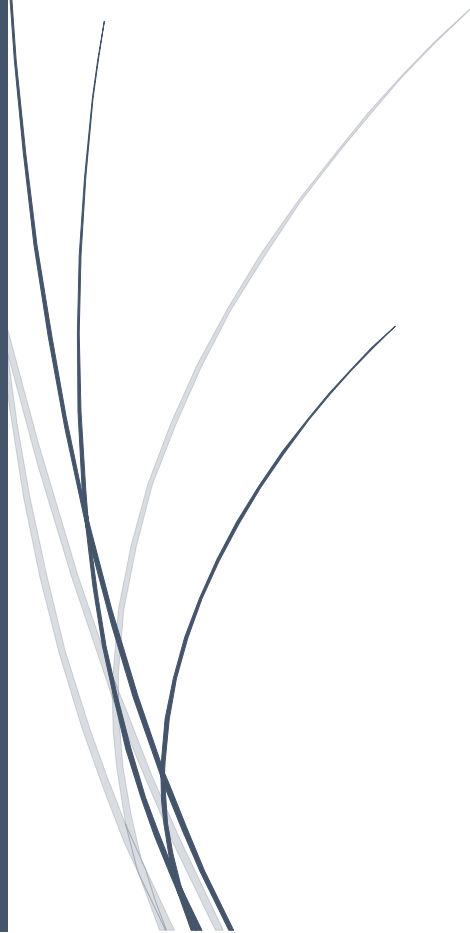




January 2015

Networks of Support for Māori Mental Health

The response and
recovery of Tangata
Whaiora through the
Ōtautahi earthquakes



Report on research funded by
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Dr. Simon Lambert

Te Whanake, Faculty of Environment, Society and
Design; Aotearoa/New Zealand, Lincoln University

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*Tēnā koutou, tēnā koutou, tēnā no tātou katoa.
Tihei mauri ora!*

1. Executive Summary

1. This report presents the experiences of Tangata Whaiora (Mental health clients) through the disastrous earthquakes that struck Ōtautahi/Christchurch in 2010-11. It further analysis these experience to how show the social networks these individuals, their whānau, supporting staff respond and recover to a significant urban disaster.
2. The disaster challenged the mental health of those individuals who are impacted *and* the operations of organisations and networks that support and care for the mentally ill. How individuals and their families navigate a post-disaster landscape provides an unfortunate but unique opportunity to analyse how these support networks respond to severe disruption.
3. Tangata Whaiora possess experiences of micro-scale personal and family disasters and were not necessarily shocked by the loss of normality in Ōtautahi as a result of the earthquakes. The organic provision of clear leadership, outstanding commitment by staff, and ongoing personal and institutional dedication in the very trying circumstances of working in a post-disaster landscape all contributed to Te Awa o te Ora's notable response to the disaster.
4. Tangata Whaiora have particular philosophical insights into modern life that instruct on how to live in a disrupted world. Their advice de-emphasises material possessions and elevates personal relationships.
5. Although good statistical data is generally lacking, the earthquakes have undoubtedly severely impacted Māori and communities, and we know Māori to be more mobile than Pākehā. The scale and severity of the disaster has changed the lives and circumstances of individual Māori, whānau and Māori communities both directly through the trauma and damage, and indirectly through the loss of employment, income, family and community asset wealth, business viability, the loss of neighbours, school friends, and workmates.
6. Tangata Whaiora are even more mobile than other Māori but while many participants knew their iwi and marae, they are rarely in any contact with tribal organisations.
7. The experiences of Tangata Whaiora can be grouped into two broad intersecting impacts. First there was fear, anxiety, dislocation and loss. Many participants had to move, some lost their jobs, and most felt the disruption to their lives. Moving around the city was difficult, with most relying on public transport which was severely disrupted. The logistical challenges of accessing food and water were significant, as was accessing medication.
8. For some participants, including staff and managers, damage to their homes led to physical, emotional and financial strains as the minutiae of insurance issues, city council and government regulations, and communicating with construction workers exacerbated the considerable anxiety already experienced.
9. However, there was also pride, exhilaration, new connections and stronger existing connections for many participants: in the words of one participant, 'I did not crumble.' Participants knew they had lived through a significant historical event and their personal survival was a matter of pride. Some Tangata Whaiora related stories about their own leadership roles in whānau, residential care facilities, the community and neighbourhood as they 'stepped up' in the absence of other leaders.
10. Several participants mentioned previous trauma that was integral to their responses to the earthquakes. Wider issues among whānau and communities can be detected leading to the concept of overlapping phases – reduction, readiness, response and recovery – of disaster at all scales, including wider Māori societal recovery from colonisation.

11. Analyses indicate a clear ranking of connectivity, headed by managers and showing Tangata Whaiora as the least connected, the variety of nodes of support identified by Tangata Whaiora (and Māori in general) indicate the resiliency of the support networks is based on the diversity of options.
12. Tangata Whaiora knew that asking for and offering assistance contributed to their wellbeing and the wellbeing of others. This reciprocal arrangement also increased their sense of worth and participation. These actions were regularly and rhythmically attested to in *waiata*, *karakia*, conversation and in art.
13. The cultural practices of *manaakitanga* and *whanaungatanga*, noted in earlier research, emphasise the necessity of connecting with people regardless of the disaster. Maintaining relationships and contact was noted by managers, staff and many Tangata Whaiora as fundamental to wellbeing and safety.
14. While attention is now given to Indigenous Knowledge (IK) and its role in disaster risk reduction, much of this research focuses on Traditional Ecological Knowledge (TEK) and does not easily incorporate the experiences of urbanizing Indigenous communities and those Indigenous individuals and collectives that are distant from their traditional territories.
15. Despite the forced movement of Tangata Whaiora across a post-disaster landscape and sometimes beyond to other cities and towns, participants were almost always secure, cared for, with medication provided and professional contact maintained. This expression of Māori culture elevates the post-contact *urban* sociological understandings that Indigenous communities have developed.
16. As Māori institutions such as whānau, marae and kura are promoted as disaster response nodes, it should be noted that for many Tangata Whaiora cannot or will not access these fundamental cultural institutions. They will remain reliant on Kaupapa Māori organisations and the networks these organisations have with each other and mainstream organisations in proactively drawing their clients into support networks. Assuming that traditional Māori cultural institutions are fundamental to the 'Māori response' risks ignoring the diversity of Māori, a significant number of whom are physically and/or socially distant from these networks.
17. Observed Māori support was comprised of immediate, physically embodied, engagement *and* physically distant but socio-culturally proximate institutions that may not feature in the networks of Tangata Whaiora (though this can be remedied) but which operate at a higher level as a fitful but pregnant resource.
18. The major risk identified from this research is that the conceptual and organisational isolation that Tangata Whaiora and others experience in understanding and readying for other disasters compounds whatever vulnerability they may already have due to their economic marginalisation, ethnicity, and state of mental health. Simply put, Tangata Whaiora are not in a position to strategise, individually or collectively, and therefore cannot determine their own disaster risk reduction approaches but must instead rely on wider societal acknowledgment of their particular needs.

2. Introduction

‘Tangata whaiora’ translates as ‘people seeking health’. The term is sourced from Te Ao Māori where it refers to people with experience of mental illness (Russell, 2006, pp. viii, fn 4) and is increasingly a ‘preferred term’ for consumers of mental health services from a consumer perspective (Moeke-Maxwell, Wells, & Mellisop, 2008). Support for Tangata Whaiora in Aotearoa New Zealand is framed by historical and contemporary stigma and a lack of resourcing (Dawson & Gledhill, 2013), and for Māori experiencing mental illness there is the wider issue of racism (Dow, 1999; Elder & Tapsell, 2013; Kingi, 2011). A disaster imposes greater demands on the mental health of those affected and the organisations and networks whose role includes support and care for the mentally ill (Neria, Galea, & Norris, 2009). How these individuals and their families navigate a post-disaster landscape provides an unfortunate but unique opportunity to analyse how this support responds to massive unforeseen disruption.

The origins of this research began in the early hours of September 4th 2010 when Ōtautahi/Christchurch was struck by a 7.1 magnitude (M) earthquake. The city went on to experience a series of earthquakes that continued through 2011 and 2012; minor aftershocks were still being felt in 2014. The most serious event occurred on February 22nd 2011, a shallow 6.1M earthquake that killed 185 people and radically altered the city’s physical and social landscape. Much of the CBD and large areas of the city, particularly the Eastern and seaside suburbs, were devastated if not by the initial shocks then by significant displacement and targeted demolition. ‘People seeking health’ became an apt term for many residents in the post-disaster landscape.

Ōtautahi is the second largest city in Aotearoa New Zealand with a population of around 350,000. Just over 7% of this population identifies as Māori, a group that is statistically younger and poorer than average for the city. Many Māori are, or were, resident in suburbs which were particularly hard hit by the disaster. Understanding how this disaster has impacted on Māori is vital to addressing Māori concerns in the city during the recovery as well as informing future disaster management strategies for all of Aotearoa New Zealand. Insights will also be relevant to Indigenous Peoples around the world whose communities are increasingly urbanised and for non-Indigenous communities who, for whatever reason, have to fight for recognition, respect, and resources.

3. Background to the disaster

In a country known for its seismic activity, Ōtautahi/Christchurch was never considered by its citizens or political leaders to be at risk from earthquakes¹. The earthquake of September 2010 resulted in no deaths but caused significant damage to many buildings (Stevenson et al., 2011). The smaller but more damaging event in February 2011 that killed 185 people and caused widespread destruction (Canterbury Earthquakes Royal Commission, 2011; Christchurch City Council, 2012; Tasiopoulou, Smyrou, Bal, Gazetas, & Vintzileou, 2011) was followed by several major and thousands of smaller aftershocks, with over 50 stronger than M5.0 (Bannister & Gledhill, 2012). Figure 1 shows the extended seismic activity experienced by residents that led to ongoing anxiety and distress as well as delaying recovery efforts. The rebuild is estimated to cost 10% of NZ’s GDP (Parker & Steenkamp, 2012). Within the global insurance sector the disaster was the third most costly event of 2011 with total costs of up to \$NZ30 billion of which approximately \$20 billion are insured (Munich Re, 2012).

¹ This is not to say that experts in various disciplines were ignorant of the risks.

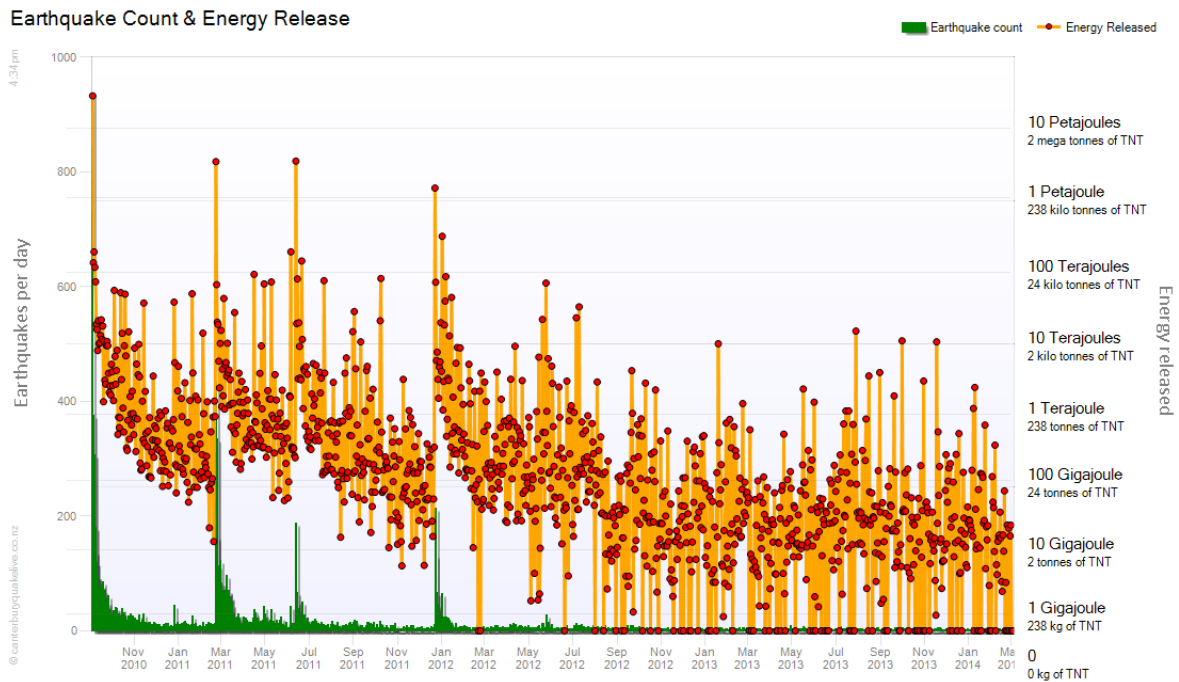


Figure 1: Energy released over time from the initial event
 (Source: <http://www.canterburyquakelive.co.nz/EnergyChart/>)

3.1 The Four R's of Disaster: reduction, readiness, response and recovery

The Ministry of Civil Defence and Emergency Management (2008) categorises disasters into four phases: reduction, readiness, response, and recovery. The reduction phase seeks to identify and mitigate long term risks to life and property while the readiness phase focuses on the preparation of operational systems and capabilities. In many respects these two phases ended with the September 4th event as the February 22nd earthquake framed the intervening period as contributing to 'reduction and readiness' as many organisations activated their response and recovery procedures (Heather, 2011).

The response includes all actions taken immediately before, during or directly after a disaster event, essentially seeking to save lives and protect property. The response to a significant disaster will involve the mobilisation of extensive national and often international first responders such as Urban Search and Rescue (USAR) whose international deployment is facilitated by the United Nations. USAR teams from Australia, China, Japan, Singapore, Taiwan, UK and USA worked alongside their New Zealand colleagues.

The recovery period consists of the regeneration of communities. This phase has proven highly contentious in the city with long delays (exacerbated by the extended sequence of aftershocks) in insurance payouts, confusion and mismanagement by the Earthquake Commission (EQC) and issues with building contractors (Miles, 2012; Stock, 2014; Stylianou, 2014; Wood, 2012).

There is no clear distinction between each of these phases, indeed one of the conclusions of this report is the overlapping nature of each phase, at different but interacting scales, is further complicated by previous *and future* disasters. The ongoing response and recovery of Indigenous Peoples to the disaster of colonisation and consequent marginalisation and oppression constrains their abilities as individuals and collectives to, among other things, fully

engage in reduction and readiness strategies which are a fundamental component of disaster risk reduction (DRR; see Lambert, Athayde, Yin, Baudoin, & Okorie, 2014).

3.1.1 The Fifth 'R': Resilience

The term 'resilience' very quickly became a common trope in describing the city's post-disaster performance. While the literature on resilience is eclectic and growing, three key disciplines have contributed to the resilience research relevant to this review: psychology, ecology and the social sciences. Psychology studies from the 1940s examined individual competencies to explain how people, especially children, survived and even flourished despite difficult circumstances. This approach saw resilience interpreted as a personality trait (de Bruijne, Boin, & van Eeten, 2010). A second focus was to examine external factors such as the family and broader social contexts, interpreting resilience as a process (Ungar, 2012). Critics of both approaches noted the imprecise use of the term, arguing that resilience must be a 'multi-dimensional construct' and while individuals may be able to cope with some adversity, this does not necessarily translate into resilient families, communities or society (de Bruijne et al., 2010). Lerner (2006) and others have noted much of this research is grounded in a Western psychological imperative of the determined individual. Further, being resilient to some experiences does not mean an individual or collective is resilient to others: no individual or group can be completely resilient.

Ecologists incorporated concepts of resilience in the early 1970s to better understand and articulate sustainable development (Holling, 1973). Resilience in this context generally refers to the amount of change an ecosystem can undergo while retaining the same functions and structure. Following the acceptance of significant interconnections between society and ecosystems, researchers began to refer to socio-ecological resilience and the ability of these socio-ecosystems to build and increase the capacity for learning and adaptation towards greater resilience (Berkes, Colding, & Folke, 2003; Cote & Nightingale, 2012).

