in Joyce’s domestic space (it is
important to note here that house girls may not always have family ties to a household, but they are often members of the immediate or extended family – in Joyce’s case, her stepdaughter). They make it possible for Joyce to achieve the ‘working subject’, which she further realises through her own two-weekly rhythms of delegation and planning, as she mentions below:

Joyce: Whenever I buy food I plan for like two weeks so we have this food, finishes by the next fortnight and then we go out to buy new stuff for, yeah, the kitchen. And also, like, we do marketing. There’s a big market back at home, um, where people come from villages to sell fish ... they sell all garden produce and yeah ... So, like with the mark – uh, garden food, we get them from the market and like ... the greens they don’t last that long in the fridge, so like, we just buy enough for maybe two or three days and then we can get the next lot later.

Rebecca: So you go to the market more frequently than you go to the supermarket?

Joyce: Yeah, more frequently than the supermarket. Cause, like, from the supermarket we get stuff from packets and tins and they can last the rest. The greens, we like them fresh and, yeah, so we just buy ... and even like fish at the market too, we like to eat fresh fish and, oh, if they’re smoked we buy them, but then we know that we can always get them like in between, so yeah.

Rebecca: Yeah, so, um you buy in smaller amounts from the markets but you go more frequently?

Joyce: Mm-hmm. Yeah.

From this example, in PNG, frequent shopping trips every two or three days to the local market for fresh foods constituted ‘normal’ everyday practice for Joyce and her family. These food purchases were supplemented by less frequent visits to supermarkets for non-perishable items such as tinned foods. This shopping routine appeared to be shaped by rhythms of rot and decay, embedded within the materiality of the food itself.
Marketing trips were routinised around how long fresh foods could remain edible, from the greens that “don’t last long in the fridge” to the fish that was only palatable if purchased fresh from a market seller rather than refrigerated or frozen from the supermarket. Organising food procurement in this way meant that Joyce could avoid inviting chaos into the home territory by ensuring that food never lingered long enough to decay and thus become categorised as waste. In this context, rhythms that are arguably less wasteful were possible because they were intertwined with how notions of the self, family and community were performed in everyday life.

5.6 Conclusion

In this chapter, I have discussed the food provisioning assemblage, including the rhythms of food shopping, preparation and eating. The chapter combines Deleuze and Guattari’s (1987) concepts of assemblage, refrains and territory, with post-structuralist feminist interpretations of affect, embodiment, and the visceral. I offer an interpretation of how food provisioning helps in varied ways to constitute home both in PNG and in the post-migration context. Affective, embodied and visceral knowledges played an important role in how people’s food provisioning rhythms were shaped in the everyday. I illustrated how embodied knowledge was key to people’s decisions about the foods that they brought into domestic space to be either consumed or, eventually, become relegated to the bin.

In the case of leafy green vegetables such as aibika and karakap, more environmentally sustainable foraging and growing rhythms that helped to constitute everyday life in PNG became disrupted in the post-migration context. For aibika, different seasonal rhythms and cooler temperatures that rendered it difficult to grow meant that the practice of raising and growing the plant ceased in Australia. Practices of foraging karakap also ended because of a discourse that portrays this plant as a weed and waste that pose a threat to normalised notions of urbanity in the Minority World. In the absence of these foods, alternative options such as kale were sought, despite being less viscerally enjoyable and thus more likely to be consigned to the waste stream.

Some food provisioning rhythms changed when migrants moved to Australia and Aotearoa New Zealand because of the different notions of family, community, and the
self that became prioritised in these contexts. In the case of taro, intergenerational sharing of embodied knowledges was key to how female subjectivities, relationships, and communities were lived and felt in PNG. However, in Australia and Aotearoa New Zealand, for some a desire to maintain domestic family routines that realise the ‘Australian’ subject came to the fore. Rhythms of shopping and cooking changed to accommodate this, although they may be considered more wasteful practices.

Through these examples I argue that food provisioning rhythms achieve more than the practical matter of food availability or access in the home. They also produce refrains that shape how home, including the procurement, consumption and disposal of food, is made, experienced, and felt. Understanding these refrains is critically important if we are to identify ways of learning about, and/or improving, the sustainability of food practices.

Chapter Six moves away from food provisioning and focuses on the ‘preservation assemblage’. Using the examples of ‘smoke’ and the ‘fridge’, the chapter asserts that preservation helps to constitute places, temporalities and subjectivities that may come under threat when more sustainable practices are implemented.
CHAPTER SIX: SMOKE, FRIDGES AND FREEZERS – THE PRESERVATION ASSEMBLAGE

6.1 Introduction

Preservation when conceived as an assemblage is an ever-changing socio-material arrangement that shifts and is reconfigured over space and time. As new more-than-human agents are introduced to the assemblage and others leave it, different practices, affects, subjectivities, materialities and performativities emerge. This chapter introduces the notion of the ‘preservation assemblage’ to better understand the implications for the processes of food conservation when people move between Papua New Guinea and Australia and Aotearoa New Zealand. Here, I examine the food preservation assemblage of PNG migrants living in metropolitan Australasia, both when they were ‘back home’ in PNG and in the post-migration context. I illustrate how forces of the changing socio-material arrangements that comprise the preservation assemblage (re)shape embodied subjectivities and push people towards or away from certain practices and the implications of this for sustainability. It is my contention that focusing on the more-than-human entanglements that PNG migrants have with the processes of food preservation furthers geographical scholarship by allowing insights into how food preservation is always a relational achievement.

In this chapter, I think through two preservation assemblages – smoke and fridge/freezers– that are transformed as migrants move between Papua New Guinea and Australia or Aotearoa New Zealand. I chose these two assemblages to be the chapter focus because smoke is a key material element of the preservation assemblage for some people in PNG, and the fridge is a key material element in Australia and Aotearoa New Zealand. Furthermore, both illustrate well how preservation assemblages make possible a multiplicity of subjectivities that shape migrants’ everyday lived experiences in both PNG and in Australia/Aotearoa New Zealand. The absence or presence of smoke and the fridge-freezer therefore has implications beyond the utilitarian goal of preserving food for later consumption. I build on the work of Probyn (2000) and Longhurst and Johnston (2012, 2013), specifically their use of alimentary assemblages to explore how
food may be conceived as relational. I apply these to better understand preservation as an assemblage that is made, remade and unmade through the entanglements of both human and more-than-human agents, and the implications of this for issues of sustainability and food waste.

Smoke is used to preserve meat in the villages of some of the participants, but this practice ceases almost entirely when Papua New Guineans become situated within the post-migration preservation assemblage. This occurs as they shift from a subsistence working arrangement to a capitalist one that makes possible a very different range of subject positions. By stopping meat smoking, participants were able to (re)produce the student and tenant subjectivities normalised by the capitalist discourses of education and land ownership/occupancy that are dominant in Australia and Aotearoa New Zealand. To continue smoking risked compromising these subjectivities, which made possible a sense of belonging in the post-migration context.

By contrast, the use of fridges continues, but is reconfigured to accommodate or adapt to the western preservation assemblage. While positioned as a luxury in PNG, it is considered to be a basic need in Australia and Aotearoa New Zealand. I discuss the fridge in three socio-spatial contexts: the home village, where fridges make possible the benevolent and entrepreneurial subject; Port Moresby, where shared fridges bring to the fore collective identity and felt difference; and Australia and Aotearoa New Zealand, where the use-by labels of goods inside the fridge frame decay as measured in units of time rather than as felt through the body. Each of these contexts demonstrate how the presence – or absence – of the fridge (or fridge/freezer) constitutes the modern, urban and the rural, which are not pre-existing but shaped by the temporal, embodied, and visceral.

6.2 Participant Portrait

In this chapter, I draw again on the experiences of Lakari (41), Jessica (38), Marina (33) and Joyce (43) (see section 5.3 for their portraits). I also introduce Martha (20), who originally comes from the Enga province but lived most recently in PNG’s largest city, Port Moresby, with her brother. In PNG, she was a secondary school student. In Wollongong, she lives with her older brother’s wife in a detached unit. She looks after
brother’s wife’s children during the day and is responsible for much of the daily food and housework.

6.3 Context: Food Work Spaces in PNG

It is important here to give some background information about food work spaces in Papua New Guinea in order to fully understand participants’ situated knowledge. I hesitate to use the term ‘kitchen’, because it implies a western, ‘modern’ idealisation of what food work is and how it is performed. Kitchen evokes particular spatial, temporal, material, and social arrangements that, as indicated by participants, did not always translate easily into the PNG context, which is often centred on subsistence agriculture remote from cities and characterised by a lack of public utilities, including running water, electricity or gas. Many participants didn’t consider there to be ‘conventional’ kitchens at all in places narrated as their home villages. Instead, much of the food work – including preservation – was situated in a haus kük, a standalone building dedicated to the preparation and consumption of food and separate from the sleeping and living areas comprising the home. Within the haus kük there usually were few, if any, cabinets, and no fridges, freezers, or ovens as might be expected in a ‘modern’ western kitchen. Rather, a fire would be built inside the haus kük for cooking, and containers or buckets would be placed for food storage if needed. Haus kük were considered by most participants to be an everyday feature of living in a rural PNG village.

Some homes in PNG did feature a ‘kitchen’, but this was identified by participants to be far more common in Port Moresby and helped to constitute the urban in PNG. These kitchens, however, were not always similar in layout to those in Australia or Aotearoa New Zealand but did feature most of the same amenities (including fridges and ovens). Some participants stated that there was little difference between their kitchen when living in Port Moresby and the one that they had post-migration (though it should be noted that most of these migrants occupied a position of relative privilege and wealth that made it possible for them to afford housing that contained ‘modern’ kitchens). Interestingly, shared kitchens also appeared to be fairly common in Port Moresby for those renting rooms in larger houses or apartment blocks. Lakari, for example, mentioned a shared kitchen – that is, a communal space used by all households residing within his building. Thus, the ways in which the fridge, oven, and cabinets were used
generated tensions between public and private spaces and how Lakari used these appliances was very different from the way he did so when he moved to his own apartment in Australia.

The ways in which food work spaces are spatially arranged and materially constituted in PNG and Australia and Aotearoa New Zealand make possible different food preservation methods which, in turn, enable certain subjectivities, performances of power, and socio-material relationships to come to the fore. Accordingly, kitchens and *haus kuk* are important elements of the preservation assemblage. The act of migration involved a change to the socio-materiality of the preservation assemblage from the *haus kuk* to the western kitchen, and in turn changes to the expressive forces of the assemblage, which I discuss in this chapter.

### 6.4 Smoke: A Preservation Assemblage that Ceases upon Relocation to Australia and Aotearoa New Zealand

My attention turns first to smoke. Smoking meat to preserve fish, poultry, and pork was commonly practiced in PNG, but stopped in the country of resettlement. Smoking meat may be considered a more environmentally sustainable practice than refrigeration, which requires high amounts of electricity. I argue in this section that migrants’ bodily capacities to smoke meat are reduced when moving from the subsistence-oriented working arrangements that are dominant in PNG, especially in rural areas, to the capitalist economic systems of Australia and Aotearoa New Zealand. The fluid attributes of the preservation assemblage in PNG are stabilised by a combination of legislative, material, cultural and social structures and embodied, emotional, affectual and discursive forces that do not exist in the same way in Australia and Aotearoa New Zealand. In moving between countries, the dynamics between the elements of the preservation assemblage were transformed in processes of inclusion and exclusion that produced different subject positions, understandings of urban and rural, and performances of power. The exclusion of smoke from kitchens in the migration context may be conceived as the result of the interplay between material and expressive forces that reduce people’s bodily capacities to smoke meat. This results in a sense of ‘wrongness’ that positions smoke as something that is simply ‘out of place’. As a result, smoked meat becomes an impossibility, or even undesirable, for many PNG migrants.
In PNG, five participants engaged in smoking meat in their home villages. Accordingly, it is my argument that people stop smoking meat because shifting from primarily communal subsistence-oriented working arrangements of place to a capitalist economic system makes possible certain migrant subjectivities for which smoke becomes obsolete. I argue that this shift is also an embodied one. For example, some participants observed that the *haus kuk* was a smoky environment that evoked bodily sensations of discomfort. In comparison, the western kitchen assemblage evoked feelings of comfort when understood as both sterile and sanitised. Furthermore, thinking through an alimentary assemblage, not all participants particularly liked the taste of smoked foods.

Smoke as a meat preservation method is a phenomenon that is rarely addressed in the geographical literature, particularly within the Pacific context, and referring to PNG in particular. What little does exist derives mostly from the work of anthropologists and highlights the cultural significance of smoke for certain PNG lain (tribes, or clans). How smoked meats constitute personal and community relationships has been discussed by several authors with a focus in particular on the kaluli people of the Southern Highlands Province (Gewertz & Errington 2010; Schieffelin 1976). Schieffelin (1976), for example, discussed how smoked meat is integral to the social relationships of newly married couples of the lain. He observed that fresh (not smoked) meat for the kaluli lain was taboo for men once they married and for women because they menstruated. However, married couples were permitted to eat smoked meat. These taboos shape social relationships in profound ways, as smoked meats cannot be prepared for one’s own use and must be gifted from the bride’s relatives, which discourages engagements in older relationships while promoting new ones. Gewertz and Errington (2010) focused on the ways in which smoked meats are integral to how the principles of reciprocity and collectivity – considered foundational to PNG’s socio-cultural and economic structures – are performed in the kaluli lain. Smoked meat made possible the navigation of relationships and alliances with kin and neighbours and played an important role in the sharing and gifting economies. Outside of these examples, little, if any, work on smoked meat appears to have emerged in social science research.

Furthermore, little academic engagement with smoked meat in the current economic or environmental context is evident, despite the fact that it presents an alternative to
resource-intensive food preservation practices such as refrigeration. As PNG and other nations in the Pacific expand their economic relationships with other powers (such as China, Australia, and Aotearoa New Zealand), people’s access to food and, in turn, their diets are undergoing significant changes. While this shifting socio-economic landscape has been of interest to some researchers, such as Gewertz and Errington (2010), smoke as a preservation assemblage does not appear to be part of the conversation despite the fact that fridges, freezers, and fridge-freezers are becoming more accessible, resulting in the changing role of smoked meat in some PNG villagers’ everyday lives.

Smoked meat in the literature outside of the Pacific context is also the focus of a small body of work, and a phenomenon that is rarely addressed. What does exist tends to be positioned within a scientific, rationalist framework that seeks to either explore the health risks of eating smoked meat (Ledesma, Rendueles & Diaz 2014; Sebastian et al. 2005) or examine the impact of the practice on pollution (Chen et al. 2017). This constitutes a significant gap in the academic literature more generally, not just in the geographic field or Pacific context.

6.4.1 Smoke and the Student Subject

Smoke did not ‘fit into’ the everyday lived subjectivities of the participants who smoked meat in PNG and became university students in Australia or Aotearoa New Zealand. The temporalities of smoke, in particular, were identified as the main reason for leaving the practice in PNG and choosing not to integrate it into people’s food routines post-migration. It is the absence of smoke that helps in part to enable the student subject to be realised.

Meat smoking is a labour – and time-intensive enterprise that is difficult to fit around student timetables and study commitments, rendering it an impossible practice for many PNG students. While the act of smoking itself can last for several hours, much work and time must be invested before the moment the meat even enters the process. In particular, the building of the fire was cited by participants as a considerable investment of time, resources, and effort that didn’t seem ‘worth it’, even for those who were not students, such as Martha, who is a stay-at-home child-carer:
Martha: So, we make the fire inside and, you know, so make, waste a lot of time. But, yeah.

Rebecca: It takes a long time to make the fire. And you have to do it from scratch.

Martha: Mmm [affirmative].

Making a fire for smoking is here positioned as an activity that transforms the potentiality and value of time into waste. The implication is that the time invested in fire making could be better directed to other pursuits and there is a sense of frustration lingering beneath Martha’s words. It is suggested that the removal of meat smoking as a practice – and of smoke as preservation technique – from the kitchen territory makes space for other performances of identity to be undertaken.

Joyce, a post-graduate student in Wollongong, Australia, spoke of how her study commitments meant that smoke was not a workable means of preserving or preparing meat because of its time intensive qualities, particularly when other less temporally demanding ways of preserving or cooking were available in the Australian kitchen:

Rebecca: Smoking meat, like you said, is time intensive [and] it requires fire. You can’t really do that in a unit [apartment in Australia].

Joyce: No, no. Can’t do that because, um [laughter] we don’t make fires, like, you know, freely – oh, I can just put it in the oven and just dry it or something like that but why should I like waste my time to do that? If I want to eat it I just, you know, just put it in the oven straight, just like right now, and just have it instead of [laughter] preserving ... Yeah, so I wouldn’t be really thinking, really worried about smoking stuff because I’ve got these assignments to do [laughter].

Joyce’s comments illustrate well how discourses about time and experiences of temporality are important elements of the kitchen assemblage, interwoven into how people think about and perform mundane food practices, including those related to
preservation. Preserving meat through smoke is here positioned as being an ‘unproductive’ use of time - a “waste”, useless. It is time that could be better invested into activities that are ‘productive’, such as studying or working on university assignments. Thus, time is positioned as a commodity in capitalist societies (Wajcman 2015) that can, like food, become waste if not allocated to activities deemed to be useful.

In the capitalist economic and social systems predominant in Minority World countries such as Australia and Aotearoa New Zealand (and increasingly present in the Global South such as PNG), time is often conflated with productivity and profit (see Wajcman 2015). The capitalist regime, increasingly automated, digitised, and ‘machinised’, has resulted in a “perception of everyday life as ‘time squeezed’ and ‘harried’” (Wajcman 2015, p. 6). It is in this context that the nine to five working day exists, a result of the industrial revolution, and food is often temporally organised to fit this schedule, with breakfast, lunch and dinner temporally situated around the ‘typical’ working hours. For many of the migrants, the ability to perform their identity as successful students requires ascribing to the capitalist provisions of time that are embedded in Australia and Aotearoa New Zealand’s educational system (though the nine-to-five working day is not always reflected in the student lifestyle). As a result, the preservation assemblage is no longer able to support meat smoking, which needs significant time investment.

While some participants’ lives were already embedded in a capitalist system in PNG (particularly those who lived in Port Moresby), many came originally from villages remote from cities for which subsistence living was the rule. In these communities, a different understanding and experience of time was often the norm. In one of my conversations with Martha, for example, we spoke about how the “Australian way” of doing food work revolves around the three meals of breakfast (morning), lunch (midday), and dinner (evening), each of which is situated temporally within the working day. For Martha, structured clock time is a less important factor of food work in the routines that comprise the food territory of her PNG village than it is in Australia: “In my village, we don’t manage the time. If we feel hungry then we just go and eat whatever we eat”. Smoke and its associated labour are therefore in PNG not often framed in terms of time, timeliness or productivity, a finding that correlates with the
observations that Wajcman (2015) made in PNG when she encountered local women milking livestock. Wajcman’s suggestions to increase time efficiency and productivity of the activity were rebuffed as, in the local context, food preparation activities were not measured in terms of time allocation. The rural was constituted by embodied temporalities that made smoke possible, rather than by ‘modern’ understandings of temporality that relied on measurable units of time.

It may be argued, then, that in realising their student subjectivities, migrants become embedded in capitalist arrangements of time that rendered smoke for preservation unachievable, a marked shift from how time and food were experienced and felt in a subsistence context. Smoke may put the student subject at risk by ‘eating into’ time allocated to ‘productive’ activity (studying, attending classes and so on). Labour and time-intensive methods of preservation in the post-migration, western context are thus positioned as inconvenient, a ‘waste of time’ and no longer performed.

6.4.2 The Materials and Skills to Make Smoke

The material layouts of food work places in both PNG and Australia and Aotearoa New Zealand greatly affect whether participants are able to smoke meat, or not. There are considerable differences in how cooking places are organised not only between PNG and the countries of settlement, but also how participants distinguished between rural and urban PNG.

The material layout that made possible the regular smoking of meat for several reasons also helped stabilise understandings of rural living. The first is that the haus kuk often contains one or more fires which are used for everyday cooking, as Martha pointed out when we spoke about cooking and kitchen infrastructures in PNG beyond cities:

Rebecca: So, you have to build the fire?

Martha: Yeah, first we go and collect the firewood ... Near forest and bring them at home then, uh, we put all of the big one, then we break it with the axe. And then we put it inside [the haus kuk] and wood pile, light up.
Smoke in this context does not require the extra labour that would otherwise be needed to source firewood and build a fire. This food preservation technique makes use of the smoky materiality of a fire that is already present so that it does a ‘double duty’; smoking meat is therefore fairly convenient. Even if a fire isn’t already burning, Joyce points out the ease of finding materials to build one for those dwellings that are within, or in close proximity to, forests. In PNG, the foraging of wood and kindling is positioned as a part of everyday, mundane practice:

*Joyce:* *If it was PNG probably then I go look for firewood under those trees* [points at trees outside the window], *come in and then just make a small fire outside. But here, nah* [laughter].

*Rebecca:* *You’d get in trouble.*

*Joyce:* [laughter]

In Australia, where Joyce now lives, the situation is quite different. Ovens replace fires in indoor cooking spaces, the latter of which would be considered too dangerous, smoky and/or laborious to have indoors. Most participants lived in apartments with limited or no outdoor areas where building a fire might be possible and even if they did, Joyce, for example, doubted that her landlord would be happy for her to build fires on the lawn. Furthermore, access to fire-building materials was deemed too expensive and Joyce pointed out that, unlike in PNG, “here [Australia] you wouldn’t just go out there, get stuff and start making fire”. Social norms around accepted behaviours, including foraging for fire materials are very different between PNG and Australia. In part, these social norms, alongside legislated procedures, shape whether building fires for smoking is accepted or common practice. Fire for smoking is a material item that, in its absence, was positioned as making smoke impossible for her in the Australian kitchen assemblage.

The materiality of smoke – how it is viscerally felt by and experienced through the body by way of coughing, pungent smells, stinging and watering eyes, and so on - is another component of the preservation assemblage that makes the smoking of meat possible in PNG but impossible in Australia and Aotearoa New Zealand. The material layout of the
**haus kuk** in PNG villages was external to the house. Smoke was contained by the building so that it did not seep into people’s sleeping and living quarters. Furthermore, smoke was more or less a permanent feature of the **haus kuk** because it was a necessary by-product of the use of fires for cooking (as discussed above). Martha (an 18-year-old woman who filled the role of child-carer and housekeeper for her sister, who was studying in Australia), explains that smoke is one of the main points of difference between her **haus kuk** in her PNG village and her kitchen in Wollongong:

**Martha:** ...inside [the **haus kuk**] we make the fire ... It’s a big difference [from Australia] [laughter]. Smoke on the firewood inside there.

**Rebecca:** Oh yeah. Is there a hole in the roof for it to go up?

**Martha:** No, there is no hole there, but they make the fire in there, so [laughter].

**Rebecca:** So, there’s lots of smoke inside.

From her comments, it is apparent that in PNG, smoke is an accepted part of mundane food practice. It lingers in the cooking space, because there is little ventilation for it to escape. And yet, despite this, people still lived in and around the smoke, with Martha mentioning that her brother and some others “are still there living [in] that kind of houses [wooden houses with external **haus kuku**s] with the smoke inside there”. The materiality of smoke was an accepted part of everyday living, despite the smells.

Martha notes that in Australia, things are very different. There is no smoke in kitchens, which have ovens and stovetops for cooking. When smoke does become present in the kitchen assemblage, it is managed and regulated as a risk or hazard. Smoke is commonly positioned as being matter out of place in a western kitchen (Douglas 1966). The smell is unpleasant, and it can set off fire alarms, which can be inconvenient and sometimes difficult to silence. Furthermore, as kitchens are interior to the home and connected to other living spaces, the smell of smoke can permeate through to bedrooms, bathrooms, and so on. Therefore, the bodily capacity of participants to smoke meat was
reduced and they did not enact this practice in Australia or Aotearoa New Zealand. However, they did not appear to miss these unpleasant affects engendered by smoke.

6.4.3 Smoking and the Tenant Subject

For many migrants, relocating to Australia and/or Aotearoa New Zealand involves a change of land or housing occupancy status, a shift that results in changes to the preservation assemblage that prevents smoking meat. Most migrants came from a context of land ownership in PNG but were renters in Australia or Aotearoa New Zealand. This new subject position was accompanied by a range of responsibilities, performativities of power, and material embodiments that configured the urban apartment and reshaped the preservation assemblage in profound ways, including the territorialisation of a kitchen.

In order to understand the implications for meat smoking that a change in land occupancy status may cause, it is important to discuss how land tenure in PNG is shaped by very different cultural protocols from those in the western capitalist context, where the ability to own land is becoming increasingly difficult. In PNG, land is framed as being at the centre of life (Fridriksson 2016). It is from the land that wealth and prosperity are derived, so it is associated with economic security and power. At the same time, land is intertwined with the spiritual, because it is to the land that the dead are returned; ancestral remains are buried, and thus land is considered to be the home of the spirits. Land ownership, then, is closely tied to notions of family, history, spirituality and security. Furthermore, how land ownership is distributed is closely tied to the collectivist subject and reciprocal cultural protocols that shape much of everyday life for Papua New Guineans across the country’s many *lain* and cultures. Typically, land, *lain* and the individual are mutually constituted. One cannot exist without the others. The collective subject in the context of land ownership is ratified by the state, which does not acknowledge individual land ownership (as is the norm in Australia and Aotearoa New Zealand). Rather, the government supports only two types of landowners: customary landowners and the state itself (Fridriksson 2016). The former accounts for 97% of PNG land, most of which is collectively owned by those who live upon it. Although some participants lived in rental accommodation in Port Moresby, they often owned – or their families owned – land in their home villages. Connolly, for
example, spoke of the land his family owned in Bougainville, where matrilineal inheritance of land and resources are the norm.

Transitioning to a rental housing system (usually in apartments or units) presented some migrants with challenges to making smoked meat that rendered it inconvenient and/or or undesirable in Australia and Aotearoa New Zealand. One of these challenges is the building of a fire, which becomes impossible in a rental apartment. The absence in the kitchen assemblage of a fire for cooking and smoking is both shaped by, and shaping, migrants becoming the renter or tenant subject. For example, Marina, who lives in a university flat with three other people, spoke of the difficulties of performing food preparation practices from PNG in a rental unit in Hamilton, Aotearoa New Zealand, including the building of fires for smoke:

*Marina:* Like back home you can cook over the open fire and then you can cook in the earth ovens, and then you use stones to cook with as well. Like, you heat stones over the open fire and then you, you cook with it. Um, whereas here I - you're not able to do that. Like, you can’t go and just start a fire outside [laughter] … You, sure, you get up into trouble. You can’t even dig the earth up and try to, like, make an earth oven. It just won’t, it’s just not right. Yeah.

Marina’s unit stands alone and backs onto an expanse of grass and shares common space with other units such as pathways, gardens, and fields. She makes it clear that she does not feel comfortable using this outdoor common property to build a fire for smoke (or earth oven for cooking). In stating that it is “just not right”, she indicates that she feels an innate sense of wrongness about performing these practices in Aotearoa New Zealand (ironically, barbeques are commonly used by Australians and New Zealanders for cooking, but not for preservation and using an earth oven is similar to the hāngi, the traditional mode of cooking for Māori: the provision of a hāngi pit would be a valuable asset for student accommodation in Aotearoa New Zealand); smoke in outdoor rental spaces is implied here to cause feelings of unease and discomfort. There is a disconnect between food culture and place; what would have felt ‘right’ and appropriate as part of everyday life that constitutes subsistence living in rural Papua New Guinea no longer
feels so in the post-migration suburban landscape. As Ahmed (2004) points out, emotions and affects shape people’s bodily capacities to act, and can push people towards or away from certain practices; the unease of Marina’s emotional geographies dissuade her from smoking meat.

Marina’s example highlights that there are certain procedural rules about fires on or in rental spaces in Aotearoa New Zealand that must be followed in order for her to maintain her subject position as a ‘good tenant’. This is illustrated by the suggestion that she will “get up into trouble” with her landlord (the university accommodation office) if she should flout them. The sense of wrongness that she feels about building a fire, and her desire to avoid ‘getting into trouble’ suggests that smoke could pose a threat to the ‘good tenant’ subjectivity that she inhabits in Hamilton. Her laughter when she says that “you can’t go and just start a fire outside” implies that to do so would be outside of the realm of possibility in a rental context.

This subject position of the ‘good tenant’ brings to the fore issues of power and privilege relating to land occupancy. PNG’s customary landowners are communities and families (often, the two are conflated) who manage space according to longstanding practices of land management (often subsistence) that accommodate smoke for preservation. Marina’s comments imply that the rental system that migrants become embedded in in Australia and/or Aotearoa New Zealand situates much of the decision-making power of the apartment managers, landowner or landlord. Joyce, who said that if she chose to build a fire for smoked meat in her unit, her “landlord probably won’t like it”, illustrates how decisions about whether to smoke meat or not must take into consideration the, often unspoken, rules about behaviour in rental apartments that might anger or upset her landlord. It may perhaps be argued that there is too much at risk to try to create smoke in rental accommodation – the renter subject, framed as a respectful neighbour and good tenant – could be threatened by smoke. Therefore, meat smoking ceases when migrants participate in the Australian or Aotearoa New Zealand rental system of land occupation. In addition, in Australia, rental regulations and state legislation (Clean Air Regulations) bars smoke itself in the outdoors. Therefore, any form of preservation of food by smoke would be felt not only as out of place but inappropriate and proscribed.
6.4.4 Smoke and the Migrant Subject

The connections between food and the migrant subject have been well documented in the literature, with most social scientists concluding that food is a vehicle through which migrants can make and remake a sense of home and belonging in an unfamiliar cultural landscape through the affective and emotional dimensions of taste. Philipp and Ho (2010) examined how South African migrants in Hamilton, Aotearoa New Zealand struggled to recreate ‘home’ through preparing familiar foods, which served to highlight the distance geographically, temporally, and emotionally between the country of destination and the place that they had left behind. However, when that struggle is overcome and the opportunity to eat South African foods with other South Africans arises, memories of home are evoked through the senses and bodily engagements with time and space. Johnston and Longhurst (2012), in their work with migrant women also in Hamilton, found that food was a material through which migrants forged connections with other migrants in their ‘new homes’ and it was through smell and taste that they were able to reconnect to memories and feelings associated with their country of origin. Hage (1997), in his research with Lebanese migrants in Sydney, found that food and its strong connections to memory were some of the building blocks of new migrant identities and the making of home.

A common thread throughout this body of research is the idea that familiar foods from ‘back home’ are integral through their presence – sometimes adapted to ‘fit into’ the way of life in the country of settlement – to how migrants reconstitute home, community, family, and identity. Such foods fulfil a longing for their ‘old home’, a feeling that something is missing or absent. Their exclusion from the working order of the alimentary assemblage creates affectual responses of yearning and desire for the familiar. The inclusion of these foods in the working order of the alimentary assemblage, however difficult it might be to achieve, makes possible the migrant subject by forging connections between the past and the present, here and there, and the familiar and the new, reshaping spaces and their engagements with the assemblage to reflect this.

However, it appears that in the case of smoke to preserve meat, this is not necessarily the case. Of the five participants I spoke to who smoked meat in PNG, none did so in
Australia or Aotearoa New Zealand. It became apparent that the taste and smells of smoked meats did not fulfil people’s feelings of longing for home, as indicated in the literature. Instead, for Joyce, it is the taste of smoke that evokes disgust and reduces her body’s capacity to engage in meat smoking in Wollongong, where alternative ways of storing, preparing, and consuming meat are readily accessible. Joyce states that fresh meat is preferred over smoked for this reason:

**Joyce:** I prefer fresh meat ... I think it’s because of the taste. It’s, how do I say, hmmm. Yeah, how does it taste? ... Like with the smoked, smoked meat sometimes it tastes a bit funny because of the smoke ... smoky taste [grimacing].