Several disciplines within the social sciences have integrated resilience including organisational and management sciences, safety sciences, and disaster and crisis management (Beckett, Wilkinson, & Potangaroa, 2010; Comfort, Boin, & Demchak, 2010). Of interest to this review is research into cultural resilience (Lambert, 2008; Nightingale, 2003; Tipa & Teirney, 2003; Trospen, 2002), often in tandem with ecological contexts of sustainability noted above (Berkes et al., 2003; Turner, Davidson-Hunt, & O'Flaherty, 2003).

A recent Special Issue of MAI Journal published six articles on Māori and Indigenous concepts and case studies of resilience. Penehira, Green, Smith, & Aspin (2014, p. 98) define resilience in their study of a Māori Indigenous political response to the resilience discourse as:

"...the means by which indigenous people make use of individual and community strengths to protect themselves against adverse health outcomes."

Their article is an important challenge to the positive connotation of 'resilience', a point also made by Mackinnon and Derickson (2013) who note the term has 'migrated' to the social sciences from the physical sciences; 'resilience' has become the 'pervasive idiom of global governance', being 'abstract and malleable enough to encompass the worlds of high finance, defence and urban infrastructure' (Walker and Cooper 2011: 144, in Mackinnon and Derickson 2013: 254).

A key distinction can be detected in the literature, and it is relevant to the concept of ‘resilience’ in the Ōtautahi disaster. One interpretation sees any evidence of survival and struggle through the disaster as resilience; this frames how the media, politicians and some academics used and continue to use the term. The second interpretation seeks evidence of the *rebounding* of systems post-disaster. I define the first interpretation as endurance and the second as resilience. Figure 2 outlines how we have conceived resilience in our examination of post-disaster support networks.

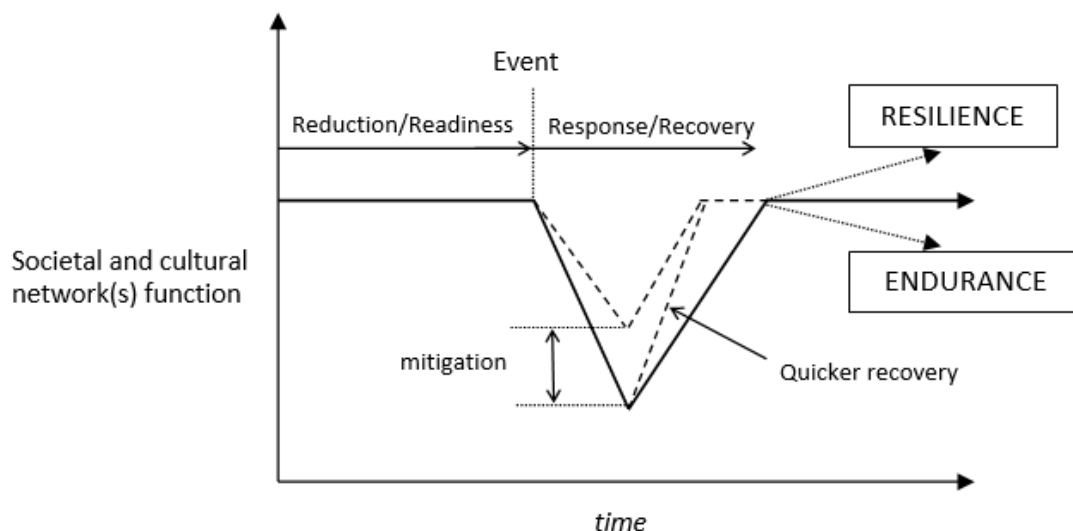


Figure 2: Social resilience model (after McDaniels, Chang, Cole, Mikawoz, & Longstaff, 2008)

Penehira et al., and Mackinnon and Derickson and others (see, e.g., Harvey, 2005) argue that neoliberalism needs resilient spaces to function and that fetishizing ‘resilience’ in this context risks embedding the marginalisation of oppressed peoples. While this report does not directly investigate this aspect of resilience, it remains an important challenge to researchers in this area.

3.1.2 Response to the Ōtautahi earthquakes

For the February earthquake, national and international aid was quick to arrive (Lambert & Mark-Shadbolt, 2012). But a fundamental reality of any disaster is that ‘the first line of defence [is] the local community’ (Gill, Steger, & Slater, 2013, p. 6). Much of this response is undocumented (although the widespread use of social media led to considerable if diffuse digital archives). Some of this ‘undocumented local solidarity’ (*ibid.*) is recorded here (See also Lambert, Wilkie, & Mark-Shadbolt, 2014 for extended quotes).

The media and public focused on individual stories of heroism and tragedy (although people outside the city often received better news coverage due to the loss of electricity in large areas of Christchurch). The first interview of our Lincoln University projects was of a Ngāi Tahu USAR member involved in an amputation to save a person trapped in a large collapsed building.

You do realise that it does have an effect on you in your head, at some level, and that effects different people in different ways. Some with short tempers, some with sleep deprivation, and some with just exhaustion... [EQ1, Tane Māori, 36-45, First responder]

While rational and irrational criticisms have been made at the initial response (NZ Fire Service, 2012; Pilling, 2012) the scale of the disaster meant that despite the rapid and generally professional response, the city's population was subject to considerable danger, discomfort and disruption and significant movements of people took place over the following months. Local unemployment was up 17% in the four months post-February (Wood & Chapman, 2011), school rolls dropped by up to 20%, domestic violence, gambling, drinking, stress and insecurity increased (NZPA, 2011; Stylianou, 2011).

3.2.3 Recovery from the Ōtautahi disaster

At the time of writing, controversies over the recovery continued to be debated in the local media as a shortfall of \$500 million for the rebuild highlighted difference between the city council and government (Cairns, 2014a). Funds for roading repairs in the city are now insufficient (Cairns, 2014b), and significant flooding in some areas of the city on March 5-6 2014 revealed ongoing vulnerabilities as a result of the seismic activity (Ensor & Stylianou, 2014). Concerns had been raised previously over land subsidence (Hart, 2012) and many homeowners are frustrated by insurance and rebuild issues three and a half years after the initial damage (see Miles, 2012).

Other disasters provide interesting comparisons with how Ōtautahi might fare over the next few years. The areas impacted by Hurricane Karina (and Hurricane Rita which followed a month later) was over 230,000 km² and resulted in one of the largest population movements in US history (Brunsmas, Overfelt, & Picou, 2010). The rebuild of New Orleans is not necessarily engineering future resilience into the city's infrastructure to the level of hazard represented by Katrina (Blakely, 2011) which is predicted to increase (in likelihood and severity) due to climate change (Steffen & Hughes, 2013). Wider societal conflicts such as racism can both exacerbate the vulnerability of some communities to environmental hazards and be further intensified post-disaster (Fothergill, Maestas, & Darlington, 1999). Professor Ed Blakely, employed to oversee the initial recovery period of New Orleans, made controversial comments on the socio-political context for the city:

"Now, the white community, there's blood in the water, and they can recapture the political apparatus and kind of put their foot back on black people's throats." (Cited in Hammer, 2009)

While this report does not examine the recovery of Ōtautahi in any depth, it will be many years before the city can be considered 'over' the earthquakes of 2010-2012. However, it is argued that the future can be understood by a very careful examination of the present. However, as Ulrich Beck (2006) comments, the 'irony of risk' is that 'the experience of the past encourages anticipation of the wrong kind of risk, the one we believe we can calculate and control whereas the disaster arises from what we do not know and cannot calculate.

3.2 Disasters and Mental Health

Research into the impacts on mental health from disasters emerged from studies on the impacts of war (Raphael & Maguire, 2009) with researchers identifying the 'disaster syndrome', a period of time immediately following a disaster event when a proportion of an affected community are dazed and confused (Tyhurst, 1950). These comments are from an elderly Tangata Whaiora participant in our research:

I thought someone had hit me from behind, I actually thought I was getting robbed! I'd never felt an earthquake before... I didn't know they do that to you! And I thought 'what the...'?! The only thing that is close to me that I've felt anything like that is when I've been bashed... And I thought 'someone is in the house, what's going on?' And next minute I was ARGHHH and the TV went flying and all my stuff in the kitchen just went flying... And oh man, there was screaming out in the streets and water was coming up out of the pipes, and this is 4 am in the morning, and our lamp post....all beat up like that and it was up out of the ground. Oh mate, it was terrible, you couldn't walk anywhere, you go to do something and you're just getting knocked over from aftershocks, aftershocks were coming like that one after the other and we're just going bang and bang[NPM14, Tane Māori, 56-65, Tangata Whaiora]

A concern often articulated in the aftermath of any disaster is the fear of looting and mass panic. While the New Zealand press did carry some sensationalised stories along these lines, the unlikelihood of mass panic post-event was noted by Quarantelli (1954) and many of our participants (including the individual quoted above) across all of our research spoke of the sense of community that quickly established.

The only thing that saved everybody, bro do you know what it was? Just about every second house down, everybody was out sizzles.....sausages and buns and bread and all sorts and giving it out to people bro, and big hot plates of soup and it was amazing mate, all the way down to Brighton. [NPM14, Tane Māori, 56-65, Tangata Whaiora]

In the 1960s, social phenomenon were increasingly examined for their role in post-disaster mental health. Some works reinforced the stigmatisation of victims, positing victimhood identities and helplessness, while others presented overly positive interpretations such that any mental ill health consequences caused by disasters 'seemed to be denied' (Raphael & Maguire, 2009, p. 8). In Ōtautahi, a campaign of 'pledging' a commitment to stay in the city was initiated just four weeks after the main earthquake and six months after the initial event (Cairns, 2011). In the words of one of the organisers, "Everyone who has been here during the last six months understands the fear but what does running achieve and where do you run to?" However, given the delayed rebuild/recovery operation and the ongoing disruption in Ōtautahi, staying put in a post-disaster landscape requires considerable support which is neither guaranteed nor stable.

The 1970s and 80s saw a greater focus on the impacts on mental health of disasters but although sociologists identified the influences of societal factors on individual outcomes,

these contributions were not often incorporated into the dominant mental health approaches (Raphael & Maguire, 2009). Cultural differences were also rarely addressed despite developing countries experiencing more frequent and more severe disasters and the exacerbation of underlying individual and community vulnerabilities by disasters (Raphael & Maguire, 2009).

The infamous terrorist attacks on America challenged personal and state security perspectives and emphasised the complex challenges to response systems in considering diverse threats. Kathleen Tierney (2014) has written an important work (re)emphasising that both risk and resilience originate within the 'social order itself'. In the aftermath of '9/11', American 'homeland security' was elevated by some political and administrative leaders beyond the legal and constitutional limits of that society (Feinstein, 2014). As Tierney points out (*ibid.*, p. 56, citing sociologist W I Thomas, 1928) 'situations that are defined as real are real in their consequences'; the real world effects of US constructions of risk have resulted in presidential directives, laws and policies that encompass Aotearoa New Zealand and have triggered two major military conflicts resulting in the deaths of tens of thousands of innocent people in other countries.

This raises an interesting concept of activities that expand risk beyond the spatial and societal contexts from which they are driven. Known as JAR-ing actions – activities that jeopardise assets that are remote –this encompasses such things as investment decisions by multinational corporations that off-load risk in other societies (particularly poor, migrant, and/or Indigenous communities) or so-called 'Developing' countries nations. Industrial activities implicated in climate change is perhaps the most pressing and universal example of JAR-ing. Charles Perrow uses the term 'executive malfeasance' to describe the failures evident in the 2008 global financial crisis and the 2010 Gulf of Mexico oil spill which he argues are attributable to ideologically and/or profit driven managers and leaders, a feature of the Fukushima nuclear power plant disaster 'caused' by the Tohoku earthquake just weeks after Ōtautahi's February 2011 event (Willacy, 2013).

The 'geography of care' (Conradson, 2003) provides a useful conceptual framework by moving away from just analysing spatial characteristics of 'therapeutic landscapes' (Gesler, 1992). Parr and Philo (2003) describe mental health care in the Scottish Highlands and identify physically distant but socially proximate connections that enable better care for traditionally stoic individuals.

*This social proximity means that neighbours five miles apart might know intimately each other's personal histories and biographies, family relationships and so on. The genealogy of an individual and their family is something collectively known, placed, remembered and narrated by other community members, especially those who have links with the area and residents in question. This may have particular implications for people who have experienced emotional and psychological disruption (*ibid.*, p. 475).*

This insight is also appropriate for examining Indigenous psycho-social support. Kirmayer et al. (2012) present four North American case studies of Indigenous mental health through disasters and by 'a focus on resilience [shift] attention from vulnerability and pathology toward the analysis of resources, strengths and positive outcomes' (*ibid.*, p. 399). The authors argue (p. 409):

Indigenous concepts of resilience are grounded in cultural values that have persisted despite profound changes in the nature of community life.

In this comment we see the resourcing of well-being that originates in culture and the wider conflicts that stem from historical injustices and trauma. Myriad smaller events are announced daily in the world's media and are no less distressing to those individuals and communities that are affected. All such events – the large-scale historical and the small-scale quotidian – require a broader research catchment for ideas and methods, a challenge this research seeks to help meet.

3.3 Māori Mental Health

“...there is also evidence that, although loss of life is less dramatic, the greatest threat to good health for Māori is now poor mental health.

Mason Durie (1999, p. 6)

Mental health in Aotearoa New Zealand has been a difficult and controversial area in which societal challenges and family tragedies are regularly exposed, often with sensationalised headlines that frame Tangata Whaiora as presenting ‘dangerousness’ and ‘criminality’ to others (Coverdale, Nairn, & Claasen, 2002). It is an area in which health and legal policies often converge, not least with significant reforms that came in with the 1992 Mental Health Act which sought to address two significant requirements of contemporary mental health law: respect for human rights², and the need to reconfigure mental health services in a deinstitutionalised model of mental health care (Dawson, 2013).³

Although mental disorders certainly existed prior to European contact, the increase in Māori mental health issues seems to be a relatively recent phenomenon (Kingi, 2011). A major survey of national mental health in 2006 found Māori with a higher prevalence of mental disorders than the remainder of the population and significantly less likely to make a mental health visit. Given these statistics, the relevance to Māori of modern mental health law and practice cannot be overstated (Elder & Tapsell, 2013).

The assertion by Māori of Māori philosophies and epistemologies has led to major advances in the modelling of health and well-being. One of the best known models is Mason Durie's Whare Tapa Whā in which good health is acknowledged as the balanced interactions of four components of an individual's life. The Kaupapa Māori and Pacific NGO Collective (to which TATO belong) use this model (2013):

- Te Taha Hinengaro Inseparability of mental health from the mind and body.
- Te Taha Whānau Extended family, wider social systems and support.
- Te Taha Tinana Physical wellbeing.
- Te Taha Wairua Spirituality.

² These obligations have been emphasised by NZ's ratification of the 2006 Convention on the Rights of Person with Disabilities which extends to those with psychosocial disabilities (Dawson, 2013, p. 18).

³ The deinstitutionalisation of mental health care sits within a broader socio-political restructuring that began in the late 1980s and implemented massive changes to this country's society through ongoing reforms along neo-liberal interpretations of the allocation of resources (Jessop, 2000; Kelsey, 1995).

Rose Pere’s Te Wheke model has also contributed to challenging standard models of health (Pere, n.d.). The head of the octopus represents whānau, the eyes of the octopus as waiora (that is, total wellbeing for the individual and whanau) and each of the tentacles represents a specific health dimension:

- Wairuatanga – spirituality
- Hinengaro – the mind
- Taha tinana – physical wellbeing
- Whānaungatanga - extended family
- Mauri – life force in people and objects
- Mana ake – unique identity of individuals and family
- Hā a koro ma, a kui ma – breath of life from forbearers
- Whatumanawa – the open and healthy expression of emotion

The dimensions are of course intertwined, representing the close relationship of each of the components to an individual’s well-being. Various expressions of this models were expressed formally and informally by participants throughout this research. As noted in the introduction, ‘Tangata Whaiora’ translates as ‘people seeking health’ and is becoming a more common and less pejorative term for mental health clients through the wider acceptance of such models of Indigenous well-being.