The visceral experience of eating smoked meats is for Joyce unpleasant, a “funny” taste that pushes her toward fresh meat preserved by a fridge-freezer. The sensorial engagements that migrants have with food have been argued to offer opportunities to forge connections between the ‘old’ home (PNG) and ‘new’ home (Australia/Aotearoa New Zealand). However, Joyce’s comments illustrate how it is important not to essentialise the affective responses that migrants have to foods from home as all being forms of nostalgia; some foods instead evoke unpleasant memories that reduce a body’s capacity to pursue familiar food or food preservation practices from their country of departure. This is a timely reminder that not all migrants are the same.

### 6.5 Fridges, Freshness and The Kitchen Assemblage

Unlike the practice of smoking meat, which ceased upon people’s relocation to Australia and Aotearoa New Zealand, fridge use continued (it is important here to note that many participants didn’t have separate fridges and freezers; rather, they had a combined fridge-freezer and in our discussions rarely distinguished between the two). However, the ways in which fridges were incorporated into the everyday working arrangements of the preservation assemblage in the migration context was significantly different from how they were in PNG. This change, I argue, is the result of the changing interrelations between the expressive forces (use-by labels, visceral, emotional, and affectual experience) and content forces (electricity infrastructure, cultures of sharing)
within the preservation assemblage that transform the ways in which fridges (re)shape migrant subjectivities and bodily capacities.

In the pursuit of healthy food, the fridge is key as it prolongs freshness for the delayed consumption of food. As a result, the technologies, practices, and processes that the fridge enables have become integral to how people imagine the contemporary kitchen and notions of modernity, capitalism, and consumption in general. By design, fridges are intended to keep food edible for longer periods of time than would otherwise be possible through a process of cooling and chilling. However, this comes at a significant environmental cost. Early refrigerators used synthetic chlorofluorocarbon (CFC) refrigerants that are widely acknowledged today to be major contributors to the depletion of the ozone layer (Gibson et al. 2013). While CFCs have now been replaced almost entirely by hydrofluorocarbons (HFCs) refrigerants in order to mitigate ozone depletion, fridges are still highly environmentally unsustainable as HFCs are potentially very damaging contributors to global warming and climate change. Furthermore, refrigerators consume large amounts of electricity as they are, in most cases, in constant operation – approximately 13.4 percent of an Australian household’s total power usage can be attributed to fridges (Gibson et al. 2013). Framing freshness as a product of the fridge, and thus perpetuating its perceived necessity in how food is managed and stored, encourages continued and unsustainably high outputs of household carbon dioxide emissions. Therefore, it is important to rethink what freshness is, acknowledge that it is a relationally constructed concept (Jackson et al. 2018), and examine how the refrigerator helps to sustain ideas about the modern kitchen. It is important to bring PNG and other ethnic minority migrants from the Global South into this conversation, as refrigerators are not necessarily a key component of the preservation assemblage in the pre-migration context and therefore shape differently how kitchens, the urban and the rural, and subjectivities are constituted ‘back home’.

Interestingly, the use of the refrigerator in the ‘quest for fresh’ presents something of a paradox. Fresh foods are coded by dominant discourse to be ‘natural’ and ‘pure’, an image that feeds into the narrative that fresh food is healthy food (Friedberg 2009). However, the purpose of the fridge is to extend the edibility of food beyond what is biologically possible – thus it alters food from its ‘natural’ state. And yet, such food is
still framed by many consumers as being ‘fresh’. This contradiction problematises the positioning of fridges as agents of freshness, and this is further evidenced by arguments that they “very often operate as coffins of decay” (Evans 2012a, p. 1132) where food is left to rot and decompose (Waitt & Philips 2016). In indoctrinating households into the narrative that fridges are key to fresh food and healthy eating, the pursuit of freshness may in fact encourage, rather than prevent or forestall, the wastage of food that was once edible. Despite the idea that fridges prolong freshness and thus ostensibly prevent waste, it has been found that it is ‘fresh’ vegetables and fruit that constitute the bulk of food that becomes waste (Kaipia, Dukovska-Popovska & Loikkanen 2013).

This section builds on existing work that has examined the role of the fridge as an item of technology central to the transformation of food preservation practices. Many authors have highlighted how the refrigerator’s increasingly mandated presence in the kitchen has transformed the ways in which people connect with each other and with place (Friedberg 2009; Waitt & Philips 2016). Friedberg (2009), for example, in her discussions about the contested concept of ‘freshness’, argued that the fridge’s transformative presence in the modern idealised western kitchen has resulted in a reconfiguration of the kitchen territory and a reframing of what the concept of ‘fresh’ really means as it pertains to foodstuffs. Furthermore, she positioned the refrigerator as a non-human agent that has the potential to shrink time and space through making possible the consumption of perishable foods out of season and from exotic, far-away locales. Friedberg’s work illustrates how fridges, and how they are used, are often shaped by consumerist, capitalist imperatives valuing mass consumption, ease of access to goods, and consumer choice. Waitt and Philips (2016) examined through a visceral and embodied politics the ways in which refrigerators are embedded in the food waste cycle and play an important role in how people categorise certain items as being waste, and Evans (2014) argued that refrigerators open a ‘gap in disposal’, in which foods could be placed supposedly for future use but end up decaying and becoming waste.

While the literature is increasingly looking to examine the role of refrigerators in everyday embodied experience and the implications of this for food waste and household sustainability, this work does not address the experiences or knowledges of diverse ethnic communities, and Pacific peoples, including those from PNG, are rarely a
part of this conversation. Here, I address this gap by discussing how the fridge’s presence (or absence) in the preservation assemblage makes possible a range of lived identities and subjectivities for PNG migrants as they move between different cultural contexts.

6.5.1 Fridges and Home Villages: Benevolent and Entrepreneurial Subjectivities

In many parts of regional PNG, participants suggest that fridges are a rarity. They are expensive, out of the financial reach of many Papua New Guineans who dwell far away from urban economic centres and rely on subsistence farming. The remoteness of many PNG villages from centralised electricity utilities and urban centres means that it is difficult, if not impossible, to bring a fridge to these locations for a variety of reasons, including distance, lack of suitable transport infrastructure, difficult and/or mountainous terrain, or, in most cases, a mix of at least two of these three reasons. Port Moresby, the largest city in the country, is not connected by road to any other large-scale urban centre except for Kerema, in the Gulf province. The provinces of Hela and Enga, located in the Highlands Region and the homes of Lakari and Martha respectively, are located in largely mountainous, high-altitude areas (hence the Highlands appellation given to the region in general). Many villages in these provinces are accessible only by light aircraft or by foot. Thus, everyday food practices in these places are not centred around the prolonging of freshness that fridges make possible, but around other methods of preservation and food provisioning. Furthermore, in part by virtue of their remoteness, villages can be very far from essential infrastructure that make access to a steady electricity supply possible. For these communities, the dominant meat storage and preservation is smoking. In Australia, however, the fridge remains key to how food is stored to ensure that its freshness and edibility is prolonged. Most participants mentioned this as a main difference in their food preservation practices when they relocated to Australia. The absence or limited availability of fridges is part of what constitutes rurality in PNG.

Jessica, who comes from Hela province, identifies that because of intermittent and unreliable electricity supply from the grid, the fridge is a superfluous device. It is not very helpful for storing food in her husband’s home village of Yambaraka (which both she and her husband consider home when not living in Port Moresby):
Jessica: It’s no good keeping fridge in the house. Like, I say the difference is in here [Australia] the power is, electricity is continuously flowing, and in our country sometimes it can go on and off, and then you know when it goes on and off our fridge gets ... it’s not working well. And then it’s like a waste of money.

Rebecca: Because the food goes bad?

Jessica: Yeah. The fridge goes like on and off, on and off. That’s why electricity is not really good in the rural areas.

Rebecca: So would you put things like meat into the freezer in the rural areas?

Jessica: Well, um, they don’t really need fridges because that place is cold. The meat can last. Outside the meat can stay.

Jessica’s comments confirm that objects and infrastructure “share with people a corporeal presence in the world; they have agency” (Pishief 2017, p. 133). Jessica indicates that the material, more-than-human agency of electricity (including its absence) is an important part of the kitchen territory in her husband’s home village and a main reason why fridges are excluded from it. In a similar manner, the more-than-human agency of climate plays a role in preservation as the cold temperatures of the highlands make it possible to keep meat fresh for longer without needing a fridge or electricity.

While there have been calls for the materialisms of food to be further analysed (see Goodman 2016), comparatively little attention has been made to critically engage with the materialisms of the tools or physical infrastructures by which food work is undertaken. And yet, it is clear, that fridges and electricity infrastructure have their own agency that shapes how kitchen assemblages do or do not make possible the preservation of food for delayed consumption. This is particularly evident in PNG, where the agency of electricity helps renders certain places to be rural through the reticulated electricity supply, if available, being intermittent, turning on and off, on and off. In turn, this makes the fridge a device of little use for food storage and
preservation. Power cuts can last for days and are unpredictable both in terms of when they will occur and in terms of when they will be fixed. There is a sense of frustration in Jessica’s words that the electricity, and therefore the fridge itself, cannot be counted upon to keep food cold and fresh for longer than would otherwise be possible. Her frustration stems, it is suggested, from the economic, social and cultural costs of wasting food.

As PNG, strengthens its economic and political relationships with other nations, people have increased access to renewable, off-grid electricity supplies by way of solar panels and generators. These are becoming more common. While we were talking about fridges in rural PNG, Joyce mentioned that she’d noticed, in the past five to seven years, that many people in villages have been able to purchase solar panels that come from Indonesia at costs that are within reach for PNG villagers who, in Joyce’s words, “work hard and save well”. The increase in solar panels is apparently a relatively new phenomenon in the PNG village preservation assemblage, and Joyce couldn’t remember seeing them before approximately 2012. Some people had access to generators as well, though this was less common. The advantages of solar panels over the state-funded grid were, according to Joyce, reliability and cost. Thus, solar power overcomes two of the primary reasons why mains electricity makes fridges an untenable option for many Papua New Guineans living beyond metropolitan centres. These solar panels make it possible for the kitchen assemblage in PNG to include a fridge, particularly, as Joyce mentions, in areas of PNG that are close to highways and urban centres.

This introduction of new content forces to the preservation assemblage has enabled new subject positions for some PNG families, including that of the entrepreneur and salesperson. In making fridges viable in the rural PNG preservation assemblage, solar panels also make possible cash income for some Papua New Guineans. Joyce mentioned that it wasn’t uncommon for Papua New Guineans who had a fridge to use its capacity for chilling and keeping food fresh to sell goods that those without easy access to a fridge would not be otherwise able to obtain:

*Joyce: When I’m travelling up the highway to Maprik, that’s a town up there we go to teach the flexible, um, flexible courses from Divine*
Word, um, Saint Benedict’s, um, when we travel up we see people with eskies with cold water they’re selling them, yeah, along the highway … From the fridge, but they put them, they take them out in the esky.

Joyce and her family have used fridges and freezers to supplement their incomes:

Joyce: In my case and my husband we both bought our own freezer. And we used to block, put ice blocks and stuff. There’s a lady who helps us to sell the ice blocks, yeah. Then we have a - my mum also has hers, but she sent it to my cousin who lives up out in the remote, yeah, where my dad comes from, along the Sepik river, so he’s got that freezer there. That’s, um, she told him to sell drinks and maybe make ice blocks as well because people you know they don’t have stuff out there, so, yeah, it’s a way of making money … and when they get fish too, my mum told him put the fish in the freezer and then later put them into an esky, bring them down to town so, yeah, we can sell them there as well.

Freshness and the capacity to cool, then, were positioned as commodities to be sold. While fridges were increasingly becoming part of rural PNG communities, they were still uncommon enough that a business could be created around their presence. Fridge/freezers made possible an overlap between the commercial and domestic spheres, which as in many places are not always easily separated. For example, Gibson-Graham (2006) point to this overlap between the domestic and commercial spheres especially in countries where ‘alternative’ economies play an important role in everyday life.

6.5.2 Fridges and Port Moresby: Shared Households

Food, and sharing it, is well documented in the literature as central to how many Pacific peoples (including those from PNG) forge and maintain social relationships and a sense of community (Thomas 1991; Schieffelin 2005; Whitehead 2000). Reciprocity is an important part of how social relationships, community structures, and economy are shaped, and food is a vital component of this arrangement. Because food is distributed
among large family and social groups in PNG, there is little need to store leftovers or excess. In PNG, cultures of sharing and reciprocity extend to the fridge itself and its material reality. As Martha mentioned, in many PNG villages, if there is a fridge present it is usually shared among the households that comprise the community. A personal fridge for the immediate family unit alone was uncommon, as is the norm in Australia and Aotearoa New Zealand.

For Lakari, sharing a fridge with multiple families in PNG was fraught with frustration for several reasons. While Lakari’s home village is in the Northern Highlands province he has lived most recently in Port Moresby, in a building that housed several families and contained only one communal fridge to be shared among them. The fridge in this situation became a site of complex negotiations of social and spatial organisation:

**Lakari:** ... we don’t even like storing food in a combined fridge ... Like some people, they don’t eat the type of food you eat ... What I mean is, ah, you know, we come from my contemporary society where people have - a bigger part of the population is lower income than us, and if you put the chicken packet in there, or if you put your, your meat pack [pause] you know, they get offended. Ah, he’s eating a lot of ah frozen food and we’re eating a lot of tinned fish, you know.

**Rebecca:** Oh, okay. So it’s more about, um, is it more about the, like social relationship not wanting to show off. Is that it?

**Lakari:** Yep. In some instance can be show off like that. I don’t intend to be thinking me, like showing off or - other times it’s like, ah, um [pause] it’s good to be like everybody, you know. Where you are, where you are you want to be like everybody and not to make yourself feel different or look different ... in terms of what you are eating, eating is very important for everybody so it’s good to be seen as you are eating like everybody eats. To be seen like, I mean for you to be seen like, ah, everybody. You’re eating to be seen like everybody eats. It’s more better than to be seen like, they’re eating low level food and you’re eating high level food and those kind of things.
Ice creams and other luxuries were not to be stored in fridges because, for Lakari, that would be ‘showing off wealth’ to others who perhaps were not in a position to afford the same. Choices, then, about what foods were suitable for fridge storage were, in Lakari’s case, motivated more by his desire to conform and to be “seen like, ah, everybody” than by a need to prolong freshness, at least in some cases. As a result, he would store less food in the fridge that he had access to in PNG than he did in his home in Australia, where he had one fridge for his household alone. In Australia, he can store as much food as his fridge can hold without fear of judgement.

This careful use of fridges and desire ‘not to stick out’ meant that Lakari’s use of the refrigerator changed, as did what he stored inside of it. When I asked him if living in shared housing with a communal fridge changed what he would eat, or how he would store it, he said the following:

**Rebecca:** ... So, would living in a mixed place like that change the kind of food that you would eat? Or you would just store it somewhere else?

**Lakari:** No, we will buy for the evening, straight from the [shop].

**Rebecca:** Oh, so you would eat it straight away and you wouldn’t store it anywhere.

**Lakari:** Straight away. Nah, no need to store it. We get [pause] yeah, we get straight from the supermarket, bring it, and then just cook straight there.