3.4 Māori in Ōtautahi

Ōtautahi contains a reasonably large urban population of Māori, including the majority of Māori in the Canterbury region (Table 1) and across the South Island.

| Area | Total | | | Māori | | |
|----------------------|---------|---------|---------|--------|--------|--------|
| | 2001 | 2006 | 2013 | 2001 | 2006 | 2013 |
| Hurunui District | 9,885 | 10,476 | 11,529 | 516 | 594 | 804 |
| Waimakariri District | 36,903 | 42,834 | 49,989 | 2,430 | 2,856 | 3,567 |
| Christchurch City | 324,057 | 348,435 | 341,469 | 22,533 | 25,725 | 27,765 |
| Selwyn District | 27,312 | 33,669 | 44,595 | 1,572 | 2,010 | 3,036 |
| Ashburton District | 25,443 | 27,372 | 31,041 | 1,179 | 1,641 | 2,193 |

Table 1: Total residents and Māori in Christchurch City and neighbouring districts. Source: Statistics New Zealand (2012a, 2013).

For a better appreciation of the affects of the disaster it is perhaps more useful to understand where Māori whānau and communities live. Table 2 lists those suburbs with highest percentages of Māori residents in Christchurch City and neighbouring Waimakariri District. The Eastern suburbs, Kaiapoi and Lyttleton have significant Māori communities and were severely impacted by the earthquakes with many homes and streets affected several times by

liquefaction⁴ as well as damage to important infrastructure and the loss of many community facilities.

| Town / Suburb | Total Population | Māori Population | Māori % of Total Population | Per cent of Māori < 20 years | Social Dep. Index (2006) |
|--------------------|------------------|------------------|-----------------------------|------------------------------|--------------------------|
| Aranui | 4,671 | 936 | 21.3% | 51.1% | 10 |
| Phillipstown | 3,489 | 546 | 16.7% | 39.9% | 10 |
| Linwood North | 2,547 | 405 | 16.4% | 48.5% | 9 |
| Bromley | 2,976 | 468 | 16.3% | 49.0% | 9 |
| Linwood East | 1,890 | 279 | 15.3% | 50.0% | 9 |
| Bexley | 4,134 | 603 | 15.1% | 50.5% | 9 |
| Chisnall (Wainoni) | 2,859 | 399 | 14.6% | 43.0% | 8 |
| Waltham | 1,071 | 144 | 14.4% | 43.5% | 10 |
| Woolston South | 2,394 | 330 | 14.4% | 43.2% | 9 |
| Woolston West | 3,339 | 426 | 13.2% | 46.9% | 9 |
| Avonside | 3,240 | 387 | 12.2% | 43.8% | 9 |
| Linwood | 4,587 | 492 | 11.7% | 35.4% | 10 |
| Kaiapoi South | 2,199 | 237 | 11.2% | 44.3% | 7 |
| Kaiapoi North | 4,143 | 447 | 11.0% | 49.7% | 6 |
| Richmond North | 2,937 | 297 | 10.4% | 53.5% | 5 |
| Shirley West | 3,639 | 357 | 10.3% | 47.9% | 8 |
| North Beach | 4,680 | 456 | 10.1% | 46.1% | 7 |
| Richmond South | 2,469 | 237 | 10.0% | 36.7% | 9 |
| Lyttleton | 3,072 | 279 | 9.2% | 36.3% | 4 |

Table 2: Suburbs and towns with significant Māori populations that experienced severe damage. Source: Statistics New Zealand (2012b) and Ministry of Health (2012b).

Neighbourhoods with significant Māori populations are generally younger and poorer compared to the rest of the population: the median age in Christchurch City was 36.4 years and median income \$23,400; the median age for Māori was 22.5 years and median income \$22,000. Of more relevance is the location of the most damaged housing and land, the 'red zone', shown in Figure 3.

⁴ Liquefaction is the loss of strength, stiffness and stability of soil through the shaking and rapid loading that occurs during an earthquake. This means during an earthquake these soils will behave more like a liquid than a solid which can result in considerable damage to land and structures.

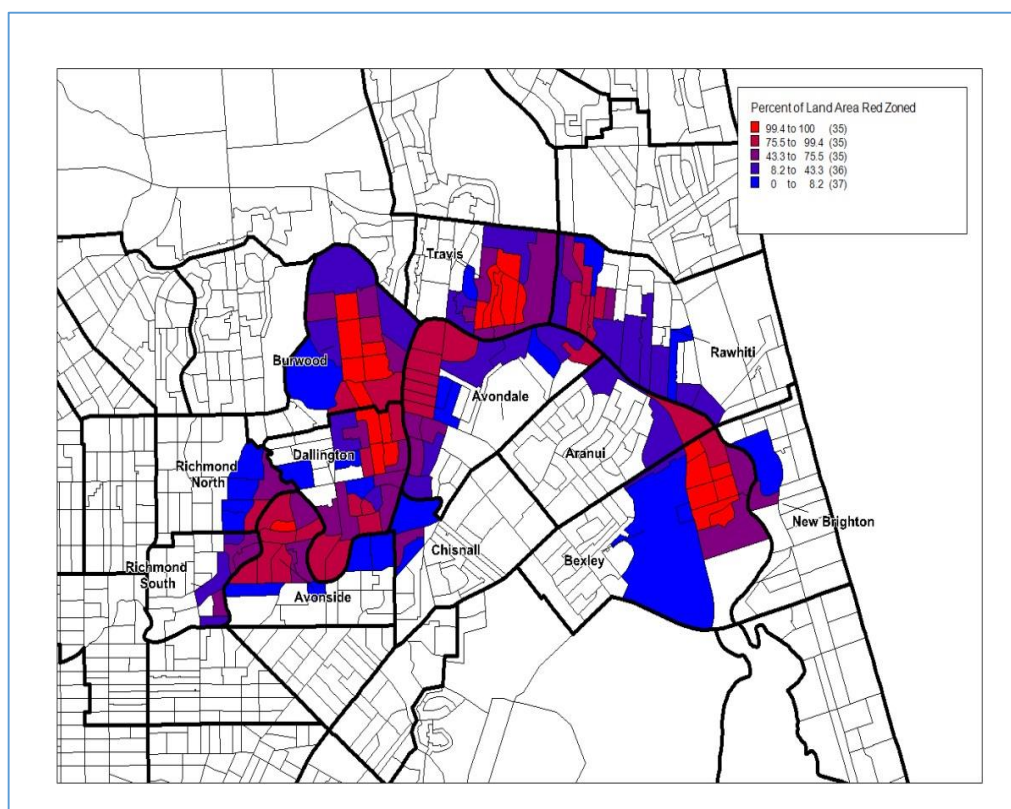


Figure 3: Percentage of land first 'red-zoned'. Significant numbers of Māori reside, or resided, in these affect suburbs. Source: Newell (2012)

3.4.1 Tangata Whaiora in Ōtautahi

Psycho-social support in Ōtautahi was clearly going to be challenging post-disaster. Data from the Māori and Pacific NGO Mental Health and Addictions Collective gives an indication of the demand for services. Specialist mental health services recorded 77,472 presentations in 2012 (6,500 per month) of which 8,090 were Māori comprising 10.5% with between 630 and 700 individual Māori a month (Kaupapa Maori and Pacific NGO Collective, 2013, p. 1).⁵ The most demanded services were provided by the Community Methadone Programme, Youth Specialty, Watch house, Child and Family Speciality, Psychiatric Emergency Services, and East Mental Health team. The Collective found a higher prevalence of disorder for Māori (29.5%) and Pacific (24.4%) people than others (19.3%), 'indicating that Māori and Pacific people have a greater burden due to mental health problems' (p. 2), they attribute much of this to the relative youthfulness and socio-economic disadvantage of these populations. However, Pacific and to a lesser extent Māori are less likely to seek mental health services; for those with a disorder in the 12 months preceding the report, 25.4% of Pasifika, 32.5% of Māori and 41.1% of others made a mental health visit (*ibid.*). These disparities are echoed by successive surveys of wellbeing in the city undertaken by the Canterbury Earthquake Recovery Authority (CERA), discussed in Section 3.3.

While raw statistical data and maps provide important contexts for understanding how Māori have been affected by this disaster, we seek more intimate knowledge. One of our participants, a *koroua* who worked for Barnardos, made a number of very pertinent comments in emails before we actually met. I reproduce one of them in full below:

⁵ Pacific presentations averaged 80-110, 1-2% of the total.

On my way home to Woolston the other night (eastern suburb), I noticed a photographer taking snaps of the old railway [station] clock tower/Hoyts cinema complex. I got nosy nā reira, I stopped for a chat. An Asian gentleman turned to me as I approached, we exchanged pleasantries and we chatted. As I was uncertain of his origins, I asked. He was Japanese on a bit of a trip to see and record for himself, impressions of quake stricken Chch. We spoke of the big shake and tsunami in his home country, he wasn't there when it happened however, some of his family were, about 100 - 120 miles away.

Should you go past the railway clock tower on Moorhouse Ave, you will notice an outer covering of plywood sort of half way up ... I viewed some of this man's photos. He had snapshots before the plywood went up and overtime had taken about 3 - 4 snaps since. In each snap, he pointed out how the loss of masonry was getting worse. He wants to be here when the tower finally tumbles. In his words or as I understood him to mean, he wants to record "the death of time."

Immediately I thought of the great lengths we go to save supposed treasures and the people simply wait in line, passing by quietly, covered under a layer of red tape, bureaucracy, and ego, I guess like the falling clock; do we live or do we die?

It is a real shame that your work has a deadline heoi anō, a final thought. Those who lived Impoverished before the sept 2010 quake aren't as easily phased by the present set up. Quote: 'we have been down for so long, this is a step up, this is an up for us!'

Simon, it will get worse i.e., we are allowing those who were on the breadline to fall and replace and or join those who were poverty stricken and, a high percentage of those have whakapapa!

Whare Tamanui

This message painted a realistic if gloomy assessment of the situation in the city in the first year after what was the biggest disaster to affect Aotearoa/New Zealand in three generations. The message was both an encouragement and a warning and, as it has turned out, remarkably prescient.

4. Background to this project

In 2012 I was approached by Melanie Mark-Shadbolt, a Lincoln University colleague, who was a board member of Te Awa o te Ora (TATO). TATO is a Kaūpapa Māori provider of mental health services in Ōtautahi and had been commended by the Ministry of Health for their response to the earthquakes. Melanie and the other board members wanted to collaborate on a funding application to Ngā Pae o te Māramatanga to examine what enabled that response: what could be learnt from Te Awa's experience to help other organisations prepare and respond to future disasters? I prepared an application which was ultimately successful, a year after the February earthquake and research began - somewhat fitfully - in March of 2012.

My first concern was that even, though aftershocks were continuing, we had missed that dramatic window of opportunity to be amidst the ruins, recording peoples' experiences and 'measuring' in some way their resilience. What was soon obvious was that people were still experiencing the disaster (e.g., Gluckman, 2012; Wright, 2012). For some communities, such as those with mental health issues, getting through each day was physically and emotionally draining exacerbated by such things as the costs of rental housing for mental health clients increasing significantly in the post-disaster landscape as the availability of housing declined through damage and demolition (Stylianou, 2012c).

4.1 Previous Projects

This research followed on from several earlier projects that examined how the earthquakes had affected Māori in Canterbury. The first was conducted in the first weeks following the 22/2/11 event and was based on 10 semi-structured interviews with Māori first responders, managers of Māori providers and marae, *kai ako* in Kura Kaūpapa or individuals otherwise engaged with *Te Ao Māori* through the disaster (Lambert, 2012b). This was expanded in a contract funded by Te Puni Kokiri that included Māori who had left the city because of the earthquakes, leading to a total of 25 participants (Excerpts from these first two projects are coded EQ; Lambert, Mark-Shadbolt, Ataria, & Black, 2012). These initial projects found that Māori cultural approaches (especially the practices of *manaakitanga* and *whanaungatanga*) and institutions (particularly whānau, kura, marae, iwi, and pan-iwi institutions such as the Māori wardens) were fundamental to the Māori response but were also - logically and spontaneously - extended to help non-Māori (See also Paton, Johnston, Mamula-Seadon, & Kenney, 2014). Some of the comments recorded in those initial interviews are worth repeating.

I wrapped her up and said a little prayer to myself. 'If this is it, please protect my girl.' [September 4th, 2010 earthquake; EQ2, Tane Māori, 36-45]

Me personally? Oh I didn't have time to be affected by the earthquake ... on the day we were in the CBD, I was more worried about my entire team dying in front of my eyes actually. [February 22nd, 2011 event; EQ5, Wahine Māori, 36-45]

When I evacuated the office, my work colleague who was pregnant needed help... As I was walking past Joe's Garage, I could hear screaming in there. I helped this one lady out, I ended up carrying her.

Both her legs were crushed. [February 22nd, 2011; EQ2, Tane Māori, 36-45]

Results also showed that while ‘resilience’ had become a commonplace term within the city, the Māori experience in the immediate aftermath of the disaster was best described as *endurance*; the ‘bounce back’ that underpins the concept of resilience was not yet in evidence (Lambert, 2014b). This should not be a surprising conclusion for the early stages of recovery, a process that will take many years to complete.



Figure 4: 185 White Chairs. A memorial to those who lost their lives by artist Peter Manjedie

A subsequent project was an email survey of Māori and Pākehā who had experiences of the earthquakes. (Excerpts from this project are used in this report and are coded SM; Lambert, 2012a). Māori respondents were more likely to have lost employment or hours and/or suffered poor health post-disaster; they were also more likely to have volunteered for earthquake work. Māori were also more likely to have lost sewage disposal and used a port-a-loo, echoing the spatial distribution of impacts in the Eastern suburbs (see Figure 5 and Figure 6). Many complaints were made over the unequal distribution of port-o-loos with many in the east arguing they received less of these facilities than other wealthier and less affected suburbs, complaints supported by research (Potangaroa, Wilkinson, Zare, & Steinfort, 2011).

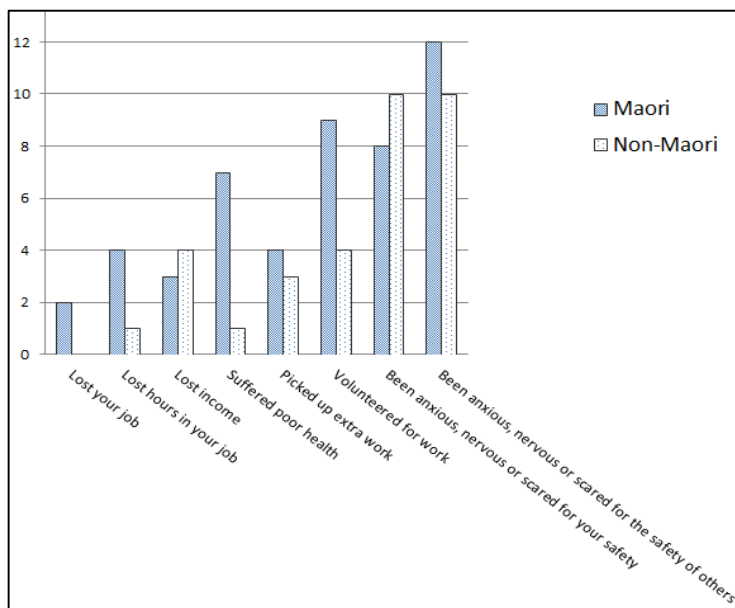


Figure 5: Personal impacts from the earthquakes

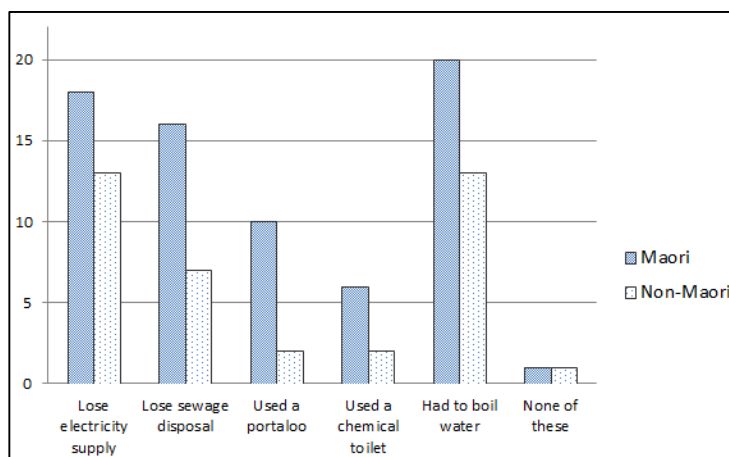


Figure 6: Household impacts from the earthquakes

Data from this survey was analysed using a set-theoretic method (fsQCA; see Ragin, 2008) that enabled a small n case-study approach in identifying various pathways to the outcome (in this case, resilience) and accepts causation is multifactorial. Four main configurations or pathways to resilience (Lambert, 2014b), grouped here according to whether respondents moved because of the disaster or stayed in the city. The most significant pathway was:

1. Being a member of a large whānau, having no or minimal damage to house and contents, earning high personal income and not moving away from the city.