How communal living rendered the fridge public didn’t drive Lakari and his family to pursue alternative methods of storing food, or alternative methods of preservation. Instead, they altered the amount of food purchased per day, and the frequency of purchase. In doing so, they ensured that no food became excess and thus needed to be put into the fridge to prolong freshness for future consumption. His and his family’s emotions of humility, humbleness and not wanting to ‘stick out’ have encouraged them to adapt their practices to accommodate these feelings. Thus, through the lens of the preservation assemblage, the communal fridge may be understood as a potential site
where social difference is felt through stored foods. Accordingly, the preservation assemblage is a more-than-human achievement through which performances of social status, economic prosperity, and neighbourliness are carefully negotiated. For Lakari, these performances are motivated by a desire to remain inconspicuous, to fit in – a lack of desire to stand out and be different.

In Australia and Aotearoa New Zealand, however, the isolation that migrants experience as they settle in can translate into changing fridge practices. Many of the participants I spoke to came to these countries on their own, leaving their families behind while they pursued education or work opportunities. Joyce, for example, spoke of the emotional and affectual forces that shape her fridge use in Australia. For her, the fridge’s presence and its materiality in Australia allows her more space to store perishable food for longer, but in being isolated from family and community, the items that she puts in it rot as the prospect of cooking and eating a meal for one holds little appeal or enjoyment:

*Joyce:* That’s something that I, um, noticed like without my ... kids and my family around, I – I just don’t feel anything. Like, I don’t enjoy my food. Yeah, so I decided, oh, it’s okay, I don’t have to cook anything. Like, I’ll just get just enough or otherwise I just forget about it and then I’m - and then later discover, oh this one has gone bad.

That’s gone bad. Okay, that’s fine.

Here it is clear that losing her close connections with family has directly impacted her relationships with food, and thus also how she stores it. Feelings of longing come to the fore, reducing her bodily capacity to cook and thus purchased food is left to become waste. Her emotional and affectual relations with food are transformed in Australia as she becomes embedded in a cultural context for which sharing, gifting and reciprocity is not central to everyday life and relationships. In such a context, the fridge becomes Evans’ “coffin of decay” (2014, p. 69). Instead, participants become embedded in the neo-capitalist, individualist social arrangements that are the norm (Wajcman 2015) in countries like Australia and Aotearoa New Zealand. This separation from family and disconnection from the cultures of sharing that shaped the preservation assemblage ‘back home’ can evoke feelings of sadness, longing and apathy.
6.5.3 Fridges in Australia and Aotearoa New Zealand: Temporalities of Use-By Labels

The fridge in Australian and New Zealand kitchens brings to the fore a temporal experience of decay/preservation that is framed by the capitalist notion of ‘productive’ time (Wajcman 2015). The application of ‘use-by’ and ‘best-before’ labels commonly featured on many non-produce foodstuffs is one method by which this is achieved. Food labels and ‘use by’ or ‘best before’ dates are often the arbiters of food’s freshness, the means by which people make decisions about what food is edible and what is not, and by extension what may constituted as being waste through disposal into bins (Van Boxstael et al. 2014). Increasingly, policymakers understand these labelling mechanisms as a way to mitigate rising levels of food-waste, through changing current food labelling practices to favour ‘best before’ dates rather than ‘use by’ ones where possible (Thomspson et al. 2018). A number of studies have examined the links between expiry labels and their implications for household food waste (see Broad Leib et al. 2016, van Boxstael et al. 2014, Secondi 2019). That said, some authors (Visschers et al. 2016) claim that there is little evidence to suggest that date labelling has any impact on reducing consumer behaviours that encourage unnecessary food waste. I argue that, for the PNG migrants who I talked with, date labelling does have some impact on people’s decisions to keep food in the fridge or throw it away.

For many participants, ‘use-by’ and ‘best before’ labels were not closely adhered to in Papua New Guinea. This may be because the labelling was done prior to freezing or even before export from Australia, so that most items in supermarkets had exceeded that date. Because of lack of choice people then realised that those best before labels were not really applicable. Thus, best before labels did not seem to evoke the same emotional response as they did in Australia (discussed below). In the context of Papua New Guinea, there certainly seemed to be an absence of horror or concern that items have gone beyond the prescribed date. Take for example Joyce, a post-graduate student in Wollongong in her forties from the East Sepik province in PNG. She tells how a lack of labelling – or a disregard of labelling where it is present – is a key reason why recently frozen meats are more difficult to access ‘back home’ than in Australia:

Joyce: With the, um, protein, I’d say I find them more fresh here [in Australia], especially those frozen ones, get really fresh um meat and
staff here. And I also realised, noticed that, um, they get like, they don’t stay in the freezer for a very long time. They have due dates [in Australia], okay so from here to here and it’s expired. Whereas back at home they can stay in the fridge for as long as they can stay, until whoever comes and buy them. So like they’re not, you know, that really tasty.

Rebecca: You’re like, how long has it been here for? So, the expiration date, because a lot of the food and expiration date [in Australia], then they can’t really sell them. They sell them for super discounted if they can. Does that system not work quite the same in PNG?

Joyce: Doesn’t really. Um, there’s only specials um, whenever like it’s Easter or Christmas, but they don’t like, look at the, you know, freshness of the food and think oh, okay, this one has gone past let us put them on sale so people can buy. They just sell them.

For Joyce, the freshness of foods that require expiry dates (usually perishable foods) is a key consideration of the preservation assemblage in PNG. Economic imperatives appear to be the priority, bringing to the fore the thrifty, or frugal, subject (here, I use both of these terms to refer to restraint in consumption related to financial cost. Please see Evans 2011 for a critical analysis of these terms). However, Joyce notes that a lack of freshness in meat, as indicated by the expiry dates on food in PNG, results in visceral encounters with food that are characterised by poor taste and diminished eating pleasure. As Friedberg (2009) points out, best before labels assume that constantly working refrigerators are part of the kitchen assemblage. However, fridges do not always meet this criterion in PNG. In moving to Australia and Aotearoa New Zealand, and in becoming enmeshed in a preservation assemblage for which the refrigerator is considered vital, the perceived value and importance of best before labels increases.

In Joyce’s case, fridges make possible the experience of the good migrant subject through the temporality of the use-by date. Following expiry or best before dates on
food was a performance of conforming to the cultural norms and expectations of Australia, where the use-by date seems to acquire authority:

**Joyce:** In Australia, I don’t leave it [meat] like... the thing is when I buy my, uh, the meat that I want to eat it’s just for like ... I wouldn’t want to keep it for two weeks cause I know that this meat always being sold in the shops and the due dates are like this, so I just look at the due date and it’s like, yeah, I must follow the rule here when I’m living here, so I should have it before this, the date. So yeah, I don’t leave it that long.

**Rebecca:** Okay, yeah, um, just because, you look at the date but you trust that they’re correct?

**Joyce:** Yeah, so I just said, okay, I have it before that date. And there’s always fresh ones out there that I can go back and buy.

Here, Joyce identifies due dates as part of the ‘rules’ of living in Australia, which through self-governance she must abide by and conform to in order to retain her subject position as a ‘good resident’ of the country. It is apparent that, for Joyce, best before labels can lead to feelings of worry over ‘doing the right thing’ while resident in Australia.

Within the preservation assemblage, the interplay between expressive forces (due dates, notions of convenience and ideas of authority and trust) and content forces (fridges, freezers, and fridge/freezers) makes possible Joyce’s subject position of a ‘good “citizen”’. Due dates are framed as non-human agents of authority that are trusted to be accurate indicators of freshness, edibility, and healthiness. In Australia, this is made possible by a culture of convenience which is predicated on easy and fast access to goods and services. Therefore, foods that become expired are easily repurchased, as Joyce indicates when she speaks of the availability of fresh food in the supermarket that she can access at any time. Becoming a part of the Australian capitalist culture of food consumption has made it possible for Joyce to realise her identity as a ‘good resident’ in Australia, through using best before dates to make decisions about whether food
becomes waste or remains useful. The different responses that some participants had to labelling in PNG and Australia/Aotearoa New Zealand indicate how context and place influence people’s understanding and acceptance of messages embedded in labels. In different contexts the influence of the labels push people either to produce waste, or consume foods that would be otherwise thrown away.

Like Joyce, Jessica points out the use of her fridge in Australia is a central component of food provisioning for her growing, young family. Jessica moved to Wollongong with her three children (all aged under 18 years) to be with her husband, Lakari. Before her arrival in Australia, Lakari had been living alone and therefore was responsible for all the food work in his household. However, when Jessica and his family joined him, the food work tasks were reallocated and Jessica became responsible for this work. As she showed me around her kitchen during the kitchen insight activity, she showed how the fridge was integrated into her daily food routine in such a way that prioritised her children’s needs. For example, the fridge itself was organised so that foods that were deemed appropriate for her young children to consume were placed near the bottom, within their sight and their reach.

From my discussions with some of my participants, it became evident that fridges are closely tied to parenting and make possible performances of care for children and doing family health. An important part of this politics of care around food centres on health and whether food is ‘safe’ for consumption - and particularly for consumption by children. Central to this desire is the concept of freshness. The notion of ‘fresh’ is central to sustaining ideas of both development and modernity, and therefore has become an almost unquestionably positive food quality (Friedberg 2009). This positioning is derived from the assumption that fresh food is ‘healthy food’, providing a wealth of nutrients and vitamins found wanting in processed or packaged foods. Furthermore, this positioning is reinforced by the dominant discourse that fresh food is ‘pure’ or ‘natural’. It may be argued that the health and wellbeing discourse implicit in this understanding of ‘fresh’ drives a politics of care that is embedded in how many people make decisions about what foods are ‘good’ (edible) or should be consigned to the rubbish bin. Concerns that food no longer categorised as fresh may be unhealthy or unsafe to feed to family members, particularly children, were important motivators for
some of the PNG migrants to direct uneaten food to the bin or, as in the case of Jessica (below), to avoid purchase of that food item entirely:

Jessica: When I think my family will enjoy this, then I buy. But if it, if it doesn’t look good to me, from my sight, and feel, that it is not good …

Rebecca: So it’s very important to give healthy good food to your family? Or your children. Yeah. That’s a very important part of the decision -

Jessica: Yes, yes.

Rebecca: Is it for your children’s health?

Jessica: Yes, yes.

From this conversation about the freshness of food and its suitability for purchase, it becomes clear that establishing and maintaining good family health is a key factor in how she categorised food as being either edible or inedible, waste or not. Her embodied knowledges of touch and sight play an important role in how she assesses the healthiness of fresh produce that she is considering purchasing. This is particularly important in the context of notions of freshness as determined by use-by labelling as mothers and fathers negotiate the tensions between embodied knowledges of food decay and time unit measurements of the same process. For Jessica, these food decisions and sensory knowledges are important performances of care and doing family through which she becomes the mother subject. The preservation assemblage thus offers insights into how the fridge shapes the process of motherhood and (un)making family. Central to this process is the touch of food and notions of freshness that are mediated through the fridge and/or freezer. These findings confirm Phillips and Waitt’s (2016) arguments that refrigerators are composed of an assemblage of both material and expressive forces that work together to produce certain felt subjectivities.
6.6 Conclusion

In this chapter, I have discussed how the complex and ever-shifting preservation assemblages in the context of PNG and Australia/Aotearoa New Zealand shaped the lives of migrants both before and after their relocation. I offered the notion of preservation assemblage to argue that smoke and the fridge come-together with other ideas and materials to make possible places, subjectivities and collective identities.

The agency of smoke was integral to shaping not only the design of buildings, but also gendered labour, rituals and taboos. In the context of PNG, smoke was deeply embedded in preservation assemblages that helped to sustain understandings of subsistence agriculture, home villages and temporal experiences aligned more closely to bodies, or those of rituals and ceremonies, including marriage. However, in Australia and Aotearoa New Zealand, smoke was understood as an impossible agent of food preservation. The emotionally embodied spatial practice of smoking was felt as wrong for several reasons including the lack of appropriate space, and tenancy and property arrangements. Alongside the discursive and legal constraints that reconfigured smoke as a risk to be managed, smoked foods were often themselves not a source of visceral pleasure. Moreover, the change in temporal experiences to notions of productive time, often meant that smoking food was narrated as time wasted.

Hence, the fridge was the dominant preservation technology post-migration. Central to making not only kitchens, fridges were key to how families and parenting were configured. Because of this, best before dates appeared to take on heightened significance for PNG migrants. In contrast, in the context of PNG, the fridge is more closely aligned to cities and capitalist economies. Fridges are making possible the emergence of entrepreneurs in part of PNG far from the electricity grid when aligned with solar panels. In cities, the fridge is an integral part of tenant share households. In these contexts, the fridge renders public the very private facts of what people eat. For those who do not wish to display wealth through food purchases, the fridge becomes redundant for certain luxury food items. However, for a number of the participants food left in fridges did decay and become waste.
Food preservation achieves more than slowing processes of decay. As illustrated in this chapter, food preservation helps sustain places, temporal experiences, economies, subjectivities and collectives. Thus, this chapter illustrates that when people may be asked to change their preservation practices to reduce greenhouse gas emissions, there is far more at stake. While people often do their best to consume the food they have, sometimes it is not possible to avoid food waste. In the next chapter, I examine the food disposal assemblage.

In the following chapter, I offer the ‘disposal assemblage’, and the related concept of the refrain, as a way to rethink food waste as relationally constituted. The chapter focuses on how the rhythmic qualities of disposal conduits such as dogs, bins, and compost make and unmake the home territory. Thus, the chapter highlights the role of the non-human in mobilising people’s choices about sustainable domestic food practices.
CHAPTER SEVEN: DOGS, BINS AND GARDENS – THE DISPOSAL ASSEMBLAGE

7.1 Introduction

In this chapter I bring the notion of the disposal assemblage to the fore. I discuss how the disposal assemblage changes as migrants move between PNG and Australia and Aotearoa New Zealand. Insights are offered as to how conduits of disposal for unwanted food change, remain the same or are dropped post-migration. Three avenues of disposal are discussed: (1) dogs; (2) bins, pits and rubbish collection; and, (3) compost and gardens. The chapter moves beyond arguments that focus on representations of waste as a threat to the domestic interior, to think about the rhythms that sustain a sense of comfort and home territories. I discuss how the socio-material arrangements of the disposal assemblage have the potential to make and unmake homes, families and selves.

I first discuss how the presence (or absence) of dogs in the disposal assemblage shapes people’s decisions about where to direct food scraps and leftovers so that they are removed from domestic space. Different canine subject positions come to the fore in the PNG and Australian and Aotearoa New Zealand contexts, that configure dogs as either suitable conduits of food disposal or not. In rural PNG, dogs often were positioned as working animals. As a result, they were placed as existing outside of the family and domestic space and were thus integral to the food disposal assemblage because special pet foods were regarded as frivolous and financially wasteful for working animals that were performing perfunctory actions. By contrast, in the urban contexts of Port-Moresby and Australia / Aotearoa New Zealand, pet dogs were often elevated to occupy a status of ‘personhood’ to whom feeding leftovers and food scraps would be a breach of people’s duty of care. In this situation, food scraps required alternative disposal assemblages that often utilized the bin.

I then move the conversation to focus on bins, pits, and rubbish collection services. Each of these examples illustrate how food waste becomes part of the waste stream – or
not – in both PNG and in Australia and Aotearoa New Zealand. In Australia and Aotearoa New Zealand, bins became the primary method by which food waste was removed from the home because other methods (such as dogs and gardens) were absent from the disposal assemblage. However, for some participants bins presented a subversive force that threatened to destabilise the self as thrifty subject and brought to the fore a sense of disconnect and ‘wrongness’. In PNG, however, the bin was replaced by the pit as the device by which unused food enters the waste stream. Pits, however, were understood to be problematic because they introduced unwanted non-human others that threatened to unmake home by bringing the possibility of infestation and/or disease. Accordingly, the bins and centralised rubbish collection systems of the Minority World, which encourage increased food wastage, were preferred by some participants.

Finally, I turn my attention to gardens, composting, and mulching. Participants identified that an absence of accessible gardens and composting options in Australia / Aotearoa New Zealand meant that the non-wasteful subject that emerged in PNG through such practices, could not be realised. As a result, feelings of disconnection and discomfort came to the fore. By contrast, in the PNG context, composting practices had the potential to achieve more than just food disposal but helped to constitute family and collective identities and relationships.