Three other pathways are evident:

2. Significant damage to house and contents but no or minimal personal impacts, earning a high personal income and not moving away from the city;
3. No or minimal damage to house and contents, significant personal impacts, low personal income and moving away from the city; or

4. Being in a small whānau, no or minimal damage to house and contents but experiencing significant personal impacts and moving away from the city.

These results emphasised the importance (although not the necessity) of whānau, economic security, and mobility, conditions which will be examined with regards to Tangata Whaiora. Movements of Māori post-disaster will be discussed briefly in the following section.

4.2 Short term movements

Many Ōtautahi residents fled the city in the days following the February event, perhaps 70,000 or one fifth of the city’s population (Binning, 2011). By the end of the 2011, research showed Māori and young families were disproportionately among those who had become earthquake ‘refugees’ (Newell, 2012; Stylianou, 2012b). The most robust and useful indicator for measuring the effect of the Canterbury earthquakes on the movements of Māori is the change in school enrolments between 2010 and 2011.⁶ Table 3 shows major differences in estimated net migration by age and ethnic group for the year to June 2011. (Anecdotally some tamariki may have been pulled from schools and kept at home, at least in the short term.)

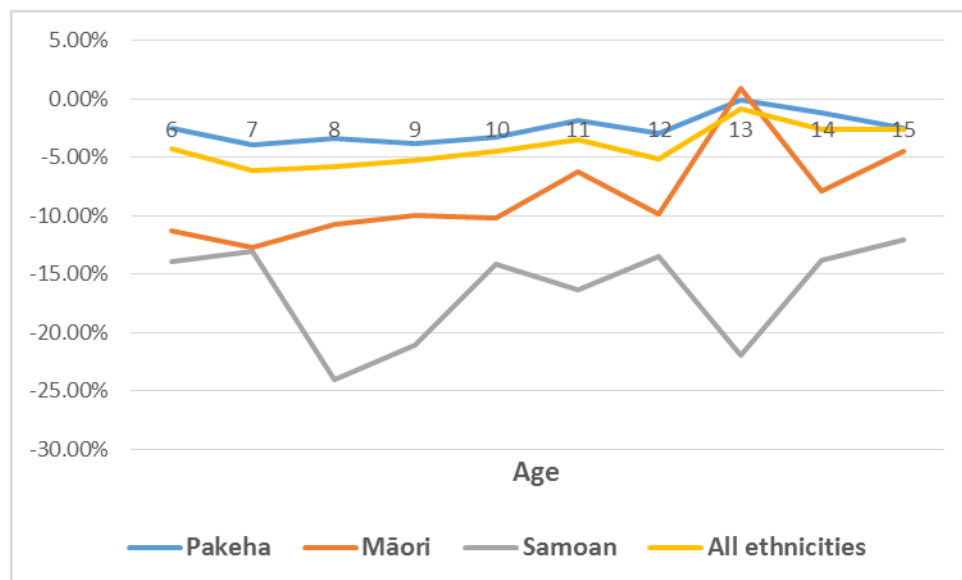


Table 3: Estimated Greater Christchurch net migration for children, by age for selected ethnicities, 2010-2011. Source: Newell (2012).

The general movement of Māori children appears to have been northwards, with Ashburton district (an area not especially affected by the disaster) also showing a decline in Māori enrolments (Figure 7).

⁶ This is close to Statistics NZ net migration rate assumptions for the year to June 2011 of 9.6% for the 5 to 9 year cohort and 5.8% and for the 10-14 year age cohort.

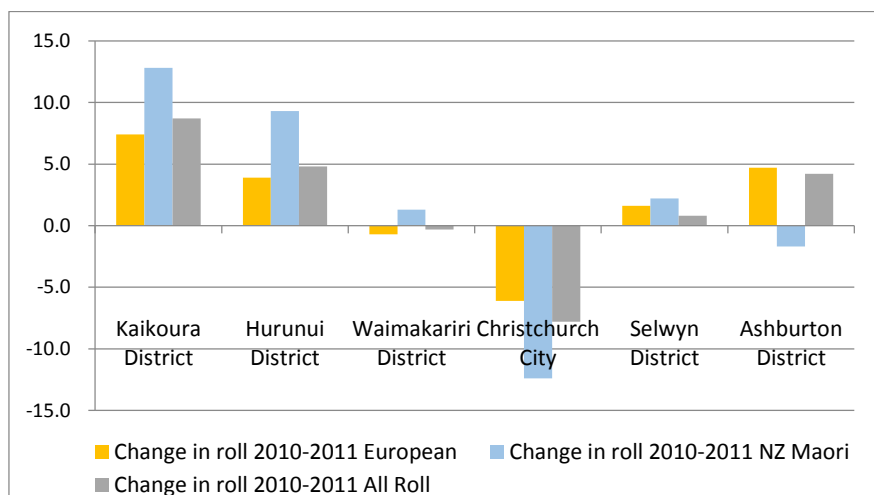


Figure 7: Per cent change in the number enrolled aged 5 to 10 years by ward 2010-2011, and by ethnicity (Source: Newell 2012).

Between 2010 and 2011 there was a net loss of 439 (12.4%) Māori enrolments from Christchurch City. The largest decrease from Christchurch City was in the Burwood-Pegasus ward which saw a net loss of 168 Māori enrolments (21.5% decrease), and a 9.6% drop in the European roll for 5-10 year olds. However, these students do not appear to have moved to neighbouring districts or wards which suggests that the departure of younger Māori aged children was mostly to schools outside the Greater Christchurch area, or other arrangements were made (e.g. home-schooling or correspondence).

Time and again people expressed a fundamental focus on the safety of their tamariki and this certainly framed the decisions for some whānau to leave as young couples with children made up 66% of those leaving (Newell 2012).

Everything is for our kids. (Parents who left for North Island) [EQ9, Wahine & Tane Māori, 26-35]

When you've got children, you're talking about something different. The safety of our children came first. (Parents who left for Australia) [EQ23]

While school rolls present robust data on Māori, the information available remains disappointingly sparse. Have Māori left Christchurch *because* of the quakes? Are some now returning after extended stays with whānau in the North Island? We know many Māori reside in Australia (Hamer, 2008) but research participants spoke of already knowing that Australia offered more opportunities, the earthquakes provided the final impetus to emigrate.

The economic impacts on some Māori will have been significant. Others are suffering from the disruption of having to move home and the pressures of trying to secure rental accommodation. A report by Te Puawaitanga ki Otautahi (Te Puawaitanga ki Otautahi Trust, 2014) reveals the struggle many Māori and other residents have in securing accommodation in the city after the earthquakes. The standard of most housing has deteriorated and the high costs of private rental meaning many whanau have to share their home with extended family, sometimes having to relocate outside of the city, with the main challenge finding warm dry

affordable housing. As a result of poor housing, health risks have increased, particularly skin infections and respiratory problems, anxiety and stress; babies are at higher risk to SIDS.

Employment opportunities have declined for many, particularly woman who were employed in the hospitality, service, and light manufacturing sectors, and even those hoping to work in the reconstruction of Christchurch are limited by the delayed rebuild.

Te Rūnanga o Ngai Tahu investments experienced a period of uncertainty but the Rūnanga itself is well-positioned to benefit from the opportunities offered in the rebuild of the city through significant residential and commercial holdings. The disaster does offer a salutary lesson to all iwi with property and business concerns as geological hazards are an ever present risk, and environmental hazards may pose even greater risks in the future (Te Runanga o Ngai Tahu, 2012).

4.3 Other research

Previous research pointed to a general decline in well-being for Māori, a finding supported by other research. The Canterbury Earthquake Recovery Authority (CERA) has undertaken four surveys since the February 2011 event. Their data show an alarming pattern of Māori suffering some of the worse effects on well-being from the disaster including stress, damaged or poor quality housing, loss of access to the natural environment, uncertainty, transport pressures, relationship problems, and potential or actual loss of income. Figure 8 shows those less likely to rate their overall quality of life positively in the CERA surveys, with 56% of Māori respondents in October 2012 (Canterbury Earthquake Recovery Authority, 2012, p. 13) increasing to 63% in September 2013 (Canterbury Earthquake Recovery Authority, 2013).

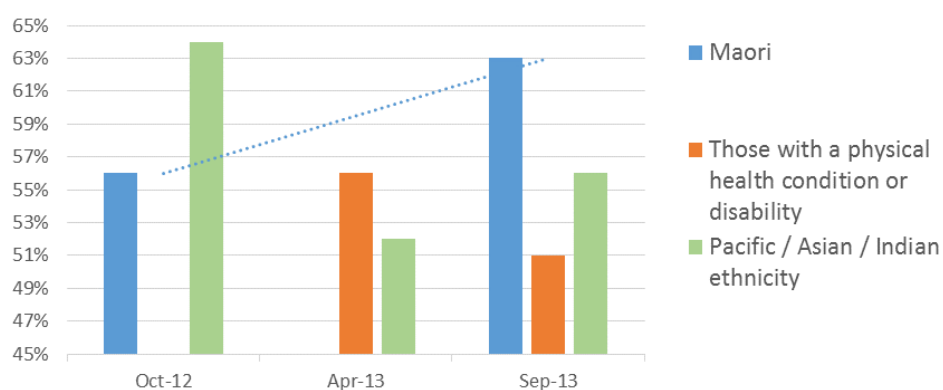


Figure 8: Those less likely to rate their overall quality of life positively

Some neighbourhoods, particularly in the Eastern suburbs, became increasingly deserted as people vacated damaged homes or migrated out of the city. This has led to a growing sense of insecurity among many of those who remain, exacerbated by ongoing crime including arson in these areas. While many reports have been published on the disaster, Māori are not always directly represented and in many cases are present by proxy, either geographically (for example where the Eastern suburbs are acknowledged as being the location for many Māori in Christchurch) or socio-economically (with Māori being disproportionately represented within poorer communities). Thornly et al. (2013) investigate the psychological resilience of

communities through six case studies located in the areas of Lyttleton, Shirley, and the Inner City East, while also accessing marae, migrant and refugee communities, chosen 'on advice from local experts' and explicitly including 'some of the hardest hit communities' in Canterbury (p. 1). Community resilience was defined as the 'process of communities adapting *positively* to adversity or risk' (p. 7, emphasis added), and seen as 'a capacity that grows out of people and communities rather than as something imposed on them' (ibid). The resilience of Māori communities is seen to incorporate Māori cultural processes, with institutions such as marae, hapū, and iwi seen as the 'settings and mechanisms' for disaster response. Community resilience is a 'process, not an outcome', the 'various elements' are 'interconnected and difficult to separate'. The project was undertaken 15-17 months after the February 2011 event and took the form of group discussions and interviews of over 90 community leaders and residents, comprised of 55% New Zealand European, 32% Māori and 13% 'Other ethnic groups', with ages between 21 to 79 years. They found resilience framed by pre-existing community connectedness and community infrastructure; community participation in disaster response and recovery; community engagement in official decision-making; and external support from organisations and authorities outside the community.⁷

Regan Potangaroa, Maire Kipa and Ann Winstanley (2014) have worked closely with the Ngāi Tahu community of Rāpaki, observing that resilience originated in the long-term occupation of tribal land and that recovery occurred at different rates for different people. The researchers identified a need to 're-align the objectives of disaster risk reduction and the cultural values and norms of communities', observing that these 'collided' in Rāpaki, preventing any 'reasoned response'. A lack of access to relevant information for managing their own risks in their own way on land that had protected generations was seen as an obstacle and they also consider that no single organisation will have the necessary knowledge to make an informed strategy, complicating disaster risk reduction in the region.

A chapter by Paton, Johnston, Mamula-Seadon, & Kenney (2014) highlights the need for the consideration of cultural diversity in recovery planning and development strategies. The section on Māori begins with an unfortunate statistical error (listing the Māori urban population of Ōtautahi as 4.1% instead of the 7.3% recorded by the 2006 Census) and draws mainly on Te Puni Kōkiri/Ministry of Māori Development and Te Rūnanga o Ngai Tahu (TRoNT) reports instead of peer-reviewed research. This authors ignore the dynamics between *mana whenua* and *taurahere* or *ngā maata waka*, that is between Ngāi Tahu (who number around 30% of Māori in the city) and those Māori who *whakapapa* elsewhere but have chosen to live in Canterbury.

Te Rūnanga o Ngā Maata Waka commissioned their own report, 'Living On the Fringes', into 'the issues and perceptions of residents near the Red Zones' (Gilbert & Elley, 2013). Many respondents were concerned about property damage and the loss of amenities and nearly half of all respondents reported a loss of well-being. Of those respondents that experienced closer relationships post-disaster, including a 'sense of camaraderie' with neighbours and community, 29.7% were Māori (versus 20.2% of the sample). The lack of a strong body of work on Māori post-disaster reflects the lack of research capacity rather than a lack of concern or interest by Māori.

⁷ In this can be seen the role of social capital observed by Aldrich (2012) and others (Allen, 2006; Paton, 2006; Wisner, 2003) in what is an increasingly important research theme in post-disaster discourse.

4.4 Summary

Although robust statistical data is generally lacking, the earthquakes have undoubtedly severely impacted Māori and communities. School enrolments and beneficiary movements, as well as our interviews, show Māori to be more mobile than Pākehā; the estimated percentage net migration loss of tamariki from Otautahi was 3-5 times that of Pākehā children. Certainly the scale and severity of the disaster has changed the lives and circumstances of individual Māori, whānau and Māori communities both directly through the trauma and damage, and indirectly through the loss of employment, income, family and community asset wealth, business viability, the loss of neighbours, school friends, and workmates. Another message from Whare Tamanui (to myself and Adele Wilkinson of MHERC) serves to illustrate the issue in stark terms:

One thought e hoa ma, as you venture through the city that used to be and you see the damaged buildings, twisted metal, cracked and creaking pavements, the lean-to`s without backbone, the wire mesh barriers and cordons, the check points and dust and ground water stagnant and polluted and the smell ...

... for one moment Simon, I want you to consider what this would look like if we could give the above things, life ...

All people not only Māori, have become/are the living examples of those buildings and they too have been torn, stripped, cordoned off and stagnant and we don't appear to notice.

Whare Tamanui

Overall I found Māori participants in these projects to be remarkably philosophical about the earthquakes, expressing a quiet pride in their roles through an event of stark significance to themselves, the city and the country. Most of those we spoke to articulated a clear sense that 'being Māori' helped cope with the disaster although for some this draws on a collective history of poverty and marginalisation, features that undoubtedly contribute to the overall vulnerability of Māori to such events. But as Whare Tamanui reminds us, there is considerable pain and fear in the city and is disproportionately falling on Māori. Reducing the vulnerability of Māori will require the collective continuance of our cultural practices coupled with an increase in Māori economic wellbeing.

Rūaumoko has sent a message, but it is one of opportunity to change for the better: to look after the environment better and to reflect our history and heritage better! [SM29, Wahine Māori, 72 years]

5. Partners, Collaborators, and Participants

Kaupapa Māori research is Māori-centric in accepting Māori philosophies and being guided by Māori epistemologies. A brief explanation is given below in Section 5.5. In contemporary Aotearoa New Zealand, Kaupapa Māori approaches are increasingly accepted in health and education research and now also in environmental management as Treaty settlements and practical engagement with land owners and *kaitiaki* see Māori-centric approaches a normal and efficient way to operate in this country (Allen, Ataria, Apgar, Harmsworth, & Tremblay, 2009).

5.1 Te Awa o te Ora

Te Awa o te Ora (TATO) is a Kaupapa Māori Provider that emerged out of the Southern Consumer Network Trust in the 1990s. As Whaiora membership grew, so did a desire to form their own entity eventually leading to the establishment of Te Awa o Te Ora Trust as a NGO in 1999. They began to provide Kaupapa Māori 'wrap around' health services to people aged 18-60 years who have experience of mental illness. Tangata Whaiora are themselves an integral part of the operation of Te Awa with a Whanau Forum that meets monthly and from which two representatives are elected as Board members. Their webpage speaks of "a collective wealth of experience, a supportive environment conducive to leadership, lots of positive attitude with a pinch of savvy in a shifting fiscal environment the forward motion of Te Awa o Te Ora is assured as Tangata Whaiora represent 53% of our workforce. Kia ora this is who we are" (Te Awa o te Ora, 2014).

On my first visit to the post-disaster premises of TATO I was given a short powerpoint presentation by the day manager explaining the philosophy and history of Te Awa. The *kaūpapa* of Te Awa is encapsulated in their logo which incorporates "the elements of whanau and earth via the stylized waves and koru, which are proudly supported and carried on the back of the *manaia* figure which symbolically protects all that Te Awa o Te Ora Trust believes and stands for... The cyan colour symbolizes water and its correlation to the ebb and flow of the river... The three prongs represent birth, life and death and also reflect the ever changing river of life" (Te Awa o te Ora, 2014).



Figure 9: Te Awa o te Ora logo

On this first visit the whānau kaūmatua also gave a kōrero on the history of Te Awa, delivered in front of the photo board that recorded many of the faces and activities in TATO's history. The kaūmatua spoke with a palpable sense of pride, both in the collective and his own personal survival story. These two presentations lay the groundwork for all subsequent engagement.

5.2 TATO Governance

An early interviewee pointed out that until recently, people diagnosed with a serious mental health issue were banned from being directors in Aotearoa New Zealand (see the following Box). TATO has created board positions for Tangata Whaiora whānau representation through a Whānau Forum that meets regularly and elects two representatives as Board members. This policy was part of a strategy in building a strong collective experience and supportive environment that enables more resilient mental health care for their community.

Members of Parliament and Company Directors and Mental Health

To be qualified to be a candidate for Parliament a person must first be a registered voter; "disqualified as electors are certain persons detained in a hospital as a result of mental disorder" and/or subject to the Mental Health (Compulsory Assessment and Treatment Act 1992, p. 13).⁸

The Companies Act prohibits anyone subject to a Property Order under the Protection of Personal and Property Rights Act (1988) from becoming a director. A Property Order can be applied to someone who has been deemed to be "mentally incapacitated" and this definition is broader than being subject to the 1992 Act and other legislation can apply (New Zealand Government, 1988). Section 280 (1) of the Companies Act 1993 refers to the banning as a liquidator 'a person who is, or is deemed to be, subject to a compulsory treatment order made under Part 2 of the Mental Health (Compulsory Assessment and Treatment) Act 1992' (New Zealand Government, 1993).

In 2014 the Board rewrote the Deed of Trust during the course of this research, seeking to embed a 'tūturu Māori' governance structure 'to reflect Māori practice' (Melanie Mark-Shadbolt, pers. comm.). This includes a Kaūmatua Kahui who while lacking voting rights (and therefore not legally liable), has significant influence on the organisations.

5.3 Mental Health Education and Resource Centre (MHERC)

This research was also supported by the Mental Health Education and Resource Centre (MHERC), "a dynamic collective actively contributing to mentally healthy communities by providing a coordinating service that encourages community participation and promotes autonomy of individuals and groups" (Mental Health Education and Resource Centre, 2014). Beginning with discussions by community groups in 1988, and in early 1993, a committee was established in 1993 to work formally on an organisation based on the "principles of community development including cooperation and resource sharing amongst community mental health organisations." The Centre opened in June 1994, representing a "key public mental health initiative in Christchurch, and indeed New Zealand, and few other examples are available internationally. The Centre offers a focus...puts mental health clearly on the map...brings mental health out of the closet, putting it unashamedly in the middle of town."

⁸ At the start of this research, the British Parliament repealed legislation barring those who have suffered severe mental health from jury duty or being a company director (Prince, 2012).

MHERC notes “[t]here is still a large degree of stigma and misunderstanding about mental health and mental illness amongst the wider community and the physical location of the Centre is a key factor in helping to address that.⁹ Prior to the Centre’s opening in June 1994, the self help organisations based at the Centre had their files and resources stored in spare rooms in their homes. MHERC notes that “because of the nature of mental illness, operating a self-help group can be very challenging. One purpose of the Centre is to provide an office space for groups and also to provide support, networking and shared material resources” (ibid).

5.4 Participants

My first formal meeting with Te Aw o te Ora was at a Board meeting on July 25th 2012 where I introduced myself. One Board member ‘Skyped’ in from Australia and asked particularly insightful questions framed by his previous position as a senior research manager at Lincoln University. I introduced myself to the Tangata Whaiora at the next available Whānau Forum meeting. After a brief korero on who and what I was (including a brief *mihi* and my *whakapapa*, a standard approach by Māori), I asked if there were any questions. A visiting Ngai Tahu kaūmatua asked the best question I have even been asked in such a setting: ‘Do you love your job?’ One can imagine the poor impression that would be given to stumble over that *pātai*! Luckily, I love being a researcher and presumably gave a satisfactory answer. I continued to meet staff and whānau over a period of several weeks before beginning interviews. Figures 9, 10, 11 and 12 show the broad categories of participants.

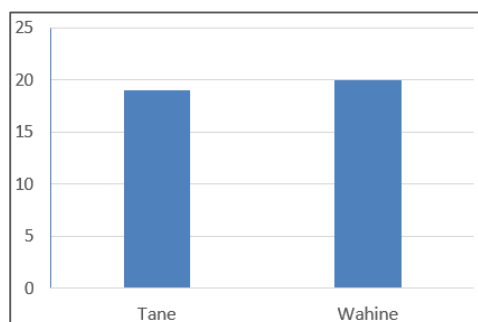


Figure 10: Participants by gender

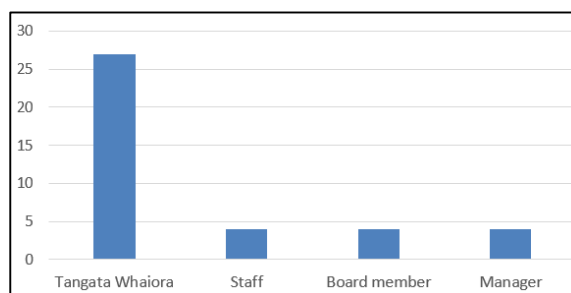


Figure 12: Participants by Role

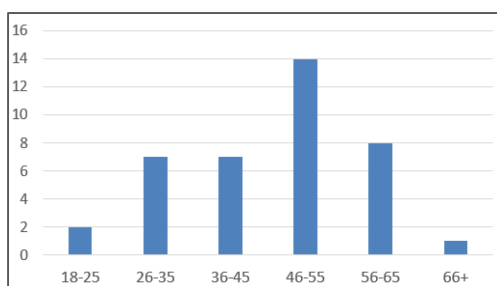


Figure 11: Participants by Age

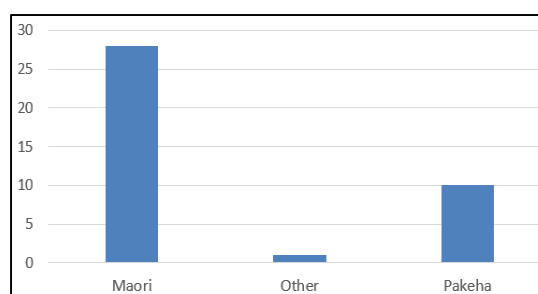


Figure 13: Participants by Ethnicity

⁹ Staff and management refer to MHERC by its acronym because of the stigma of the phrase ‘mental health’ (Pers. Comm., Adele Wilkinson).

5.5 Ethics Application and Processes: Kaūpapa Māori research in practice

The project had to gain approval from the Lincoln University Human Ethics Committee (HEC).¹⁰ HEC posed over 40 questions or challenges to my application with particular concern for the selection, approach and engagement of Tangata Whaiora. The research approach was finalised in consultation with Te Awa staff and Board members, with the Whānau representative on the Board engaged to facilitate interviews. One key option was to allow Tangata Whaiora to seek support from outside of the organisation. My response to HEC was to emphasise these regular communications and meetings, and the oversight of the whānau representative and Board. Approval was given by HEC on December 17th 2012 (HEC 2012-45). The interview schedule, consent form and research information sheet are in the Appendices.

I had always framed this research as a Kaūpapa Māori project but there is a constant risk this approach becomes cliché. Kaupapa Māori Research (KMR) is both a means to progress research with Māori and a fundamental *expression* of Māori culture within research. Kaupapa Māori perhaps be better understood as an array of research ‘principles’ for engaging with Māori. Here Linda Smith’s *Decolonising Methodologies* (Smith, 1999, p. 120) provides some clear and simple (but not simplistic) rules:

*Aroha ki te tāngata...*a respect for people

Kanohi kitea...‘the face seen’ (i.e. you present yourself to people face to face)

*Titiro, whakarongo, kōrero...*look, listen, (then) speak

*Manaaki ki te tāngata...*share and host people, be generous

*Kia tūpato...*be cautious

*Kaua e takahia te mana o te tāngata...*do not trample over the mana of people

*Kaua e māhaki...*don’t flaunt your knowledge.

Linda notes that these sayings came from her research and community experiences, often used by *kuia* as they scrutinised people (much as the Ngāi Tahu tāua was scrutinising me). These principles are, of course, not limited to Māori-focused research and are perhaps fundamental to any research that relies on human participants (see, e.g., Whyte, 1991). Kaūpapa Māori approaches have grown as a localised response to what Russell Bishop terms ‘epistemological racism’ (Bishop, 1999: 1). The grounding in Māori lives, from the use of Māori words and terms to the social and cultural engagement that occurs specific to Māori and the spaces they control, presupposes both the legitimacy of *mātauranga Māori* and the value of Māori culture. At the core of KMR is what Leonie Pihama and others (Pihama, Cram, & Walker, 2002) have described as the ‘affirmation and legitimation’ of being Māori.

Kaupapa Māori sits within a broader collection of social science methods known as Action Research in which concerns over the responsibility of researchers have motivated social scientists to challenge standard theories and methods. The position that research is, and should remain, ‘value free’ has been superseded by an explicit ‘conscious partiality’. For some

¹⁰ I was a member of Lincoln’s HEC during the course of this research though obviously I was not involved in scrutinising my own application.

researchers this is to be achieved by at least the ‘partial identification’ with research objects (Mies, 1991). Harvey (2003) has described KMR as a form of ‘guesthood’ at the behest of Māori communities. A manifestation of this in my work was the provision of kai, a practice I began at the outset of the interviews which involved me calling in to a local café or supermarket and buying some items of food. At first I bought cakes or donuts, classic Kiwi sweets that would always get a smile. After several interviews I became aware of how many participants were diabetic. In discussion with a board and a staff member, I switched to a large punnet of mussels; still a delicacy with Māori communities but one I was more comfortable providing given the health issues with Tangata Whaiora.

Koha

One challenge to the approval by HEC was the size of the koha which I had originally decided was to be \$100, gifted as a grocery voucher. A key principle of the provision of gifts to research participants is that the gift not be an amount or of a value that would ‘entice’ participation. Through the dialogue of the ethics application process I decided to reduce the amount to \$50.

In the final phase of interviews (January-February 2014) the project was discussed in a Whānau meeting and the koha of \$50 was obviously mentioned (several attendees had already been interviewed by this stage). When I arrived for an unscheduled visit immediately following this meeting I was besieged by volunteers wanting to be interviewed. Some actually mentioned the ‘fifty dollars’. The majority of participants were beneficiaries with weekly incomes of approximately \$270-\$300 of which perhaps \$60 would be discretionary income. Given this level of poverty, what koha amount would *not* entice people to be interviewed?!

I was comfortable with this turn of events from a Kaupapa Māori perspective for two reasons. Firstly, the koha was reciprocity for the fundamental knowledge which became research data and amounted to a small fraction of the total cost of the research. Secondly, as noted, most participants live in poverty. To be able to contribute to their living costs, albeit for just a week, is not something I choose to have any ethical angst over.

5.6 Summary

Through collaboration with TATO and MHERC access to and support from Tangata Whaiora was facilitated in an ethical and respectful manner. These relationships also enabled networking, greater resourcing, and a wider dissemination of results. The TATO Whānau Forum allowed a regular sounding board for data collection and preliminary results, contributing to the knowledge and networks needed for mental health care for this community. Meetings and discussions have been held with this board and individual board members, a board member and whānau representatives to monitor and guide our research. Fieldwork with any group is always a dynamic process, and in the words of Māori geographer Brad Coombes relations with Indigenous communities – even with Indigenous researchers – are often ‘on a knife-edge.’

6. Research Approach

We know that disasters disrupt and dislocate people and their support networks. The broader research problem, therefore, is: **the nature, causes, and consequences of Māori community resilience in the response and recovery to disasters**. Several previous publications have already described aspects of how have Māori individually and collectively experienced this disaster (Lambert, 2014a, 2014b; Lambert & Mark-Shadbolt, 2012; Paton et al., 2014; Potangaroa et al., 2014; Thornly et al., 2013).

6.1 Problem, Questions and Objectives

Resilience in the context of our wider research problem is the ability of communities to absorb external shocks and recover following disturbance. Complicating this for Indigenous societies is their increasing urbanisation (Del Popolo, Oyarce, Ribotta, & Jorge, 2007), exposing their communities to hazards they have comparatively little experience of, indeed many hazards are emergent from the forces of urbanisation (Albala-Bertrand, 2003). With growing numbers of Māori in urban centres both here and overseas, (particularly in Australia, a country with a significant and possibly growing risk of drought, fires and storms' see Latham, McCourt, & Larkin, 2010), their futures will be reliant on resilience enabled through new and dynamic relationships that must equip them for infrequent but potentially devastating events. Three research questions relevant to tangata whaiora emerge from this problem.

The first research question is a matter of describing the context: **What are the affects of the earthquakes on Māori mental health communities in Ōtautahi?** Through our previous research we have a store of data and informants for an in-depth analysis of post-disaster Māori communities in Ōtautahi. This project builds on that to show the particular effects on the distinct community of Māori mental health clients.

We prioritise the experiences of Tangata Whaiora to understand how Māori support networks respond to radical dislocation: **How did Tangata Whaiora and their whānau respond to the disaster?** Anecdotal evidence already exists for the surprisingly rapid and efficient response of Māori providers (Ria, 2011). We will record the stories of this community and identify decision and support pathways undertaken in the aftermath of the earthquakes.

The third question concerns the application of our findings: **What aspects of the response and recovery of Tangata Whaiora are applicable to other Māori and Indigenous communities?** How this community has responded to this disaster can facilitate disaster planning and management for whānau, marae, iwi, and other Indigenous as well as non-Indigenous communities. Two methods were employed in this research to meet these objectives. Each is discussed briefly below.