From these examples, I argue that the choices that people make about how food waste is disposed of – which in some cases may involve repurposing or rematerializing it to be useful in other assemblages – have important implications for how home is made and, perhaps more importantly, unmade. The food disposal assemblage includes a range of non-human agents that can threaten to destabilise the home territory and therefore push people towards, or away from, certain disposal activities. The agency of non-human actors is therefore key to how food waste, or a lack thereof, is achieved.

### 7.2 Participant Portraits

In this chapter, I again refer the experiences of **Jessica (38)**, **Martha (20)** and **Joyce (43)**, (see sections 5.3 and 6.3 for their portraits). I also introduce three new perspectives. **Angela (38)** is a postgraduate student in Hamilton and came to New
Zealand to advance her studies in education. A tertiary teacher in PNG, Angela comes from a coastal area in the West Sepik province which she describes as remote and underdeveloped. In PNG, she lived with her three sons and sometimes her parents but has migrated to New Zealand alone. In Hamilton, she lives with three other flatmates from a range of ethnic backgrounds in a semi-detached house.

**Larissa (16),** is Lakari and Jessica’s daughter. Like her parents, she comes from the Hela province in PNG, where she was attending school. She moved with her mother and siblings to join her father as he completed his studies in Wollongong. She attends high school in Australia.

**Paul (45)** grew up in in the northern end of PNG, in a province called East Sepik. However, he moved to the neighbouring province Sandaun (West Sepik) province 15-20 years before he moved to Australia. In PNG, he lived in a small district town with his wife and three daughters, who did not migrate with him. He came to Wollongong to pursue a postgraduate qualification on education leadership through the Australia awards programme and lives in student accommodation in a unit in Australia.

### 7.3 Dogs as Conduits of Disposal and the (Un)Making of Home

For some participants, animals played an important role in how home was configured, felt, and lived. The presence, or absence, of non-human others made and unmade home in a variety of ways that positioned them as being either suitable or unsuitable conduits of food disposal. In combination with other disposal methods (such as composting), domestic animals in PNG helped to reduce the amount of food waste that was relegated to the bin. Many participants owned dogs in PNG, and it was common to feed them leftovers or food scraps, as Joyce, Paul, Larissa and Jessica attest. However, dog ownership often became an impossibility in Australia or Aotearoa New Zealand, where most migrants lived in short-term rental apartments or units where pets were either not allowed by the landlord or impractical. In the case of PNG migrants’ food disposal practices, human-dog relationships can provide insights into how the urban and rural, and the modern and traditional, are configured through everyday geographies, practices and subjectivities. The important role that dogs played in how home was lived, felt, and constituted shaped how food ‘waste’ was moved out of the home. Dog-human
entanglements are therefore key to how food disposal is managed both in PNG and in Australia or Aotearoa New Zealand.

Dogs have been the subject of wide-ranging scholarly interest in the important roles that non-human others play in how the Self is understood, constituted, and felt. Many scholars argue that dog-human worlds (re)produce certain subjectivities, life-worlds and lived experiences (Haraway 2003, 2016; Markussen, Olesen & Lykke 2000; Power 2008). Haraway, cited in Markussen, Olesen and Lykke (2000) argues that dogs “become sites of meaning making and sites of inquiry: ethical inquiry, ontological inquiry, inquiry about the nature of sociality … etc” (p. 14) because their unique relationships with humans make them particularly vulnerable to human cruelty, carelessness or stupidity. It is through these relationships that dogs, and humans are engaged in ongoing processes of ‘becoming with’ and co-shaping each other. It is therefore important to examine how dogs become part of and shape the food disposal assemblage.

From the conversations that I had with participants, it appeared that they thought of dogs as occupying three subject positions: strays, pets, and working animals. However, these categories, configured through every day lived experience, were not discrete and slippages were common among them. How people framed dogs, and how the presence or absence of these animals made and unmade home in different ways, shaped the decision-making processes about where and how to dispose of food scraps and leftovers so that they did not become waste. Accordingly, whether dogs became conduits of disposal was closely tied to the role of the dog in the home - or outside of it. These canine subjectivities were embedded in place and are configured very differently in people’s old (PNG) and new (Australia or Aotearoa New Zealand) homes.

7.3.1 Dog-Human Relationships in the Literature

Haraway’s work (2003, 2008), and particularly her Companion Species Manifesto (2016), critiques and dismantles the nature/culture binary through her reflections on her relationships with some of the dogs that have played important roles in her life. In so doing, she highlights “the close, family, and friend-like relationships that can exist
between human beings and the animals who share their domestic space” (Charles & Davies 2011, p. 69).

This theme resounds across this literature, with many scholars deconstructing the positioning of dogs - and other domestic pets - as having “person status” (Sanders 1999, p. 9). Assigning dogs personhood makes it possible for them to ‘stand-in’ as family members, friends, and children (Veevers 1985, Beck 1983). The idea that dogs are ‘part of the family’ or a ‘second child’ is one that has been prevalent in the academic literature, inspiring a considerable breadth and depth of research (see Charles 2014; Charles & Davies 2011). Charles (2014), for example, explored how relationships between dogs and humans are embodied and affectual, interwoven into family life, and understood as sharing kinship. Charles and Davies (2011) also examined how pets are important social actors in kinship networks, which are in themselves socially and culturally constructed. Power (2008) looked at how more-than-human families are constituted through everyday practices and canine agency, despite the domestic tensions that were felt as a result of the ‘otherness’ of dogs.

Some of these exceptions can be seen in research that highlights the importance of companion animals such as dogs in the case of migration (Riggs, Due & Taylor 2016; Fox & Walsh 2011), though this is still a relatively small literature. Pets can be central to how home, family and belonging are forged in a context of upheaval, uncertainty and, in some cases, displacement. Riggs, Due and Taylor (2016) examined how migrant and/or refugee children’s relationships with pets “challenge the assumption that close cross-species ties are a primarily a [sic] western phenomenon (as implied by the overwhelming western concentration of research in human-animal studies)” (pp. 219-220). Based in Australia, their work argues that the absence of animal ‘family members’ post-migration results in emotional geographies of loss and grief, while their presence can help to shape new homes as safe after resettlement. Fox and Walsh (2011) discuss how the mobility of pets (including dogs) is vital to how the more-than-human family is constituted in a context of increased global mobility. Their focus on British migrants to Dubai and their relationships with their pets provided insights into the agency of non-human others in how home is configured in the new cultural, geographical, and social contexts of resettlement. At the same time, they argue that this agency is limited, as the
relationship between pet and human is characterised by an unequal distribution of power. Fox and Walsh also point out that while there has been much research on how domestic material cultures are key to how migrants’ home-making efforts post-migration, little attention has been paid to how companion animals are a part of this ongoing process.

Working dogs too have been part of this conversation, though the attention paid to these non-human actors has been quite limited. The literature here tends to focus on assistance or seeing-eye dogs (Higgen 2012), military dogs, obedience training (Haraway 2016) and/or show dogs. Some other working dogs, such as sheep or cattle dogs, or guard dogs, are largely absent from the social sciences literature. However, they are sometimes (or in the case of military dogs, often) addressed in other, more positivist disciplines (see Haverbeke et al. 2008, Haverbeke et al. 2009, and Jackson et al. 2015 for some examples). However, these discussions are largely situated in a western context. They do not look to the Majority World where different notions of canine skills and their roles in family or working life may be the norm.

### 7.3.2 Canine Subjectivities and Waste

Several participants identified that the lack of household animals was one of the main changes to the food disposal assemblage in Australia / Aotearoa New Zealand. ‘Back home’ leftovers and food scraps rarely were thrown away in part because they would be given to dogs and, in some cases, chickens and pigs. This was not the case in the post-migration context, where many people were unable to have pets either because of tenancy restrictions or because the duration of their life in Australia or Aotearoa New Zealand was transitory and temporary. Larissa and Jessica, for example, mentioned dogs as we talked about the disposal of leftovers in PNG:

**Rebecca:** So it [leftovers] wouldn’t just be thrown away? It’d be used?

**Jessica:** No. Not thrown away. It’d be used and we give to the animals. Cats and dogs ... We don’t really, like here, pet lovers. New Zealanders and Australians are pet lovers. So they are looking after,
like they buy [pause] pet food in the store. And that, like ours? We don’t like all this pet, and all that –

Larissa: If we have them -

Jessica: If we have –

Larissa: Dogs, they’re like, they’re guards, not as like pets.

Jessica: Now, whatever we eat, we give it to them.

Larissa: It’s what they eat.

Jessica: Not like we go to the store and buy different food for them, no. If it’s only the security dogs ... they eat human food. And mostly eat the leftover ... You [Australians and New Zealanders] look after them as another family friend, or another child or something. Then you are wasting ... what will you do with your money and your whatever, so you will look after pet and all this. But as for us, it’s another waste of money. [The dogs] are not just petss.

This exchange reveals some interesting insights into how dogs come to be designated as suitable means of disposal for Jessica and Larissa’s family. Implicit in their conversation are canine subject positions (pet and guard dog) that come to the fore differently in PNG and Australia. For Jessica and Larissa, dogs in PNG are positioned as a commodity or tool that serves a particular function – in this case, protection – rather than as another family member or surrogate child, as many scholars have asserted to be common in western cultures (Sanders 1999, Veevers 1985). Because dogs were considered to serve a practical purpose and were treated in a utilitarian way (Haraway 2016), extra or special pet food was perceived by Jessica and Larissa to be a frivolous and economically wasteful luxury. Accordingly, the canine subject of the security dogs positioned them as suitable conduits of disposal. At the same time, feeding security dogs leftovers and food scraps was a way for the fiscally responsible subject to be realised.
Furthermore, Jessica suggests that security dogs in PNG are understood to be separate from family and the home, a perspective that they acknowledge is quite different from how people in Australia and New Zealand think about dogs. Both Jessica and Larissa reject the notion that these animals are “part of the family” or “another child” and emphasise that “they are not pet[s]”. This view runs counter to the arguments of Veevers (1985), Beck (1983), Charles (2014) and Charles and Davies (2011), who take the position that dogs often act as human ‘stand-ins’ that shape human subjectivities, affects, and embodied realities. However, the work of these scholars is located primarily in the Minority World and does not address how dog-human relationships might be performed and understood differently in the Majority World.

While Jessica and Larissa position their security dogs as existing outside of the homely space - both figuratively and literally - at the same time, the presence of security dogs was integral to the making of home as safe and secure by (re)enforcing its borders against the threat of strangers whose presence may unmake home. Paul, for example, points out that security dogs are important because they keep “people who steal” out of his home. Paul’s comments illustrate how dogs can mediate the boundaries between outside and inside, and therefore occupy a liminal position between public and private space. Dogs and other animals, it has been shown by several scholars, are integral to home-making processes and feelings of belonging (Fudge 2008, Fox & Walsh 2011), but this is often discussed in terms of how animals-as-kin and humans’ relationships with them shape home through companionship and performances of care (Fudge 2008, Charles 2014). The work of security dogs, however, makes home in a quite different manner by the policing of barriers between outside and inside, nature and society, wild and domestic that demarcate the home as private space.

By contrast, in the post-migration context, participants conveyed their knowledge of dogs as humanised and considered to be ‘part of the family’, a positioning that discourages the use of dogs in the food disposal assemblage. For instance, Jessica stated that, in her experience, people in Australia and New Zealand were ‘pet-lovers’ who would purchase food for their animals for this reason. The notion of pets as persons may, in the post-migration context, play into the capitalist commodification of animals that positions them as consumers (Haraway 2008). Thinking about companion species
(like dogs) as family encourages the purchase of specialty pet foods because, as Haraway (2008) asserts, “kin and brand are tied in productive embrace as never before” (p. 47). The capitalist and consumerist positioning of pet-ownership in Australia and New Zealand may be therefore argued to discourage the positioning of dogs as conduits of disposal.

There remained a distinction, though, between which dogs were appropriate to be designated as conduits of disposal and those which were not. For Joyce’s husband, the family dogs were not to be fed food scraps:

**Joyce:** Oh yeah, the other thing is dogs like, if we have dogs we can just feed them the bones and yeah some leftover food. But like with my family my husband doesn’t like feeding dogs with bones. He cooks their own rice and he buys them their little tin fish. He said they’re like human beings. He always gets cross. Yeah, he cooks their special meal for the dogs. He goes, okay you cook your food, do whatever. After that, everybody out I’m cooking food for my dog.

Unlike Jessica and Larissa, Joyce’s husband anthropomorphised his dogs as being “like human beings”. He also identified them as being “part of the family”. Such a view worked against his dog becoming part of a food disposal assemblage. Notions of companionship, then, were key to the relationship between him and his dogs. However, as Haraway points out, to think of dogs as companions is a relatively recent positioning that helps to constitute the modern (2016), and this is evident in many societies of the Minority World including Australia and New Zealand (as Larissa and Jessica had observed earlier). Joyce’s experience provides evidence of the presence of this idea in the increasingly urbanised city of Port Moresby, where she and her husband primarily live. It illustrates how her husband’s dogs are positioned as being unsuitable conduits of disposal because his dogs are attributed person status (Sanders 1999). I argue that his anger at any suggestion to feed them food scraps and bones stems from societal norms about hospitality and care that discourage giving leftovers to other people.

Furthermore, Joyce’s husband’s strong desire to create special meals for his dogs may be seen as a performance of care akin to the food-preparation involved in caring for
children and other family members. This example thus confirms long-standing arguments that relationships with companion species are characterised by embodied performances of care (Hamington 2017) that are made possible by the ‘pet’ and ‘family member’ canine subject positions. It is apparent that, for Joyce’s husband, the act of cooking food for his dogs is an important part of the relationship of care that he has with them. As a result, the arguably more environmentally sustainable positioning of dogs as conduits of disposal would not work in Joyce’s household because it would take away her husband’s ability to perform care for his animals. Accordingly, the notion of dogs as a means of food disposal may threaten to destabilise his own subjectivity as a ‘good pet-owner’ and unmake the house-as-home.

Thus far, this discussion has focused on dogs that are welcome in the kitchen territory: pets and security dogs. However, dogs that were relegated to areas outside of the home, and thus positioned as foreign or wild, also played a part in the disposal assemblage, though not always a welcome one. Stray dogs were seen to be an undesirable addition to food disposal assemblage in PNG:

>Joyce: My children, they like to eat and then when they’re finished, they get all the leftovers and they go out, they look for animals [laughter]. We’ve got stray dogs around the - they’ll [the children] go say ‘come here’, and they just go feed those animals and I’m like oh please [laughter] ... I don’t like them [stray dogs] coming around because they put the poo like rubbish everywhere

For Joyce, the presence of stray dogs that consumed food scraps and leftovers threatened to rupture the boundaries that make home by demarcating private/public space, inside/outside, the natural/cultural, clean/dirty and domestic/wild (Power 2009, Srinivasan 2018). As Power (2009, p. 29) points out “border practices separating home from ‘outside’, wildness, nature and dirt are central to the material and conceptual construction of modern homes of the Minority World as safe, secure, autonomous human spaces” and it appears that this is also the case for Joyce in Port Moresby. For her, stray dogs trouble these borders, illustrating how they are porous and fluid. Therefore, stray dogs have the potential to unmake home.
The notion of unmaking home, as Baxter & Brickell (2015) explain, is concerned with “the precarious process by which material and/or imaginary components of home are unintentionally or deliberately, temporarily or permanently, divested, damaged or even destroyed” (p. 134). In this light, feeding stray dogs the leftovers and food scraps constitutes a potential threat to home as a place of safety. In encouraging these animals’ presence in the kitchen territory, the idea of home as a clean and controlled space is challenged. Joyce’s main concern is that stray dogs will defecate and bring dirtiness into the domestic interior. In bringing a different type of waste – bodily refuse – into the home, stray dogs introduce the abject, disgusting and unclean into the realm of the family, a space often identified as comfortable, clean and controlled (Srivinasan 2018). Thus, stray dogs and their bodily waste constitute matter-out-of-place in the domestic space – they are seen as “trash animals, as noxious Others” (Srinivasan, 2018). To frame stray dogs as conduits of disposal and to act upon that framing to feed them the food scraps and leftovers that would otherwise be relegated to the bin, tends for Joyce to blur the boundaries of the clean home and introduce into it elements of the Other that are unwelcome. This confirms Srinivasan’s (2018, p. 383) arguments that free-living (stray) dogs are positioned as a threat to notions of the urban that are “underpinned by the exclusion of ‘unsanitary’ non-human others” and motivated by a desire “for a sanitised living environment, one free of dirt, bugs, microbes, and other risky creatures such as … free-living dogs” (Srinivasan, 2018, p. 383). Other scholars have pointed out that this desire is underpinned by a fear of the dangers associated with disease and pathogens. Joyce’s disgust directed at stray-dogs appears to be shaped by ideas of modernity and urbanity that revolve around human well-being as being linked to sanitisation and cleanliness, the absence of dirt and germs (Srinivasan, 2018).