6.2 Interviews

The first approach was to simply record the earthquake experiences of Tangata Whaiora. A total of 39 semi-structured interviews were undertaken with Tangata Whaiora and staff, with all but two being recorded and transcribed. (Notes were taken for the two unrecorded interviews.) Selected quotes are presented in the Section 6, 7 and 8 (longer quotes are reproduced in Lambert, Wilkie, and Mark-Shadbolt 2014). Most interviews were undertaken in Te Awa's Tuam St. premises in a quiet corner although there was always background noise (including occasional

performances from a band comprised of Tangata Whaiora). A whānau representative was always present. Interviews of Tangata Whaiora ranged from four minutes to over half an hour; interviews with staff and managers could be over an hour. Transcriptions were made and data then downloaded in NVivo at the start of the project, with all files being transferred to Dedoose cloud-based software analysis for most of the final analyses¹¹.

Of course few disaster research projects can take place while the events are actually unfolding. Although the researchers involved in this project were not badly affected by the quakes, normal operations – personal and professional – were definitely disrupted. Authorities requested people not visit the worst impacted areas, and large areas of the CBD were fenced off, and residents complained about ‘rubber-neckers’ (Turner, 2013). I do, however, regret the missed opportunity to visit damaged suburbs and making more firsthand observations and records what was taking place, including taking pictures. Important methodological insights were collated by Lewis Killian (2002) who notes:

The disaster experience leaves the people involved heavily laden with emotion and tensions. The great majority are intensely ego-involved in their experiences. It is easy for the researcher to be affected by the drama and the tragedy which so strongly affect his subjects, so that interviewer bias can easily become a problem. It also raises forcefully the question of whether the interview response of disaster victims may be especially subject to faulty memory and retrospective distortion and reconstruction. (ibid., p. 53).

The difficulties in conducting hypotheses’ testing in disaster research opens up the need for exploratory and descriptive research. Participants in this research had dual roles, being both respondents (reporting on their own reactions) and an informant (commenting on observations of what took place around them).

6.3 Social Network Analysis

Killian accepts that the very nature of disaster research, its immediacy and the difficulties of conducting any fieldwork, data should be collected and analysed in such a way as to identify ‘new and unexpected relationships’ (p. 55). To this end the research also undertook **Social Network Analyses** (SNA). Knoke and Yang (2008) note three fundamental assumptions in SNA approaches to studying society, its ‘patterned relations’, and the effects of these relations. First, structural relations are instrumental in many social phenomena. While many attributes such as gender, ethnicity and age do not change across the social contexts, some structural relations will only exist at specific times and in specific places. In Māori communities we sometimes see an individual in a low-level menial job who is an important and dynamic leader in cultural contexts.¹² This structural-relational approach contrast with ‘substantialist approaches’ predicated on static units of analysis.

Second, social networks affect perceptions, beliefs, and actions through various mechanisms that are socially constructed via relations among entities. Relational structures provide complex

¹¹ <http://www.dedoose.com/>

¹² While this concept is often articulated, I suspect empirical cases are declining.

pathways for assisting or hindering flows of knowledge, gossip and rumour through society and communities, the infamous 'kumara vine' of Māori communities. Importantly, structural relations may be crucial to 'sustaining cohesion' and harmony within a group (*ibid.*). By channelling information and resources to particular structural locations, networks help to create interests and shared identities and to promote shared norms and values.

A third assumption of SNA is that structural relations are dynamic processes and networks are not static but 'continually changing through interactions among their constituent people, groups, or organizations' (*ibid.*). Knoke and Yang argue the core issue is 'how large-scale systemic transformations emerge out of the combined preferences and purposive actions of individuals'. Because SNA embraces both structures and entities, it offers 'conceptual and methodological tools' for linking micro-level choices to macro-level alterations.

6.4 Summary

Disasters offer striking if unfortunate opportunities to observe social change. As David Slater observes (2013, p. 38) "in times of change, the internal workings of society are shifted out of their systematic patterns and smooth relationships, thereby revealing what is at other times obscure". A SNA approach frames our primary research question by identifying features of social networks that enable and constrain Māori mental health and well-being post-disaster. Dedoose codes were analysed for those codes that represented named or observed organisational, institutional or network support – nodes – for Tangata Whaiora through the disaster.

7. Results 1: Kōrero/Narratives: What are the affects of the earthquakes on Māori mental health communities in Ōtautahi?

Results will be presented in four formats, matching the four methods described above. The first is the presentation of selected quotations from the interviews; quotations will reappear throughout the rest of this report to highlight important themes common to all or most Tangata Whaiora as well as unique insights from individuals. Our opening question was usual to ask about peoples' experiences of the earthquakes – where they were, what they went through, what they thought. What follows is a broad overview of key themes with associated quotes. The format is to group comments according to a timeline comprising immediate, short-term, and longer-term responses.

7.1 Immediate impacts

The first thing that must be noted was the intense and frightening violence of the biggest shocks, and particularly the early morning September 4th, 2010 event. Two of our participants experienced significant earthquakes while in jail.

I was pretty scared, being in an old prison, and kept thinking the roof was going to fall. [NPM21, Tane Māori, 46-55, Tangata Whaiora]

I was worried about the others around me, people in buildings over the fence that were screaming and yelling and they couldn't get out...it was, I don't know, a real case of feeling defenceless. [NPM07, Wahine Māori, 36-45, Tangata Whaiora]

Some Tangata Whaiora saw horrific scenes.

I witnessed someone being killed on February 22nd. It was a Japanese lady ... there was a group of us, we came out of the community house building and we came downstairs and the stairs [were] bouncing underneath our feet, we didn't know it had detached and I remember opening, prising open the door and there was all this rubble, there was just dust everywhere it was just really like a bomb had been dropped on us, you were so confused. And we made our way down towards Colombo Street and we couldn't go down Hereford Street because the Whitcoulls building had collapsed out so we went around by City Mall, Cashel Street that way, a group of us and we stayed together heading towards wherever just to get the hell out of there and that's when we saw this women, Asian lady, had been killed and we went over just to try and help her but she was already gone so there was nothing we could do except follow what the police had told us to do and eventually we met up with a couple of policemen who were guiding us to go to, out to Hagley Park. So from then on I became more isolated, and I isolated myself. And every time the [ground] rumbled I wasn't sure, I'd run to the door and I'd hang on, it could be another big one. You're sort of on the edge. [NPM23, Tane Māori, 36-45, Tangata Whaiora]

The greatest knowledge that anyone can have is knowledge about people and their fears, and just wrap support around that. Everybody's fears are all at different levels so it is a matter, for me, it was a matter of deploying! [NPM02, Wahine Māori, 56-65, Manager]

7.2 Short-term impacts

While the city still shook with regular aftershocks (often coming in clusters), most people were preoccupied with food and water, toileting, reassuring children and each other. Many had to secure new accommodation.

I shifted about six times during the earthquakes. I'd sold my property, had everything in storage [which] wasn't insured so liquefaction basically took, with seepage, the bottom boxes...here's me thinking I'm actually paying to have a secure lock-up and we're not covered! ... I just got displaced after that, had gear stored in about three different places at one point and was staying at Addington Accommodation Park. Don't recommend it mate, they've got a very strong drug and alcohol culture there. [NPM32, Tane Māori, 36-45, Tangata Whaiora]

We got stuck outside our house ... and we couldn't go in our house, all the walls had fallen in and we were just in this little garage and that's when our friends rang us, 'Come down south', so we had to take the kids down there... [NPM33, Tane Māori, 46-55, Staff/Tangata Whaiora]

We were lucky we got into earthquake village and I think it may have had bearing that I had some challenges that were quite significant. And we only had basic insurance as well so we couldn't afford to go out on the market. At first we were looking at all these places that were like \$175 a day and stuff, and we don't have the insurance cover [NPM13, Wahine Māori, 36-45, Tangata Whaiora]

Medication was very important for the health of many Tangata Whaiora

Because I have a tendency, if I don't have my meds, I get a little bit violent and I start to stress out about things that really with medication I don't. And with mum passing away and that.... by about the second or third day after the quake I was running on adrenalin anyway. But the week after that I couldn't even look out the window without thinking 'I'm in trouble here!' [NPM03, Tane Māori, 46-55, Staff/Tangata Whaiora]

Well I pick up my meds on Tuesdays [the February 22nd earthquake was a Tuesday] and I was on weekly blister packs so I had no meds and on Wednesday my son took me through to the hospital and the army was there and they said 'well what are you here for?', and they're busy, 'you can't come in!' And then my son just said 'Look my mum needs psych meds!!' and they let me in. But they wrote out a script and we had to go to one of those 24 hour ones. It cost \$119 for my meds and I never got that back. The Government was supposed to allow us to have....but they

didn't take down any of my numbers or anything, have any of my numbers for my meds so it cost \$119 for that week's meds. It was an out of it price! I really don't know how I got through it but I did. [NPM25, Wahine Māori, 46-55, Tangata Whaiora]

Our chemist stayed open right through the whole bad situation, they had to because what they were giving to us was methadone and we had to have it otherwise we would rob their place, it would have got robbed just like that! And you wouldn't have been able to blame us because we would be a misery, and so we'd rob it and get what we want and we'd take everything, take their money, take their drugs and take the whole fucking shop! [NPM14, Tane Māori, 56-65, Tangata Whaiora]

Almost everybody commented on the community bonding which took place.

It freaked everybody out. There was all these guys that talk about being staunch, when an earthquake comes that went out the fucking window mate, they were wimping like little rats. They were in no different situation than we were bro, all begging for mercy. [NPM14, Tane Māori, 56-65, Tangata Whaiora]

A common comment from staff and managers was that many Tangata Whaiora handled the disaster very well.

I found that Whaiora were extremely resourceful because their lives [are] kind of up and down and all over the place anyway, that this was quite normal for them. It didn't even feel out of sorts particularly for them mentally, like they were just carrying on as usual and 'Yehea!' they were able to do a few extra things that they liked doing whereas we, who were...supposedly a bit more in control of what was going on in our lives and helping them, we were more out of sorts. [NPM10, Wahine Māori, 46-55, Manager]

For Te Awa clients, a number of decisions and events were talking place to ensure they had minimal dislocation to their service provision. Much of the planning for this support was implemented by the day manager after the September 4 event¹³:

I knew exactly what I needed because I had prepared it to make sure it was all together. And it was HR files, the lease, the insurances and my laptop which had the central database on it. Because when it happened [i.e., February 22] I just packed up quickly and chucked those files in my car... [NPM02, Wahine Māori, 56-65, Manager]

The day manager organised her own house as a temporary headquarters.

¹³ That this initial event resulted in no deaths was taken as positive outcome of New Zealand's building codes which themselves had been implemented after the experiences of the 1931 Napier earthquake (See Davenport, 2004; Megget, 2006).

The most important thing is the communication, it's first to calm down staff, give them orders, give them clear directions so they're busy. I'd been on the phone to top up all their cellphones, all of that, so I phoned to top them up, they already knew what they needed to do, they went home in pairs and dropped each other off, or to stay with each other. So those things just kicked in and like I said it was really important, the communication and that the rendezvous would be my place.

Because I was hooked up, I could go online. I linked into the CDHB website and...the City Council website, and every morning I would pull off information from there and that would be the basis of my briefing for staff...I had a list of GPs that weren't affected because a lot of the GPs were affected, a lot of the pharmacies were affected, the first thing that you worry about is first, all the Maslow stuff, food, water, power. Because I had my central database intact because it was on my laptop, that's why I had a laptop, got rid of the PC and got the laptop because it's mobile, and on that laptop was the central database... within 48 hours we were able to track everyone except for one person who two months later we flushed out and who was in Wellington. Other organisations relied on our information so I sent it freely. [NPM02, Wahine Māori, 56-65, Manager]

A Māori manager of a health provider noted that rapidity of the Māori response.

Māori are going to send Māori whether you like it or not! No way you can stop them. What you've got to do though is be in a position where you can provide for them. I mean Te Arawa were already in the air! Go up to them and 'Yeah, ah no thanks!' Tainui brought a mass unit down. [Initially] Ngai Tahu might have got caught with their pants down because the other iwi were just responding like nobody's business, there's millions of dollars worth of food coming in these containers, there's this, there's that. Everything they had, they were sending! [It] wasn't just Māori that were contributing but what struck me was the Māori response [was] absolute immediate. [EQ05, Wahine Māori, 36-45, Manager]

This logistical response originates from a cultural spring enabling an effusive transfer of people, kai, wai, awhi which as expressions of manaakitanga and whakawhānaungatanga move this through cultural connections which *spontaneous* embrace Pākehā and Tauīwi, ngā tangata katoa. This Māori cultural lens filters the radically altered psycho-social landscape on which Māori now lived.

One senior Māori leader noted the disparities in response efforts for his community.

One of the biggest criticism[s] has come from I think it was the east side of town, around this area, is the lack of communication and of course people didn't have any power, they wouldn't have had access to TV, internet and probably radio, certainly not printed media...[EQ26, Tane Māori, 56-65, Manager]

Participants in earlier research experienced mental stress and many sought counselling for the first time.

I put my name down ... I'd talk to those guys because I wasn't sleeping and stuff like that so. But they were bloody good, I said 'I'm doing this, this, this and this, is that normal?' and she said 'Yeah that's completely normal, if you weren't doing any of those things ...' I've got a fucken helmet next to my desk! ... It defiantly made me a bit flightier after that second one...[EQ03, Tane Māori, 36-45, Student]

Many people struggled with the 'new normal', of living in a post-disaster landscape.

I really saw things from a different perspective, I saw things from the perspective maybe, more when you feel like you've got nothing, you feel like everything is shit, your house is gone ... your relationship with each other is disintegrated, there's gambling. I worried about alcohol, I wouldn't have it in my fridge. I just was terrified, absolutely terrified. [NPM13, Wahine Māori, 36-45, Tangata Whaiora]

7.3 Longer-term impacts

Recalling the MCDEM modelling of disaster as a four-phase 'event' comprising reduction, readiness, response, and recovery. Indigenous Peoples could argue for a series of overlapping disasters which may within their own history include those environmental hazards they have resided with for generations which are exacerbated by colonisation.

Those residents who have lower-incomes tend to be the more affected and take longer to pass through these stages with some living in for severely damaged homes for considerable periods of time (Lindell & Prater, 2003). Many Tangata Whaiora are reliant on social housing, a sector that has been hard hit (Goodyear, 2014), and accommodation remained a significant concern even three years after the February 2011 event (Te Puawaitanga ki Otautahi Trust, 2014).

The house ... it had piles that needed doing, it had cracks down the walls, it had the ceilings all curved in or curved out or whatever it was. David's room ... the water came in and we had buckets, we had to get the fire people to try and put a tarp on it ... so yeah, the house wasn't good and it took a while for that to really kick in [NPM13, Wahine Māori, 36-45, Tangata Whaiora]

I've just come to understand people better and I just think it's their process and how it suits them with what they've got to go with, it's sad you see. The funny thing about it though is the homeless people, they don't seem to care you know, they're still the same, they ... I don't mean to say they don't care but it's like nothing has really changed for them because they're living out there and they've known that ... They've just got less places to go now. [NPM07, Wahine Māori, 36-45, Tangata Whaiora]

Many relationships ended in the months after the disaster. People were having to deal with “earthquakes, stress, damage to their homes, insurance, finances, and when people are put in those situations they do tend to take it out on their partners” (Stylianou, 2012a).

Me and partner have broken up. I think part of it is stress because you know how everything just calms down and then the realisation of what happened just hits you. I started smoking, I hadn't smoked since 23 years. And I started drinking too. [NPM08, Wahine Māori, 46-55, Staff]

Wider historical marginalisation was noted by participants familiar with the Eastern suburbs:

To a lot of people around, they're just basically resigned to the fact oh this is how it is for us here, how it's always been and in terms of pecking order or priority to receive any assistance, it will come when it comes if it comes. A lot of people are angry at a host of different things and some of those things are beyond sort of manageable control...[EQ26, Tane Māori, 56-65, Manager]

7.4 Other comments

Our interviews provided a wealth of rich data. Most interviews ended with a question on what advice interviewees would give to help others be better prepared for future disasters. Answers revolved around two poles. One was a simple, short but vital list of the basics which included contacts with support people.

Just get themselves supplied with emergency backups, just like water, first aid kit, torch or whatever. And for me is to get contacts, support contacts like just staff you know and just say 'hey' look if you feel a bit afraid....[NPM28, Wahine Māori, 26-35, Tangata Whaiora]

Not all were convinced that staying and ‘toughing out’ a disaster was a good idea.

Fucking leave. [NPM11, Wahine Māori, 46-55, Tangata Whaiora]

Other answers give a fascinating insight into a collective whaiora philosophy of support.

Make sure you've got the supports around you before it happens, try and make sure you've got no financial problems, just be careful and make sure you've got your supports around you. [NPM33, Tane Māori, 46-55, Staff/Tangata Whaiora]

Collectively is [the] way to move forward if you can do that. I've been in situations where society, that's how a lot of us have ended up at Te Pito Ora and Te Korimako, society has moved on and we weren't part of their progress and [I'm] just thankful that these places do exist because it allows you to reconnect. Time flies, you know, and if you don't keep up, sometimes it's not fair, I don't think it's fair! Being through it and down

and come back through it, you know, there's plenty of space for everybody. [NPM20, Tane Māori, 56-65, Tangata Whaiora]

Another report (Lambert, Wilkie, et al., 2014) reproduces a wider selection of quotes, with longer narratives.

I'm more appreciative of life, more grateful, strong in my faith. I think it's made me more resilient, it's made me [realise] that yes, if something was to happen that I would come through it ok. I did not crumble. [NPM08, Wahine Māori, 46-55, Staff]

Some people have [moved away]... I've become disassociated with them because they went away, came back, went away, came back, went away so you don't really know people who have had to shift so much because the landlords have suddenly decided this is the time to sell and these are people in rental accommodation. [NPM11, Wahine Māori, 46-55, Tangata Whaiora]

7.5 Themes and codes

Themes were identified from preliminary analyses (Lambert, Wilkie, et al., 2014); a full list is provided in Appendix 6. The main themes that emerged from our interviews are listed in order in Table 4 below. While several of these themes were specifically examined in the interview process (see the list of interview questions in Appendix 2), comments are made on several themes.

| |
|-------------------------------|
| Housing/accommodation |
| Support |
| Changes after the Earthquakes |
| Mental Health |
| Earthquake experiences |
| Whānau |
| Kaupapa Māori Providers |
| Support received |
| Advice |
| Support needed |

Table 4: Top ten themes by order of mention

Because of the particular nature of the Ōtautahi disaster – a series of damaging earthquakes with ongoing seismic activity over several years – not only was the rebuilding severely hampered, this was further constrained by the delayed settlement of insurance claims.

Experiences of temporary shelter were often negative.

When I went to the earthquake village I had terrible anxiety. I stood there and I was looking at all the stuff around me and I just couldn't do anything... I felt disabled and I don't know if you can understand that but I felt people look at me and...they don't see it but it's like being in a fat

*suit or something and looking out and wanting to do it and you just can't!
....The dread, there's so much fear that something is going to happen and
you're just not going to be able to cope with it, you have to deal with
something with the kids at school, you can't... [NPM13, Wahine Māori,
36-45, Tangata Whaiora]*

The media and several activist groups have highlighted the often delayed and confused response by the construction and insurance sectors (see Miles, 2012).

*We were living in St Martins right near the river, so TC3. The house was
quite damaged but still habitable. EQC decided it was under cap
[\$100,000] and the insurance company laughed a little bit at them and
said 'It's well over \$200,000 at least.' [NPM16, Wahine Pakeha, 26-35,
Tangata Whaiora]*

*There's more damp under my house than there ever was before but
nobody will come and do anything about it because my house is too close
to the ground ... You see they don't listen to me and they ask you 'what's
wrong?', they don't take notice of what's happened, like my ... window
doesn't shut and I slammed it shut one day and the window broke, I had
to pay for the new glass. My front door has to be locked or it will blow
open. My windows on that side of the house don't shut properly. My door
in the kitchen falls open easily ...I can't shut my bathroom window
properly ... I can't afford to fix them but we're three years later and EQC
hasn't come near me! I got a letter last year saying that because I have a
wall that I share with my neighbour they have to put me on this other list
and it was going to take longer because I'm considered a unit and any
repairs to my house might affect the house next door. [NPM11, Wahine
Māori, 46-55, Tangata Whaiora]*

*A: They may never get to me and by the time they do there won't be any
money left to fix things.*

Q: Do you think a lot of people are worried along those lines?

*A: I do, especially low income people, and people like me, I'm not too keen
to ring up the insurance company ... and push it. Insurance companies
scare me you know and there's a lot of people like me out there who don't
have a lot of money...barely get by but they're not going to get their house
fixed whereas somebody a bit more financial can pay for somebody to
come and fix their house ... I'm going to end up with a house that's on a
lean, admittedly not a big one but who's to say it's not going to get worse
as the years go by? [NPM11, Wahine Māori, 46-55, Tangata Whaiora]*

7.6 Summary

The experiences of Tangata Whaiora can be grouped into two broad intersecting impacts. First there was fear, anxiety, dislocation and loss. Several participants were in life and death situations

and directly experienced horrific scenes. Many of our participants had to move, some lost their jobs, and most felt the disruption to their lives, not least when Te Awa o te Ora lost its original facilities. Moving around the city was difficult, with most relying on public transport which was severely disrupted. The logistical challenges of accessing food and water were significant, as were the supply of medicine.

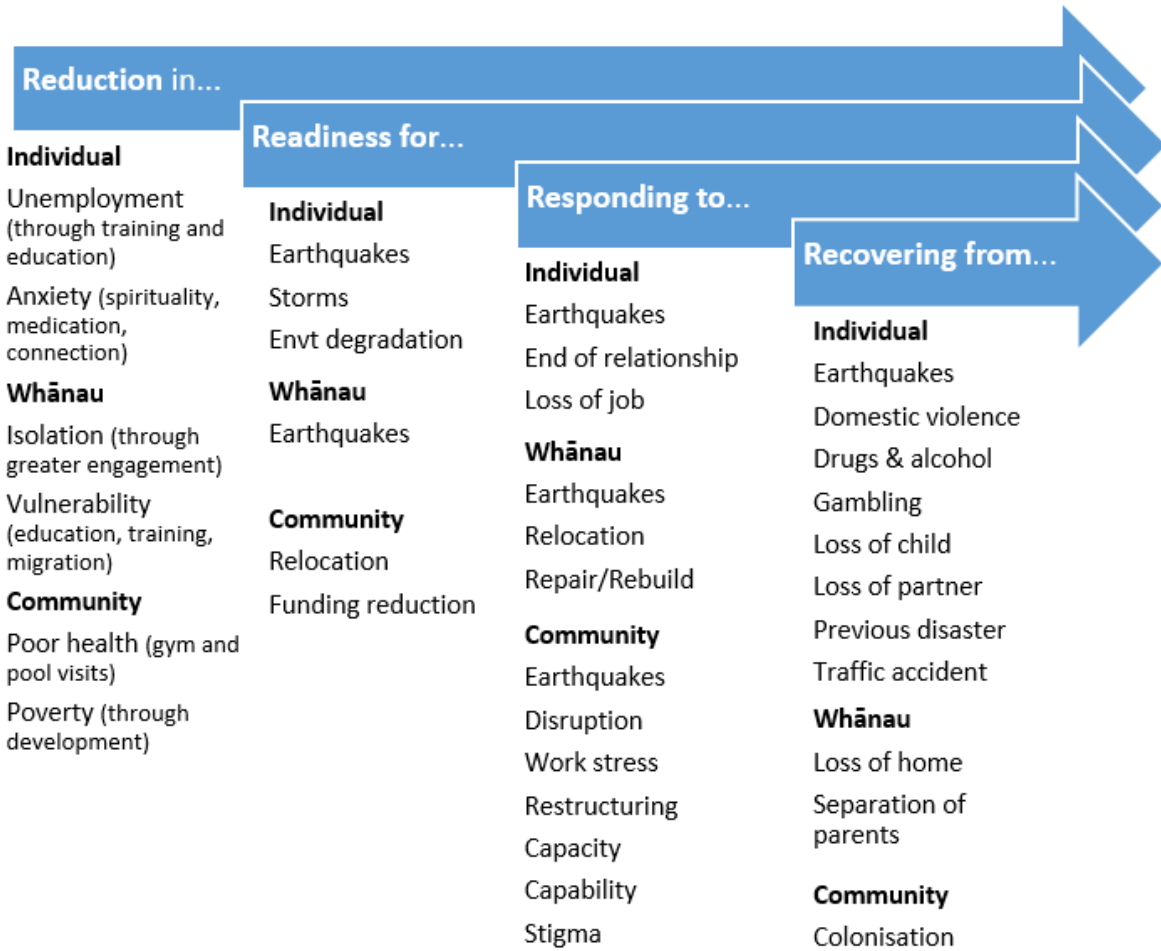
Housing and accommodation was the most commonly named issue for our participants, whether it was searching for rental housing, seeking emergency repairs or trying to juggle a complete rebuild (personally or within whānau networks). The frustrations of navigating EQC's bureaucratic labyrinth was extraordinarily difficult for many Tangata Whaiora. The disaster damaged and destroyed many homes in the city and exposed the technical criteria of 'safe homes' in a way few Māori had experienced before. The reassurance people, especially parents, needed for their accommodation to be a safe home, was difficult to attain and often challenged daily as aftershocks continued. 'Tidying' the house was a key response, especially by women, while parents and whānau arranged their lives to negotiate the difficulties of surviving in a post-disaster landscape. For some of our participants – including staff and managers - damaged homes became a physical, emotional and financial drain as the minutiae of insurance policies, city council and government regulations and construction workers exacerbated the considerable anxiety experienced. Housing issues look set to continue for many Otago/Christchurch residents in the post-disaster landscape and for those who are isolated from whānau and with limited networks, this poses a substantial risk to future health and safety.

For some participants, including staff, experienced the break-up of often long term relationships. This was not necessarily directly from the earthquakes but the disaster certainly acted as a trigger event that exposed or exacerbated existing tensions. Support services reported increases in relationship issues and the extra demands on their services.

However, there was also pride, exhilaration, new connections and stronger existing connections for many participants: in the words of one participant, 'I did not crumble.' Participants knew they had lived through a significant historical event and their personal survival was a matter of pride. Some Tangata Whaiora related stories about their own leadership roles in whānau, residential care facilities, the community and neighbourhood as they 'stepped up' in the absence of other leaders.

Several of our participants mentioned previous trauma that was integral to their responses to the earthquakes. Wider issues can be discerned from the overlapping of different phases of the four R's of disaster – reduction, readiness, response and recovery – at all scales (Table 5).

Table 5: Overlapping issues by disaster phase and scales for Māori participants in Ōtautahi



8. Results 2: How did Tangata Whaiora and their whānau respond to the disaster?

While the disaster may have ‘pulled everyone down’ into the often chaotic world of mental health clients, Tangata Whaiora remained under threats from unemployment, loss of housing, disruption to medical and pastoral care and other issues – many exacerbated by the disaster – meaning they remained vulnerable. A key aim of this research was to describe and analyse their responses to an urban disaster that destroyed and dislocated a city on a scale not experienced in this country since the 1931 Napier earthquake. This section begins with examining the movements of Tangata Whaiora and staff (many of whom are themselves Whaiora) in response to the February 22nd event. It then describes the support that quickly wrapped around these individuals both the whānau and individual supporters, and the organisations (voluntary, professional, emergency and so on) that actively participated in the support networks. A Social Network Analysis is undertaken on this data to further highlight the characteristics of the support utilised by Tangata Whaiora through the disaster.

8.1 Movements

Many Tangata Whaiora had to leave their accommodation and seek shelter either elsewhere in the city or somewhere further afield. Those participants who owned their own homes which were damaged as a result of the earthquakes, the struggle to get repairs and insurance payouts often dominated their lives in the months and even years after the initial damage; the resulting stress on some Tangata Whaiora is a serious issue. TATO Quake Assessment data show considerable movement by Tangata Whaiora, both within the city and to other towns and cities around the country (Table 6).

Table 6: Te Awa o te Ora Quake Assessment Data (February 2011)

| Response | | Peer (n=31) | Day Care (n=28) | LMLM (n=4) | CSWCIS (n=47) |
|---------------------------|-----------------------|----------------|--------------------|---------------|------------------|
| Stayed in own home | | 6 | 8 | 1 | 16 |
| Residential Care | | 7 | 2 | 1 | 5 |
| Moved within Ōtautahi | In emergency shelter | 1 | 1 | - | 2 |
| | Moved in with Whānau | 2 | 3 | - | 4 |
| | Moved in with friends | 3 | - | - | - |
| | Other | 3 | 4 | 1 | 5 |
| Moved outside of Ōtautahi | | 9 | 10 | 1 | 14 |
| ...and with whanau | | 4 | 3 | 1 | 5 |
| Missing | | - | - | - | 1 |

LMLM: Like Minds Like Mine (A ‘national, publicly funded programme aimed at reducing the stigma and discrimination associated with mental illness’; See <http://www.likeminds.org.nz/>).

CSW/CIS: Community Social Worker/Clinical Information Systems.

These data show of the 110 TATO clients, 34 left Christchurch following the February 22nd event, just over 30 per cent. We reiterate that many Tangata Whaiora are vulnerable to isolation and a

significant minority specifically exclude whānau from their support networks, emphasising the role of staff and friends. That only one could not immediately be accounted for is quite remarkable in the circumstances and is a testimony to the strength of the support networks that existed pre-disaster and the dedication of staff and the rapidity and efficiency of their response in the aftermath.

An important factor behind the rapid and efficient response by TATO staff was that they were comparatively secure in the contexts of their housing, infrastructure and whānau. Eleven TATO staff were available in the disaster response (two were on leave), and staff members paired up in the days after the major event of February 22nd 2014 and visited clients to check on their well-being and provide emergency supplies and pastoral support (Table 7).

Table 7: Impacts of 22-2 event on TATO staff

| <i>Home Habitable</i> | <i>Power</i> | <i>Water</i> | <i>Phones</i> | <i>Whānau OK</i> |
|-----------------------|--------------|--------------|---------------|------------------|
| 1 | 1 | 0 | 1 | 1 |
| 0 | n/a | n/a | 1 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 |
| 1 | n/a | n/a | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 0 | n/a | n/a | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 1 |

8.2 Who and what are supporting Tangata Whaiora?

There are 13 Māori Mental Health providers in Ōtautahi (Canterbury District Health Board, 2014), though they vary in the role of Māori and the degree of tikanga practiced. These organisations generally work well together, referring clients to each other and trying to coordinate their activities.

- Te Awa O Te Ora (Day activity programmes)
- Purapura Whetu (Clinical Counselling service)
- Te Kakakura Trust (Governance body for Te Pito Ora and Toiora)
- Te Pito Ora (Māori Supported Accommodation)
- Toiora Arotake (Māori Needs Assessment)
- He Waka Tapu (Specialists in AoD, Rangatahi Programmes, Adult Programmes)
- Te Puna Oranga (Counselling Service)

- Te Puawaitanga o te Tamaiti (Well Child Checks, Mobile Nurses, Pepi & Whaea Programmes)
- Māori Womens Welfare League
- Te Rapana Trust (Māori Rongoa)
- Te Rūnaki Ki Ōtautahi
- Hauora Mātauranga (Health Promotions)
- He Oranga Pounamu (Te Rūnanga o Ngāi Tahu)

Operationalising SNA required the construction of a case-by-affiliation matrix, using an Excel spreadsheet. This checked and revised several times (as preliminary analyses proceeded) and the final database uploaded by UCINET and NodeXL for final analyses. The main supports for all participants are listed in Table 8.

| | |
|-----|---------------------------------|
| 1 | Te Awa o te Ora |
| 2 | Whānau |
| 3 | Kaupapa Māori Providers |
| 4 | Voluntary Organisations |
| 5 | Tamariki |
| 6 | Community |
| 7 = | Personal networks Neighbours |
| 8 | Māori Institutions |
| 9 | NPM02 [Day manager] |

Table 8: Most named supports, in rank order.