Embedded in the disposal assemblage are “contemporary ideas of development, urbanity and a good life … [which] rely on dualist concepts of society and nature and demand insulation (of people) from the risks posed from nature” (Srinivasan 2018, p. 383). Thus, the presence of stray dogs in the PNG disposal assemblage unsettles these understandings of what home should be like, particularly in a country increasingly incorporating the capitalist regime of the so-called ‘developed world’ into everyday life.
7.4 Bins, Pits and Rubbish Collection

It became clear through my conversations with participants that, in PNG, rural space was constituted through the presence of pits and the absence of bins in the disposal assemblage. However, the opposite was true in the Australian and Aotearoa New Zealand contexts, where the urban was made through the absence of pits and the presence of bins. Food scraps and waste in PNG were often routed to other conduits of disposal (animals and gardens primarily, as discussed above) before being considered for the pit. Some food and food-related inorganic waste would be routinely deposited in pits. In the post-migration context, the majority of food waste was routed to the bin and thus entered the central rubbish processing system, which constituted the urban by removing waste from cities to ensure that they remain clean, controlled, and ostensibly healthy spaces (Min’an 2011).

For many participants, the post-migration food disposal assemblage centred around the presence of bins, which as noted were rarely used in PNG for food scraps and leftovers. Paul, Jessica, Larissa, and Martha all spoke about how bins came to the fore of the disposal assemblage in Australia in the absence of non-human others (such as dogs and gardens). However, using bins for food scraps, that would have been directed to other disposal conduits in PNG, often engenders strong affective responses. For instance, Paul says:

Paul: [In PNG] bones, yeah, I think to the - the dog would love to have the bones. Vegetable peelings and stuff go the garden, yeah.

Rebecca: So I guess there’s not much leftover for the bin, then?

Paul: No.

Rebecca: Would that be the same in Australia? I guess not. You don’t have any pets or a garden.

Paul: I think most of them goes to the bin.

Rebecca: How do you feel about that? ... Do you feel any feelings of, like it’s being wasteful or it’s not going to a good purpose?
Paul: Um, would be good to make use of … I think that I-I do
sometimes feel that, um, especially, um, scrap food and that would be
good to go to the garden. So I-I do feel, um, when I throw them in the
bin, doesn’t, um, I don’t feel, feel right about it. But there’s no way to
make use of-of that.

This conversation with Paul came in a context of discussing wastefulness, thriftiness,
and frugality in terms of food disposal. In PNG, Paul didn’t commonly route food
scraps to the bin or to landfill (pits) because these things could find value in being
reused to benefit other non-human actors present within the disposal assemblage.
Accordingly, such scraps were not considered to be waste as they carried the possibility
of a ‘second life’ and being “re-valued given a different set of circumstances” (Evans
2014, p. 52). Paul suggests in this exchange that food scraps in PNG inhabited a space
of potential usefulness not only within the disposal assemblage, but also as a part of
other, overlapping assemblages (such as the garden assemblage) that operated alongside
each other in a working arrangement that (re)produced the rural in PNG. This example
illustrates that food scraps and ‘waste’ are not necessarily an endpoint (Davies 2012);
instead, they can be re-materialised and re-purposed in ways that help constitute place
and certain subject positions. In Paul’s case, the thrifty subject that can ‘make use of’
food scraps emerges in PNG.

However, when the re-materialisation of food scraps cannot be achieved in the post-
migration context – as is the case for Paul in Australia where dogs and gardens are
absent from the disposal assemblage – the thrifty subject that had come to the fore in
PNG was challenged. Paul’s comments imply that food scraps in Australia retain little
worth because he cannot ‘make use of them’, a perspective reinforced by dominant
understandings of waste as “the redundant and final by-products of cultural and
economic organisation” (Evans 2014, p. 1), and thus out-of-place and Other in a
capitalist economy for which profitability is the priority (Bishop 2000). By this view,
food scraps and other rubbish that is perceived to have little economic contribution must
be routed to the bin in order to maintain (sub)urban space as efficient and productive.
However, for Paul, doing so destabilises the thrifty subject in the post-migration food
disposal assemblage, which engenders an affectual sense of wrongness (‘I don’t feel, feel right about it’).

However, such feelings towards throwing away food scraps were not universally experienced. Jessica and Larissa, for example, did not share Paul’s emotional conflict about throwing food scraps into the bin, as illustrated below:

**Rebecca:** Do you throw things away more here [in Australia], because you don’t have the dogs, you don’t have the pigs, and you don’t have the garden for compost?

**Jessica:** Yeah.

**Rebecca:** Do you... Which way do you like better?

**Jessica:** Well—

**Larissa:** We don’t really … it doesn’t matter to us. It doesn’t matter if a dog eats it or if we throw it away. Still no good for us.

For Jessica and Larissa, what material elements comprise the disposal assemblage did not appear to be of concern. The food waste was relegated to a position of redundancy and it did not matter what happened to it after it ceased to be edible. Because the leftovers or scraps were seen to be at the ‘end-of-the-line’ of food’s usefulness and thus ‘no good’ (Davies 2012), Larissa and Jessica did not express Paul’s feelings of ‘wrongness’ and guilt. As long as the food scraps or waste were routed out of the home, where it was directed had little importance. However, some participants preferred the use of bins over the methods implemented in PNG to dispose of food. Martha spoke of how the ‘Australian way’ of throwing rubbish in the bin has become part of the narrative in PNG of what it means to be Australian and to live in Australia:

**Rebecca:** So, do you like the way in Australia better than the way in PNG?

**Martha:** Yeah, better. Actually, it’s better than the PNG. I was in, uh, in PNG, uh, they used to tell me Australia lifestyles, how to put the
rubbish in the bin, they used to, to tell me. Then I come here and really, I will see that that’s really the life that I have.

**Rebecca:** Yeah, so people will tell you stories about how they do it.

**Martha:** Yeah, story about how to do it. Yeah, now I’m doing it.

In Wollongong, where Martha lives, the rubbish collection system is very different from in PNG. There are two bins for curb side collection: A red bin for general waste to go to landfill, and a yellow bin for recyclables (glass, tin cans, and paper/cardboard). Sorting is thus an integral part of food disposal in Australia, with most food scraps going into the red bin if compost or dedicated food waste bins are not available. For Martha, this constitutes a ‘good’ rubbish system that has become interwoven into the narrative of urban/modern Australia that circulates around PNG. “Australian-ness” was seen by Martha to be constituted through the presence of bins, and the practice of throwing things, including food, into them was a performance of belonging and of realising the ‘Australian’ subject.

Once food scraps were thrown into the bin, they entered the waste stream and became the responsibility of centralised rubbish collection processes and infrastructures. Centralised waste streams in PNG were very different from their post-migration counterparts. The centralised rubbish collection and processing systems in Australia and Aotearoa New Zealand were largely invisible and operated with little direct involvement of households and residents, whose responsibility for the disposal of food ended at the domestic bin (Evans 2014). Its convenience and invisibility enabled the modern urban ideal of a sanitised and hygienic domestic territory to be realised (Min’an 2011). At the same time, it helps to make urban space in a capitalist economy efficient and productive (Davies 2012). Accordingly, the Australian centralised waste system was preferred by several participants over the pits and, from their perspective, comparatively less organised rubbish collection processes commonly used ‘back home’.

It has been argued by several scholars (e.g. Min’an 2011, Srinivasan 2018) that the presence of waste – including food waste – in urban space constitutes ‘matter-out-of-place’ (Douglas 1966) and thus presents a threat to notions of modernity that are
predicated around health, hygiene, and sanitisation. As Min’an (2011) points out, “hygiene is a core component of modernity. The degree of hygiene is also the degree of modernisation … Modernity means a total deletion of rubbish” (p. 351). The removal of rubbish from urban space to the rural periphery is therefore vital to how cities and homes in Australia and Aotearoa New Zealand are imagined and experienced. Indeed, Min’an (2011) asserts that the modern city is a ‘machine’ that, in constantly moving waste from the urban interior to the rural periphery, “forms its distinctive structure through the processing of garbage” (p.340). Min’an further argues that such processing must be invisible and occur outside of the gaze of residents, a view that is supported by Hawkins’ (2006, p.1) assertion that “catching a glimpse of the brute physicality of waste signals a kind of failure” as doing so brings to the fore that which may destabilise the self, the urban, and the modern. However, unlike Hawkins, Min’an does not take into account the material, embodied, affectual, and emotional dimensions of rubbish processing in the city and instead implies that such processing is disembodied and mechanistic in nature.

However, it became apparent in my conversations with Martha that, in urban PNG, the centralised rubbish collection was neither invisible nor disembodied, which Min’an (2011) implies is necessary to maintain the modern urban ideal. Much of the waste that goes to rubbish collection in PNG is inorganic and food packaging is often part of this disposal stream:

**Martha:** Yeah, they [the rubbish collection people] will [pause] they will horn and we know that the time to come and pick the rubbish, they will horn. We put it in the drum and then put there so that car come and pick the garbage. At PNG, we have the, all the rubbish, and they’re running. Sometimes we are running with the rubbish car, “Stay there” and you just “We- we- we- I’m coming, I’m coming” and you can hold your rubbish and running … PNG is different way. With PNG, yes, I can clean the table and, uh, after eating, I can clean the table and put it, the rubbish inside the plastic and I will wait for the car so that I will hang them. So, the car coming, the car when
horn, they started to horn, I started to run with my rubbish quick
[laughter].

Rebecca: So, are there a lot of people on your street running -

Martha: Yeah, they are same. We’re doing the same thing. Yes, we’re doing same, sometimes, you know, the men driving the rubbish car will go far away. We are shouting at him, “you should have to stay here but you are going out there”.

This exchange shows that the rubbish collection systems in PNG do not always operate hidden from the gaze of urban dwellers. It appears that the opposite is true. Indeed, the presence of resident bodies is vital to ensure that waste is removed from domestic space. The body is engaged in the process of waste removal in this context – it listens for the horn of the rubbish truck, it runs after the car, it shouts at the driver to stop and wait. Martha’s experience provides a counterpoint to the seemingly disembodied rubbish collection and processing systems often implemented in Western capitalist societies where the responsibility of waste management lies with external institutions rather than with households and residents themselves (Evans 2014). In PNG, the urban is made not through disembodied processes but through bodily encounters with rubbish and rubbish collectors among other actors.

Another point evident from Martha’s example is how the rubbish collection system brings the notion of convenience – or a lack thereof – to the fore of the disposal assemblage. She mentions later that the Australian system is very different from PNG, because removing waste from the urban centre to the rural periphery is a largely invisible activity that is the responsibility of government and private companies and thus convenient, easy and ‘out of their hands’ (Evans, 2014). Within the capitalist, socio-technical enterprise common in the Minority World, such convenience is valued as it enables further efficiency and productivity in everyday life (Bishop 2000). However, Martha’s encounters with rubbish trucks suggest that the opposite is true in PNG, where systems that do not conform with Western expectations of functionality and organisation systems challenge the notion of the modern urban ideal and in so doing engender feelings of frustration, annoyance, and stress.
If urban space is made by the absence of rubbish and the processes of its removal to the periphery of cities (Min’an 2011), rural space in PNG is made through an absence in the disposal assemblage of bins and centralised rubbish collection services. Instead, pits were identified by several participants as being a fundamental component of the disposal assemblage in PNG, common in both rural and urban environments. A small-scale version of landfill, pits were often dug by individual families to serve their immediate household but could also be a communal resource for placing unsorted rubbish, including food and food packaging waste. Angela explained that, while bins were not often part of the rural disposal assemblage, pits were very common:

**Angela:** We don’t have bins. We don’t. But we have holes or pits that we can throw rubbish. Yeah.

**Rebecca:** And that’s just, every house has their own?

**Angela:** It depends. Sometimes like a family can have one…In cases where we have cans, bottles, they all go into the pit. Sometimes we’re not so careful and we put everything at one place, like there is, at remote places it is very difficult to do recycling and stuff so everything just goes in or there are holes dug and say this one is for tins and bottles and sharp things, they all go into one. So outside that it should be buried, that’s what we do… In Papua New Guinea there is no recycling stuff. Papers can be burned, bottles and cans can be disposed in a hole, in a pit, and other, other foodstuffs can be put on, used as compost but sometimes we are not careful, we put them with the plastic bags and we just put them in the pit as well, and then later they are covered.

In remote villages, the rural is made through the presence of pits in the absence of recycling and sorting processes that are common in urban spaces such as Wollongong and Hamilton. Without formal rubbish collection systems, such processes appear to be deemed redundant and everything is deposited into the pit. Paul’s description of pits in the following exchange confirms that sorting is of little importance when directing food and food packaging waste to the pit:
Paul: We normally dig a pit, we-we dump all the rubbish in the pit. Yeah, and when the, uh, pit is full, we cover that up and then dig another one. There’s plenty of space [laughter]. When they dig a hole, they - it’s a big hole and I would say probably a-a hole would take a couple of years to fill up...It’s, I’d say, two metres by two and about, say, three or four metres deep ... Yes, so [laughter] it doesn’t get filled quickly.

Joyce, however, saw pits to be problematic because they constituted a potential health risk to herself and her family. Accordingly, she preferred the rubbish system that she has access to in Australia:

Joyce: Whereas back there [PNG], there’s no proper, um, um I mean disposing of rubbish so everything goes to the same place, and the tins can end up, you know, wa-water gets into the tin and then it breeds all these, like, mosquitoes and stuff like that. So, it’s not good, like I mean for the health side, like I don’t, I don’t like it because, yeah, it can breed all this other stuff. Like, yeah, mosquitoes and yeah all that.

For Joyce, pits came to be understood and felt as sites of potential contamination through the presence of non-human actors such as empty tins and stagnant water that drew mosquitoes into the PNG disposal assemblage. The presence of mosquitoes appears to unmake home for Joyce and her family, as it threatens to disrupt how home is constituted as a hygienic, sanitised, clean, and controllable space by introducing the possibility of pathogens and disease (in much of Melanesia, mosquito-borne diseases (e.g. malaria and dengue fever) are prevalent, and increasing in incidence (Cao-Lormeau & Musso 2014, Mavian et al. 2019). Pits, which make possible the presence of these unwanted non-human Others that threaten to destabilise the modern ideal of urban space as clean and free of pathogens (Srinivasan 2018, Min’an 2011), are therefore often seen as dangerous, unhealthy, and dirty. Furthermore, the idea that pits can “breed all this other stuff” highlights the agency of non-human actors – the stagnant water, mosquitoes and the pit itself – within the disposal assemblage to engender affectual
responses that push or pull people towards practices. In Joyce’s case, feelings of disgust and frustration came to the fore, communicated through facial expressions and tone during our interview. Such emotional and affectual responses to the presence of mosquitos and potential pathogens in the disposal assemblage reflect Hawkins (2006) argument that waste threatens to not only unmake home but also to destabilise the self. Certainly, for Joyce and her family, in the absence of a centralised waste system, tins and plastics being are routed to the pit, alongside food scraps, and their presence there introduces non-human agents that pose a potential health risk.

7.5 Composting and Gardens

For some participants, food scraps in PNG were not always routed to the end point of the ‘pit’ and thus didn’t enter the waste stream. Using food scraps as compost or mulch was a common way by which the ‘full potential value’ of the matter was realised. The practice of composting, however, enabled more than mere food disposal or nutritional supplementation to plants. It also made possible a range of subject positions through the making and unmaking of home and family.

As discussed in section 7.4, when opportunities to compost food scraps or use them for mulch are not present in the post-migration context, some participants sensed displacement and discomfort. To revisit Paul’s example of the bin in Australia, it didn’t ‘feel right’ to throw away food that could find use and value in the garden, which was often missing from people’s domestic space. In this example, the home territory becomes destabilised when the rhythms of composting that were present in PNG and helped to constitute a sense of stability and comfort in that context, are no longer present in the disposal assemblage in Paul’s ‘new home’. Such rhythms, while helping to (re)produce the rural in PNG, engendered bodily and affectual responses that Paul sometimes found uncomfortable in Australia. Joyce had similar affectual and emotional experiences related to composting post migration, and said:

Joyce: I was looking for that [the composting bin], oh where is it and then I saw this bin I went lift it up, uh lifted the lid and I saw some dried like shrubs and the cuttings from the flowers that they threw inside and I saw [a] compost thing. So I was thinking, oh do I have to
find out like is it okay for the food peelings to go in there as well? ... I want to know what they won't accept.

For her, a moment of uncertainty arose when she didn’t know the appropriate place at her student accommodation building to put her scraps, collected in an ice-cream container, for composting (Figure 3). Unfamiliarity with taken-for-granted, unspoken norms of composting can engender uncomfortable moments for some migrants living in shared apartment complexes.

![Figure 3: Joyce's food scraps and peelings, in an ice-cream container for potential composting (photo by Joyce).](image)

Like Paul and Joyce, Angela too found that, in Aotearoa New Zealand, a lack of compost options in her current residence – a shared semi-attached house – presented uncomfortable moments that threatened to destabilise the self as not-wasteful subject.

Angela mentioned one such moment in this snippet of conversation from a wider discussion about wastefulness and food disposal:

**Angela:** Last year when I lived at Orchard Park they have a place where we could um put the say waste from leaves and peelings. But
now at my current place I just don’t have any choice I just put everything in the bin.

**Rebecca:** Does it feel really wasteful?

**Angela:** [pause] Yes. Especially the peelings but if it was at home I would go and put it near under a banana tree or so; but I can’t do it here.

**Rebecca:** Yeah, a lot of places [in New Zealand] don’t let you do composting because they think you’ll put other things in there.

**Angela:** That’s right. They are very careful.

**Rebecca:** So you don’t have any compost at all?

**Angela:** At here? No.

**Rebecca:** Do you wish that there was?

**Angela:** If there was I would appreciate this if everyone in the same house we are living in is doing the same thing then it would be okay here or if there is, yeah, I’d be happy to pour out, especially food peelings and yeah stuff.

For Angela, the wasteful subject position of the disposal rhythms of centralised waste systems that do not offer ‘green waste’ collection is suggested to be one of discomfort. The unfamiliar rhythms of binning and throwing away food leftovers and scraps therefore had the potential to deterritorialise her home in her new country. It is also apparent that Angela considers that rhythms of composting reproduce collective time, and only contribute to the refrain if everybody participates. The collective subject, which is a key component of everyday life in PNG, is therefore central to how Angela frames composting in the post-migration context.

It is apparent from these examples that Paul and Angela feel that it is ‘good’ to direct what would otherwise be food waste to pathways of disposal, such as the garden, that
enable it to go on to a ‘second life’ of usefulness. In Australia, Paul thought about continuing the practice of using food scraps as mulch that he performed ‘back home’ in PNG:

**Paul:** I-I thought the other day to put some rice leftover on my flower - the small flower garden [window box] outside the room. But I thought the birds might come and, you know, feed on that and spoil the flowers so, so I just dumped them in the bin.

From this quote, it is apparent that the flower’s presence helps to constitute home and homely space for Paul. Gardening, it has been argued, constitutes an important home-making practice for migrants that can be an act of settlement and connection to place, both in the present (post-migration) and in the past (pre-migration) (Holmes, Martin & Mirmohamadi 2008; Beattie 2011). The rice leftovers thus have the potential to become an important part of Paul’s home-making practice. At the same time, its presence in the garden brings the risk of attracting unfamiliar more-than-human agents that threaten to unmake home by physically ‘spoiling’ or destroying the flower. Like the stray dogs discussed previously, the potential presence of unfamiliar birds in Paul’s homely space troubles the boundaries of home by bringing nature and the wild into domestic, controlled space (Baxter & Brickell 2014). A desire to avoid this situation shapes Paul’s decision to relegate his rice leftovers to the bin, despite him feeling it was ‘wrong’. As Probyn (2005, p. 2) argues, guilt ‘once dealt with is forgotten’. To this Probyn (2005, p. 45) adds: ‘Guilt is triggered in response to specific acts and can be smoothed away by an act of reparation. In this example, Paul’s guilt is smoothed away by the potential threat of unfamiliar birds damaging the plants.

These examples provide a more nuanced take on the argument that organic matter is positioned as waste in urban environments, which are increasingly concrete and lacking in green spaces where such matter can decompose and return to the earth (Min’an 2011). Migrants from PNG arrived with their embodied knowledge about composting, and are alive to the potential to compost, even in window boxes. Yet, most quickly learn that composting is still the exception, rather than the norm, particularly for people living in apartments. As Srinivasan (2018) argues, the challenge of composting in cities is
because organic waste is embedded in ideas that it must be removed to maintain the urban order as clean and safe from risks of disease. This imperative leads to an increased usage of bins and reliance on mechanised, dehumanised rubbish collection processes. This way of framing organic waste is at odds with how, through enriching the soil and encouraging new growth, food scraps can reproduce the rural, as some scholars argue (Min’an 2011). It is clear in Paul’s case, for example, that when these two ways of thinking about waste come into conflict, tension arises.

In PNG, participants underscored how the rhythms of composting sustained family time, alongside making familial homes and gardens. The literature appears to fail to acknowledge how rurally situated organic ‘waste’ such as food scraps has the potential to achieve more than just healthier crops or richer soil. There is comparatively little scholarly engagement with compost as an embodied, affectual, and emotional phenomenon with the potential to make certain subject positions, lived experiences, and spaces (though some exceptions can be seen in the compost and soil work of Turner 2014, 2019 and Krzywoszynska 2019). Joyce’s experiences below illustrate the role of composting in PNG family life:

Joyce: All the food peelings, they go into one, um, bin here, that goes to the garden so that’s what we do. Not really the garden where we plant food but where we go for my like flowers. Put them there … So they [my children] know, whenever there’s peeling, oh this is for my banana, cause they like, they’ll plant these [pause].

Rebecca: Oh, the kids have their banana peel and they plant it.

Joyce: Yeah, mm-humm [affirmative]. Yeah, this goes to my, and they like you know cutting - if there’s bigger peelings I say can you cut them into smaller shreds and then we go and throw them [into the garden] so they like doing that.

Rebecca: Oh, nice. Like a, like a bit of a family activity, cutting up the peelings?

Joyce: [laughter] yeah.
Joyce here confirms that putting food scraps in the garden is “better” than putting it into the pit, suggesting that framing food scraps as waste is undesirable or uncomfortable because it has potential for use. For her, this usefulness was not just as an enricher of soil and crops but also as a family activity with her children, who derived pleasure and fun from the activity. Rhythms of composting and mulching thus made possible family time. Furthermore, composting food scraps was a way by which Joyce and her family constituted themselves in relation to one another and cemented family relationships.

However, Joyce noted that food peelings were not to be used for crops intended for human consumption. Instead, they were given to flower gardens whose function was to be decorative and ornamental. There is a suggestion, then, that food scraps in PNG, despite retaining value and usefulness as compost material, were still identified as possible contaminants that couldn’t be in proximity to food plants. These scraps appeared to still be regarded as waste and as Other to the self (Douglas 1966).

7.6 Conclusion

In framing disposal as an assemblage, the chapter set out to show how more environmentally sustainable practices and materials in domestic space intersect with the ways subjectivities and territories are made and remade in everyday life. The chapter has illustrated how the more-than-human, including dogs, bins, gardens, and waste itself, configures people’s understandings of home and self in important ways that may come under threat with the introduction of ostensibly more environmentally beneficial food disposal activities.

Different canine subject positions emerged in the disposal assemblage pre- and post-migration and played an important role in whether dogs were considered to be appropriate conduits of food waste disposal. These canine subjectivities of pet, stray, and security dog configured home, the rural, and the urban in ways that created secure and comfortable space for participants. Changing how dogs become agents of food disposal, or not, thus threatens to destabilise how these spaces are felt and lived in by participants. Thus, while encouraging the reduction of food waste through feeding scraps to dogs might be a more environmentally sustainable option than routing it to the
bin, doing so may run the risk of disrupting carefully negotiated home-making practices.

The second example of pits and bins illustrated how disembodied waste disposal processes adopted post-migration made possible the modern urban ideal of clean and dirt-free domestic space that many migrants preferred to the more chaotic systems in PNG. At the same time, however, the increased waste that such a system encouraged could conflict with existing ‘frugal’ or ‘thrifty’ subjectivities that produced uncomfortable moments of guilt and an affectual sense of wrongness.

In the post-migration context, a lack of gardens and thus also composting options for participants living in high density (sub)urban dwellings led to increased throwing away of food that in PNG would be used as mulch. In PNG, rhythms of composting helped to constitute family time, and familial relationships, while at the same time (re)producing the rural. However, in Australia and Aotearoa New Zealand, these rhythms became lost and more food scraps were relegated to the waste stream through the bin.

These three examples highlight the significant tensions that exist in the expressive and material forces that sustain the disposal assemblage. Accordingly, understanding what may be framed as sustainable action requires a critical interrogation of these tensions. Encouraging people to adopt sustainable practices needs to take these tensions into account. In the final chapter that follows I return to my research questions and outline the answers to them and consider the implications of my research for future scholarship and policy development.
CHAPTER EIGHT: CONCLUSION

8.1 Introduction

Inspiration for this research came from how food waste in the home has become an issue of increasing global prevalence. Food waste is estimated to account for up to 29 percent of Australian households’ greenhouse gas emissions (Wright, Osman & Asworth 2009). The urgency and motivations for this research on household sustainability only intensified over the period of my candidature. At the time of writing, a wave of bushfires in New South Wales, the scale and severity of which are unprecedented, were exacerbated by rising temperatures directly as the result of global climate change (Mack 2019). Around the globe, 2019 was marked by extreme weather events that wrought more destruction than in previous years. For example, considerable devastation and loss of life was wrought by the California wildfires in the United States of America, Typhoon Hagibis in Japan, and Cyclone Idai in southern Africa, which was estimated to have cost 1,300 people their lives (Mack 2019). These events are not isolated, but part of a global trend towards more frequent, destructive, and larger-scale disasters that threaten people’s homes, livelihoods and lives as the average global temperature continues to rise.

Recently, Head and Klocker (2013) argued for the incorporation of the voices of ethnic minority migrants to help rethink household sustainability. This is particularly the case for food waste. While food waste at the scale of the household has attracted increasing levels of attention in Minority World cities (see Evans 2012a, 2014; Waitt & Phillips 2016; Phillips & Waitt 2018; Turner 2019; and Urrutia, Dias & Clapp 2019 for some examples), rarely does this incorporate ethnic minorities. This led to a thesis on the everyday food practices of Papua New Guinean migrants to Australia and Aotearoa New Zealand. Conducting a food waste ethnography with ethnic minorities poses a series of methodological challenges. To address these challenges, I was guided by a talanoa approach alongside advice from feminist and post-colonial scholars.
The thesis draws together corporeal feminist thinking and the ideas of Deleuze and Guattari (1987) to provide an account of food practice. Specifically, I use their work on assemblages, and the related concepts of affect, refrain and territory. I offer insights to household sustainability as a socio-material spatial arrangement through an analysis of the everyday food practices of Papua New Guinean migrants to Australia and Aotearoa New Zealand. I looked at how these practices were embedded in rhythms that sustained a sense of self, family and home.

Assemblage thinking provided an opportunity to understand how food provisioning, preservation, and disposal are entangled into the territorialisation of home spaces as safe and secure in a context of change and uncertainty generated by migration. This led to support arguments that food waste cannot be understood without paying attention to materiality, viscerality, emotions, subjectivities, and affects (Waitt & Phillips 2016, Phillips & Waitt 2018).

In this concluding chapter, I reflect upon the thesis aims. I begin by reiterating the research questions, before identifying how the principal findings across the empirical chapters address them. I recap the key findings: (1) how becoming embedded in the rhythms that sustain capitalist structures shapes food practices, (2) how rhythms and practices territorialise space and help to sustain subjectivities, and (3) the role of non-human actors in food assemblages. I then identify the contributions that the thesis has made to geographical research, specifically that relating to household sustainability. Finally, the discussion turns to the policy, theoretical, and empirical implications that have arisen from the thesis. I identify potential pathways for future research that can further explore the corporeal politics of household food waste in migrant communities.

8.2 Revisiting the Research Questions

What can we learn from PNG migrants living in Australia / Aotearoa New Zealand about household food sustainability? Rather than asking ‘what is household food sustainability’, the question guiding the thesis centred on focusing on the achievements of food practices:
1. What subjectivities, places, and temporalities are sustained by PNG migrants’ food practices in PNG?
2. How are these practices changed, abandoned, or transferred to Australia and Aotearoa New Zealand?
3. What are the implications of these transitioning practices for household sustainability, specifically food waste?

The analysis was divided into three food practice assemblages: provisioning, preserving and disposing.

Chapter Five introduced the notion of the ‘food provisioning assemblage’, alongside the related concept of refrains. The chapter argued that food provisioning operates around a refrain of food shopping, preparation, and consumption that enabled a territory to be expressed as home and helped to (re)create individual and collective identities. More sustainable foraging and food growing rhythms that helped to constitute the rural in PNG were abandoned after relocation because of the expressive forces that deemed leafy green vegetables from home as either unavailable, toxic and/or invasive. Following migration, joining existing refrains of shopping and checking food supplies in the home offered an opportunity for some migrants to forge a sense of belonging by realising the Australian or Aotearoa New Zealand subject. The chapter highlights how food provisioning produces refrains that shape how home is made, experienced and felt. These refrains mobilise people to adopt environmentally sustainable behaviours in domestic space. Calls for more sustainable food purchasing practices will fail unless the provisioning refrain in all its complexity is understood.

In Chapter Six, I invoked the notion of the ‘preservation assemblage’ in order to examine how food preservation activities achieve more than just the slowing of decay. Using the examples of smoke and fridges, the chapter examines how food preservation sustains a range of different subject positions pre- and post-migration. These subject positions included the entrepreneurial and benevolent subjects in PNG, and the ‘good’ tenant and student in Australia and Aotearoa New Zealand. Chapter Six illustrates how PNG migrants transition to arguably less environmentally sustainable food preservation practices because of their reliance on the refrigerator in Australia and Aotearoa New
Zealand (compared with PNG). This is done partly to accommodate certain subject positions that are prioritised in the post-migration context, including being a student. As tenants, smoking practices were stopped. At the same time, refrigeration increased because the convenience of this technology to keep foods fresh enabled participants to realise the efficient subject. Accordingly, the chapter argues that more sustainable food preservation activities have the potential to destabilise subjectivities that are important to migrants’ efforts to establish homely space in the post-migration context. From this perspective, the taken-for-granted qualities of the refrigerator in the Australian / Aotearoa New Zealand preservation assemblages work against more sustainable food preserving outcomes.

Chapter Seven focused on the ‘disposal assemblage’. This chapter aimed to better understand how non-human agents come to be coded as appropriate conduits of disposal or not pre-and post-migration through the examples of dogs, bins, pits, gardens and compost. The findings showed that in suburban Australasia, sanitised domestic territories were (re)made through rhythms of binning services provided by municipal authorities. Participants quickly adopted this practice in order to keep out the chaos that arises from the presence of dirt. As a result, acts of composting and feeding dogs that sustained rural life in PNG and reduced food waste were discarded. The significance of this chapter lies in the argument that people’s capacity to act in sustainable ways is shaped by their affectual entanglements with more-than-human actors that territorialise, re-territorialise or de-territorialise domestic space as comfortable and secure. Attempts to reduce household food waste that do not take into account the complexities of the disposal assemblage are likely to fail.

### 8.3 Research Contributions

The research contributions are empirical, theoretical and methodological. As highlighted by Head and Klocker (2013), voices of ethnic minority migrants are all too often absent in the household sustainability literature. This is particularly evident in the field of food waste. This silence is despite findings that the expertise, knowledges, and experiences of ethnic minority groups offer unique perspectives. Their insights have the potential to transform how sustainability may be understood and performed in the Minority World (Clarke & Agyeman 2011; Klocker & Head 2013; Waitt &
Nowroozipour 2018; Waitt 2018). This thesis has started to address the lacuna by providing a rich account of Papua New Guinean food practices in a migration context, and the implications of this for food sustainability within the home. The migrant experience has been the subject of much research (see Hage 1997; Longhurst, Johnston & Ho 2009; and Johnston & Longhurst 2012, 2013 for examples of work located in Australia and Aotearoa New Zealand). However, the focus has rarely been understood in terms of waste and sustainability. Likewise, research that does bring to the fore people’s lived experiences of food and waste does not often engage with ethnic minority migrants (see Evans 2012a, 2014 and Waitt & Phillips 2016). Inclusion of ethnic migrants in household sustainability debates is crucial given the likelihood of large-scale climate migration and projected increasing numbers of climate refugees in the not too distant future.

A Pacific focus is particularly important. Pacific island states face some of the most immediate and damaging impacts of global environmental change, including sea level rise that threatens their homes and changing ocean currents and temperatures that affect their livelihoods and one of their primary food sources (fish and other seafood).

However, even though the Pacific may be considered one of the most exposed regions to the impacts climate change, the voices of their communities are often not included in household sustainability debates in the countries (such as Australia and Aotearoa New Zealand) that are among the most responsible, on a per capita basis, for the high levels of greenhouse gas emissions that are the driving force of the climate crisis. Furthermore, a neo-colonial framing of climate change has often denied Pacific Indigenous peoples the agency to participate in meaningful climate change debates at both international and national scales (International Labour Office 2017).

The theoretical contribution is through the application of feminist post-structuralist and assemblage thinking to sustainability debates that engage with the Pacific and its peoples. Existing research located in the Pacific region tends to focus on climate change mitigation, adaptation and resilience. This research is inclined to incorporate a positivist approach that favours disembodied and reductionist understandings of complex social processes (see Barnett 2001 and Hay & Mimura 2013 for some examples of this work). Thus, this literature has a tendency to overlook the everyday lived realities that shape
people’s responses to climate change and specifically the relational interplay between bodies, affects, emotions, discourses, and rhythms. However, understanding the socio-material assemblages that constitute the working order of everyday life can offer insights into people’s capacity to engage in climate change mitigation, adaptation, and resilience activities. The thesis has addressed this gap by focusing on three food-related assemblages that bring to the fore the material, corporeal, affectual, and emotional entanglements that PNG migrants have with food and waste in the domestic sphere.

Deleuze and Guattari’s notion of the refrain advances understandings of the migrant experience in relation to food waste and sustainability. The refrain offered a theoretical lens to analyse how rhythmic qualities of everyday food practices help constitute subjectivities and home. The concept draws attention to how these subjectivities are stabilised and (home) space is territorialised as secure, safe, and comfortable in a context of chaos. The refrain brings a new but complementary perspective into the literature on the migrant experience, highlighting the rhythmic qualities in how people make home in an unfamiliar cultural, physical, and emotional landscape (see Collins 2008, Hage 1997, Johnston & Longhurst 2012, Brown et al. 2010).

The methodological contribution lies in the thesis’ response to calls in geographical literature for research that goes beyond the text-based data collection methods privileged by the positivist and rationalist tradition in the social sciences (Edwards & Ribbens 1998). I have done so by drawing together post-structuralist feminist methodologies with a decolonising knowledges approach inspired by Vaioleti’s (2006) talanoa research method. In bringing together these two research methodologies in concert, I moved away from reductive epistemologies that favour objectivity and more extractive methods of data collection. Instead, in order to foster an understanding of diversity and difference (Adams-Hutcheson 2014). this methodology focussed on interrogating essentialist understandings of truth, identity, and power (Larner 1995). I embraced less prominent modes of knowledge production and representation, such as participant photography and kitchen insight tours, that do not revolve around verbal text was vital to achieve this end. While feminist scholars are increasingly incorporating embodied encounters into their research practice (see Longhurst, Johnston & Ho 2009; Hayes-Conroy & Martin 2010; Waitt 2014 for a small sampling of such work), this is
rarely framed in terms of the politics of knowledge decolonisation outside of Indigenous studies. Many Pacific cultures, including those in PNG, may not frame knowledge using the same text-based frameworks that are common in the Minority World. Accordingly, adopting a methodology that brings together feminist and decolonising perspectives offers an opportunity to more accurately represent the experiences of research participants. This is particularly important given that the voices of PNG migrants are rarely included in ethnographic household sustainability research.

8.4 Implications

8.4.1 Implications for Policy

Policy makers tend to focus on technological, behavioural, and/or economic solutions to the food waste issue. For example, the Australian Government’s National Food Waste Strategy’s (Commonwealth of Australia 2017) ‘framework for action’ highlights three of four ‘priority areas’: business improvements, market development, and behaviour change. However, these kinds of solutions alone cannot transform people’s attitudes towards, understandings of, and performances of doing food waste. Through PNG migrant food practices, this thesis has shown that affectual and rhythmic considerations underpin people’s decisions about what foods are constituted as waste. These considerations sustain subjectivities, places, and temporalities. For migrants seeking to make home in an unfamiliar and chaotic landscape of change these considerations are particularly important. Accordingly, policy makers need to take into consideration how proposed actions to address food waste may impact how people navigate their everyday lived realities. Thus, the embodied facets of food waste need to be a part of policy decisions.

Policy makers need to acknowledge that wider social change is required to address some of the factors that contribute to high levels of food waste. As this thesis has illustrated, it is often the challenges of transitioning to the everyday rhythms that comprise a capitalist social framework that makes more sustainable food practices impossible. These rhythms help stabilise the individual over the collective subject, and efficiency over collaboration. Seeking to change food practices within such a capitalist refrain by introducing new technologies or economic imperatives may not solve the
problem. The rhythms that sustain capitalism itself often pose the greatest barrier to food sustainability within the home (Harada 2014). The thesis confirms Harada’s (2014) suggestion that it would be helpful for policy makers to frame more sustainable food choices and practices in terms of how they “support subjective understandings of the self” (Harada 2014, p. 203) rather than through ‘education’ campaigns and technologically centred solutions. Such practical measures as changing rental laws to allow tenants to more easily have pets that could eat leftovers, or provisioning rooftop or other community gardens in new high-density housing developments. However, these initiatives need to exist alongside a questioning of how they help people make sense of themselves and their worlds. Failing to do so is likely to result in people continuing to engage with less sustainable practices.

8.4.2 Implications for Future Geographical Research

Future research may build upon the concept of food (waste) assemblages and ethnic minority migrants. Firstly, in this thesis I have worked primarily with PNG migrants who had the financial and/or educational means to migrate to Australia or Aotearoa New Zealand for tertiary study. Of the 12 participants who entered into the study, 9 were university students, 7 of whom were postgraduate students with already established careers in PNG and thus living in these countries for the short-term. Most, if not all, participants had scholarships that contributed to their living costs and covered their tuition fees. Accordingly, this research focussed on a small and relatively privileged segment of the PNG migrant population. These people revealed interesting and important insights into people’s relationships with food and waste in the context of migration, though more attention in future research in looking at the experiences of longer-term (non-student) migrants, and comparing their experiences to shorter-term, temporary migrants, would offer insights into any differences in experiences. That said, missing are voices of migrants from other backgrounds, whose migration journeys, subject positions, lived experiences, affects and emotions may be very different. Also absent are migrants who relocate for seasonal work opportunities, those who are long-term and/or permanent migrants, or those who are second-generation migrants. Equally important in the field of household sustainability is the consideration of the experiences of refugee populations who cannot return to their home country for lack of state
protection. They have very different pathways to migration and thus encounter specific difficulties and hurdles to overcome in the resettlement process.

Second, the thesis has focused upon the experiences of migrants primarily, but not exclusively, between the ages of 30 and 50. However, rich insights into food and waste may be gained by engaging with migrants from different generations. One way in which this may be achieved would be to work with second or third generation migrants. How are the environmental practices and knowledges of the parents or grandparents from ‘back home’ integrated into everyday practice, or not? Which ‘traditional’ practices are adopted, changed, abandoned, or reimagined? Why are certain practices amongst younger generations while others may be retained or adapted? These are some of the questions that could be addressed.

8.6 Final Remarks

Issues of household sustainability are as vital, if not more so, than when I embarked on this research. This is evidenced by increasing climate instability in the Pacific (where sea level rise, and extreme climatic events such as tropical cyclones and droughts threaten people’s homes and livelihoods), Australia (where bushfire risk and impacts are foreseen to increase as a result of a rise in global temperature), and Aotearoa New Zealand (where droughts have caused significant problems). I have brought to the fore food waste in these conversations, with a focus on PNG migrants’ experiences. As the possibility of climate refugees becomes more a reality, to combat climate change the voices of those upon whom it will wreak the greatest impact are an important part of the conversation (Mack 2019).
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Appendix 1

Participant Information Sheet

For the Project

Kitchen Cabinets: Kitchens and food as gendered sustainability practice in Pacific Island migrant households

Purpose of the Research:
Food is integral to our everyday lived experience, and central to migrants’ adaptation to settling in a new country. This research aims to gain an understanding of how Pacific Island migrants perform everyday and routine food-related activities, looking particularly at how food is stored, prepared, and, eventually, moved on from the kitchen. In doing so, it seeks to explore how culturally diverse environmental knowledges and gender relations shape such practices.

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What You Will Be Asked to Do:
If you choose to participate in this research, you will be invited to talk about your everyday food and kitchen activities both in Australia, and in your country of origin.

There are four potential stages in this study. You may choose to participate in as many or as few of these stages as you wish; there is no obligation to take part in any or all of the stages outlined below.

Stage 1: Semi-Structured Interview
A researcher will meet with you at the time and location of your choice to have a one-on-one conversation about your food and kitchen practices. You will be asked questions about your kitchen, how you shop for and grow food, how you store food and prepare it, and how you dispose of it.
Stage 2: Participant Photography
Using either your own camera/smartphone, or a camera provided by the researcher, you will be asked to take photographs of your food and kitchen practices over a ‘typical’ food week (i.e. not a religious holiday).

Stage 3: ‘Go-Along’ Kitchen Tour
A researcher visits you at your home to observe and learn from you how your kitchen(s) are organised and how you use them. You may be asked to re-enact food-related everyday routines such as meal preparation and clean-up.

POSSIBLE RISKS, INCONVENIENCES AND DISCOMFORTS:
Apart from our input of time as a participant in this research, we anticipate no further inconveniences for you. Your involvement will be tailored to suit your needs, and you will not be pressured to take part in more activities than you wish to, nor will you be pressured to answer questions or provide information that you are not comfortable in doing so. You are free to withdraw from the research at any time; you may also withdraw the information that you have provided up to three months after you have finished contributing data. Should you choose not to participate, this decision will not affect any relationships that you have with the University of Wollongong.

CONFIDENTIALITY AND SECURITY OF DATA:
You can choose to remain anonymous through the use of a pseudonym (false name) to protect your identity, or to be referred to by your real name. Following the ethical guidelines and standards as outlined by the University of Wollongong, all data that we obtain from you will be stored for a minimum of 5 years in locked cabinets in the School of Geography and Sustainable Communities, and password-protected computers. With approval from the University of Wollongong’s Human Research Ethics Committee, the data may continue to be used by the researchers in related research and publications after the 5-year period has lapsed.

USE OF DATA:
This research will be used to better understand how Pacific Island migrants use the kitchens in their homes, and the ways in which they prepare, eat, and dispose of food. The data obtained will be used as the basis of a PhD thesis and may be published in academic journal articles, books, and conference papers. The findings may also be discussed in media interviews. Pending approval from the University of Wollongong’s Human Research Ethics Committee, the data may continue to be used by the researchers in related research and publications after the 5-year period has lapsed.

ETHICS REVIEW AND COMPLAINTS:
This study was reviewed by the University of Wollongong’s (UoW) Social Sciences Human Research Ethics Committee. If you have any concerns or complaints regarding how this research has been conducted, please contact the UoW Ethics Officer on (02) 4221 3386 or email rso-ethics@uow.edu.au. If you have any questions about this study, please contact rsc844@uowmail.edu.au

Thank you for considering participating in Kitchen Cabinets: Kitchens and food as gendered sustainability practice in Pacific Island migrant households.

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APPENDIX 2

Consent Form for Research Participation

RESEARCH TITLE:
Kitchen Islands: Kitchens and Food as Gendered Sustainability Practice in Pacific Island Migrant Households

RESEARCHERS:
Gordon Waitt (phone: ; email: gwaitt@uow.edu.au)
Rebecca Campbell (phone: ; email: rsc844@uowmail.edu.au)

School of Geography and Sustainable Communities
Faculty of Social Sciences
University of Wollongong

I have read and understood the participant information sheet about the project “Kitchen Islands: Food as Gendered Sustainability Practice in Pacific Island Migrant Households”. I have discussed the research project with Rebecca Campbell, who is conducting this research as part of a PhD thesis in the Faculty of Social Sciences at the University of Wollongong.

I have been advised of the potential risks and burdens associated with this research, including the time taken to participate in it. I understand that my participation in this research is voluntary and that I am free to decline to participate in and to withdraw from it at any time. If I decide to halt my involvement in the research and/or withdraw my consent, I understand that doing so will not affect my relationship with the University of Wollongong in any way. I further understand that, up to three months after I have finished contributing data, I can withdraw any data that I have given to the project by contacting the researchers either via email or phone (see above for contact details).

If I have any enquiries about the research, I can contact Gordon Waitt. If I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on (02) 4298 1331 or email rso-ethics@uow.edu.au.
I would like to participate in the following stages of the research project:

☐ Stage One: Focus Group
☐ Stage Two: Interview
☐ Stage Three: Participant Photography and Follow-Up Conversation
☐ Stage Four: ‘Go-Along’ Kitchen Tour

By signing below, I am indicating my consent to (please tick):

☐ Participate in the research stages that I have selected above.
☐ Be audio-recorded for the duration of the interview

In published materials relating to this research, I would like to be referred to by (please tick one):

☐ My real/given name  ☐ A pseudonym (false name)

I understand that the data obtained from my participation in this research will be used in the publication of academic journal articles, books and conferences, and will provide the basis for a PhD thesis. I also understand that it may be used when communicating research outcomes to the media. I consent for the data I provide to be used in these ways.

Signed: ________________________________ Date: ________________________________

Name (please print): ____________________________________________________________