Of course ‘Te Awa’ is first by default; most participants, and all Tangata Whaiora, were sourced through Te Awa o te Ora. Kaupapa Māori providers and Voluntary Organisations feature in the support of most Māori Tangata Whaiora. That whānau features in second place is also to be expected: whānau remain the fundamental node of support for Māori and non-Māori. However it should be noted that for 6 of our 26 Tangata Whaiora participants, whānau was named as a negative in their lives: these individuals *explicitly excluded* whānau from their support networks because of prior experiences (drugs, alcohol and violence being the main reasons).

Q: So what keeps you in Christchurch then?

A: It’s as far away from my family as I can get, oh plus I have a mortgage and my place wouldn’t sell, it needs stuff doing to it so I gave up a long time ago on my yard, I’ve just got flax and weeds now. [NPM11, Wahine Māori, 46-55, Tangata Whaiora

This and other dynamics are explored through the useful approach of Social Network Analysis in the following section.

8.3 Social Network Analyses

A SNA approach was enabled by coding transcripts for key themes including those nodes or processes of support that Tangata Whaiora accessed post-disaster. SNA incorporates a number of methods to analyse how individuals and organizations are connected by one or more types of interdependency such as kinship, geographic proximity, economic interdependence, beliefs, knowledge or culture.

Four different software packages were trialled for analyses: NVivo (QSR International, 2014), Dedoose (Sociocultural Research Consultants, 2014), UCINET (Borgatti, Everett, & Freeman, 2002) and NodeXL (Social Media Research Foundation, 2013). NVivo was used initially but files were subsequently transferred to Dedoose, a cloud-based database system that enabled a colleague (Dr. Margaret Wilke) to work with the data while based in Pōneke. (See Lambert, Wilkie, et al., 2014). Transcripts were coded to themes identified by myself and Dr. Wilkie. SNA was then operationalised by transferring raw data (mention or 'presence' of a theme in transcripts) into a spreadsheet which could then loaded into the UCINET and NodeXL software. Some relationships are between institutions, such as central government in its support for various health agencies including the Canterbury District Health Board (CDHB), the NZ Defence Force and so on, and then funding support from the CDHB to various health providers. Voluntary organisations are also significant, each of which has particular funding and operational relationships (although full details of these were not always known or available).

Various analyses could then be performed by the software including producing useful schematics of network relationships either explicitly named (by the participant) or observed (by the researcher), noted by another participant or collated from desktop research and feedback. Figure 14 below shows the network identified from the only two participants aged 18-25.

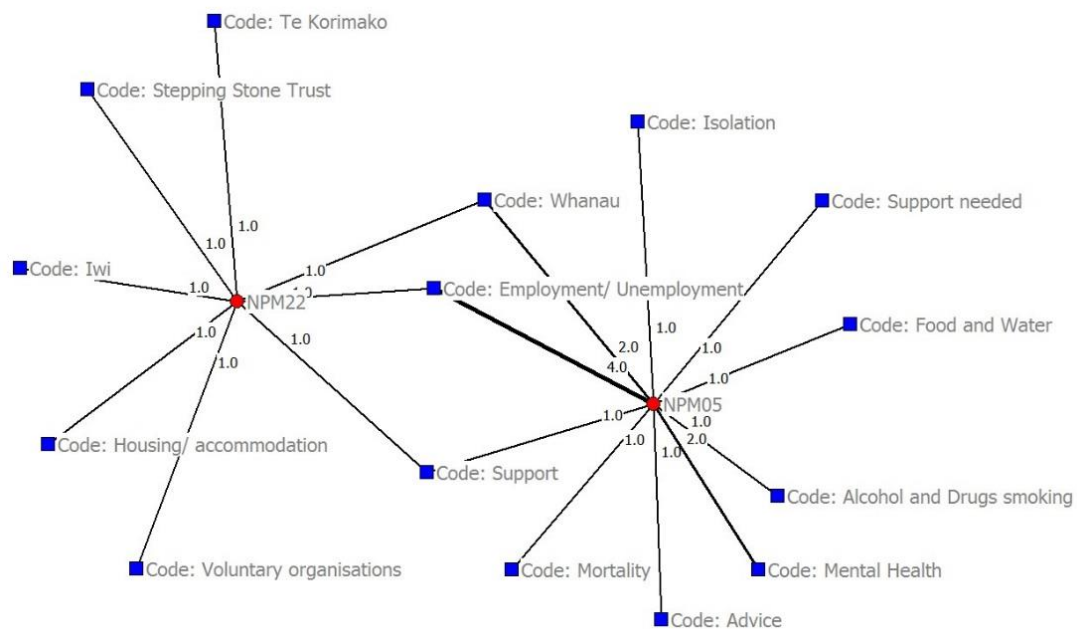


Figure 14: UCINET network diagram of post-disaster support (blue squares) named by Tangata Whaiora participants aged 18-25 (red dots)

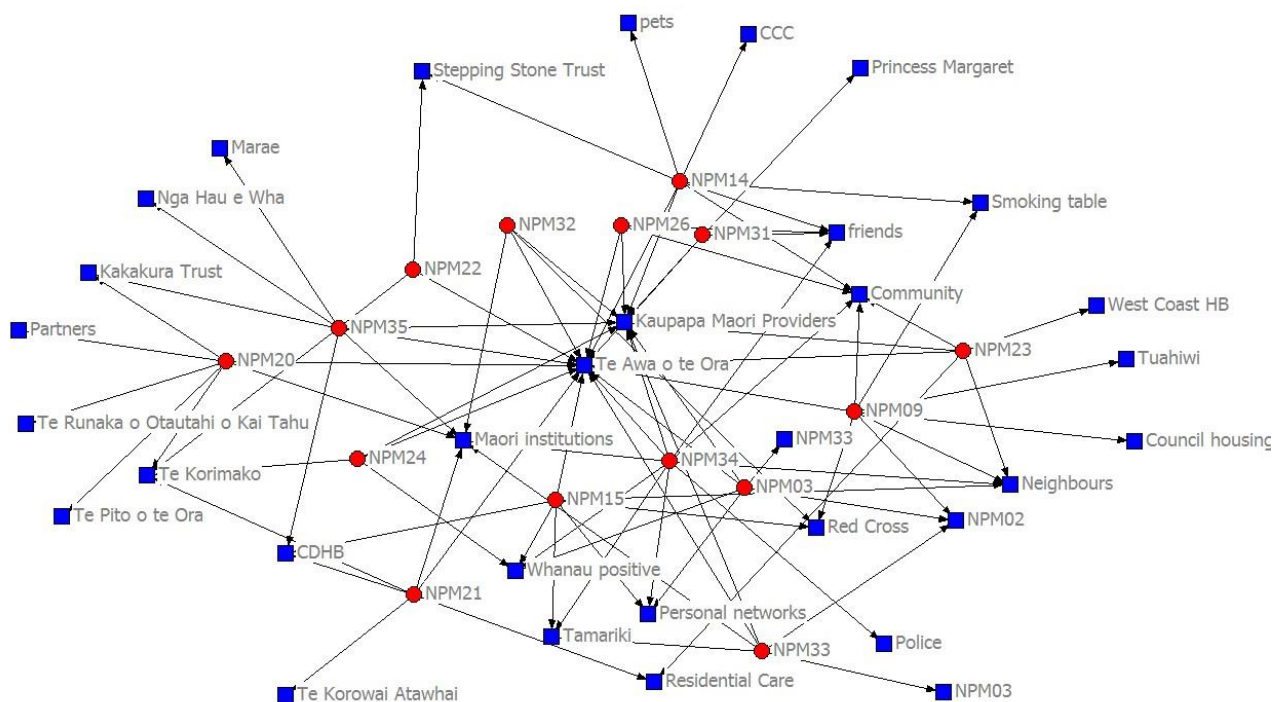


Figure 15: Post-disaster support (blue squares) named by Male participants (red dots)

While the heuristic use of such schematics is valuable, of more interest for the purposes of this research are comparisons of different groups of participants in their support characteristics. One SNA tool for analysing networks is **graph density**, a measure of the ‘general level of linkage’ (Scott, 2000, p. 69) among, for this research, participants of Te Awa o te Ora and the wider supports for mental health in Christchurch post-disaster. Table 9 lists graph density using NodeXL’s ‘group matrix’ function.¹⁴

| Category | Graph Density | Vertices | Total Edges | Edges with duplicates |
|-----------------|---------------|----------|-------------|-----------------------|
| Managers | 0.190 | 15 | 22 | 4 |
| Staff | 0.150 | 18 | 23 | 0 |
| Pākehā | 0.113 | 25 | 34 | 0 |
| Tane | 0.084 | 43 | 72 | 2 |
| Wahine | 0.081 | 47 | 85 | 6 |
| Māori | 0.066 | 61 | 117 | 8 |
| Tangata Whaiora | 0.065 | 60 | 114 | 2 |

Table 9: Graph densities for different groups of participants

¹⁴ This is a ratio that compares the number of edges in the graph with the maximum number of edges the graph would have if all the vertices were connected to each other. Duplicate edges and self-loops are ignored.

This shows that managers have the most dense connectivity (see Figure 16) is not surprising, and staff are also very well ‘connected’. This is interesting as most staff are tangata whaiora who have the *least* dense linkages in the post-disaster landscape of Ōtautahi. Do staff collect connections through their positions? Certainly there are opportunities for networking in their roles; or are they selected for staff because of their greater connections? Or a combination of the two? Follow up interviews on this point highlighted how those Tangata Whaiora with connections, and a proactive response to opportunities for great connectivity (e.g., training and education opportunities) were selected for staff and leadership roles (Board member, pers. comm.).

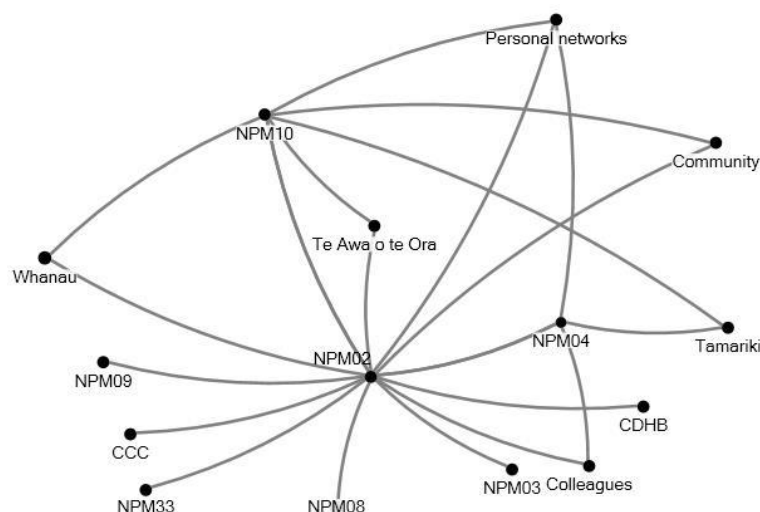


Figure 16: Post-disaster supports for participating managers

Table 10 breaks down the data into the various age groups. There are not significant differences between the ‘younger’ categories but the older group of 56-66 year olds is a little less densely connected.

| Age Group | Density | Vertices | Edges | Edges with duplicates |
|--------------------|---------|----------|-------|-----------------------|
| 18-25 ¹ | 0.127 | 24 | 35 | 0 |
| 26-35 | | | | |
| 36-45 | 0.112 | 20 | 22 | 0 |
| 45-56 | 0.113 | 30 | 49 | 0 |
| 56-65 ¹ | 0.081 | 36 | 49 | 4 |
| 66+ | | | | |

Table 10: NodeXL graph densities by age group.

¹ Due to small numbers in the 18-25 and 66+ age groups, these are combined with adjacent categories.

8.4 Discussion

A key aim of this research was to describe, interpret and analyse the networks of Tangata Whaiora post-disaster. The series of interviews we conducted with participants of Te Awa o te Ora's networks painted a picture of rapid clustering by Whaiora with friends and whānau although as noted, several Whaiora explicitly exclude themselves from whānau for previously unsafe experiences. Support staff and professional mental health services facilitated the continuing care and extra care needed because of situational mental health changes, i.e., stress and anxiety from the earthquakes themselves.

Māori are more mobile than Pākehā (Sin & Stillman, 2005), a phenomenon that may originate with economic marginalisation and the search for employment and education opportunities but which is exacerbated in a disaster (Lambert, 2014a). Tangata Whaiora are even more mobile but while many of our participants may know their iwi and marae, they are rarely in any contact with tribal organisations.

Graph density enables us to compare different groups of participants in mental health support for their linkages in a post-disaster landscape. While the rankings indicate a clear order of connectivity, headed by managers and showing Tangata Whaiora as the least connected, the variety of nodes of support identified by Whaiora (and Māori) indicate resilient network based on the diversity of options. In using this method it is important to realise the broad analysis it undertakes, quantifying what are essentially *qualities*, namely the embodied engagement people make with each other and organisations. This is not to say the numbers are not important but that a number does not fully describe the value or efficacy of connectivity. Many Tangata Whaiora did not have a large number of connections but what connections they did have were invaluable in maintaining the support they needed post-disaster.

Critiques of resilience discourse from, *inter alia*, political science noted in Section 3.1.1 provide a sobering assessment of the wider context in which Tangata Whaiora support operates. Mackinnon and Derickson (2013, p. 255) argue that the varying scales at which resilience is threatened and enabled 'fosters an internalist conception which locates the sources of resilience as lying within the particular scale in question.' This results in resilience policy seeking to devolve what Peck and Tickell (2002: 386) have called 'responsibility without power', requiring communities and places to take whatever is thrown at them – by high finance, natural environment, state and regional governments – and adapt and survive. In Aotearoa New Zealand, funding pressures see ongoing challenges to stretch funding and 'do more with less'.

While more attention is now being given to Indigenous Knowledge (IK) and its role in disaster risk reduction (Shaw, Sharma, & Takeuchi, 2009), this research tends to focus on Traditional Ecological Knowledge (TEK) and does not incorporate the experiences of urbanizing communities and those Indigenous individuals and collectives that are distant from their traditional territories and living in circumstances where their IK/TEK is not necessarily relevant or accurate. Despite the forced movement of Tangata Whaiora across a post-disaster landscape and sometimes beyond to other cities and towns, TATO clients were almost always secure, cared for, medication provided, and contact maintained. This expression of Māori culture elevates the post-contact *urban* sociological understandings that Indigenous communities have developed (Lambert, 2014a).

9. Results 3: What aspects of the response and recovery of Tangata Whaiora are applicable to other Māori and Indigenous communities?

Our interviews provided a wealth of rich data. Most interviews ended with a question on what advice interviewees would give to help others be better prepared for future disasters. Answers revolved around two poles. One was a simple, short but vital list of the basics which included contacts with support people. The other provides a philosophical view of the events and the life in general.

9.1 Preparedness

Some of the Tangata Whaiora were prepared from past experiences with natural disasters such as the Edgumbe earthquake, and also rural living which is a backdrop to many older Māori. Storms, including snow, hit Canterbury regularly and the ongoing aftershocks and publicity meant participants were generally well informed on what to stock and how to react.

Be prepared but don't stress, be cool, calm and collected. I mean every person is different and has a different make up but it's like the old stop, drop and roll: stop, pause, think before you react. But yeah be prepared too, like they say that is common sense. It is always good to have a few cans in the cupboard and have vegie patches and things like that (NPM12, Wahine Māori, 26-35, Tangata Whaiora).

Start storing emergency bits (NPM32, Tane Māori, 36-45, Tangata Whaiora).

Make sure you have food and bottled water and have a plan [to meet up somewhere]. (NPM05, Wahine Māori, 18-25, Tangata Whaiora).

Having emergency kits, which we had. We had that sort of stuff because we used to live out in the country. So we do bulk buying of stuff and take it with us because you can't go down the dairy or the supermarkets. So that's something that we've carried on over the years, even coming back to the city, that we tend to buy a bigger bulk bag of something. We still have an emergency kit, we have First Aid and a couple of sealed containers of just dried foods, coffee and things (NPM15, Tane Māori, 46-55, Tangata Whaiora).

Just make sure you've got plenty of water, tins of food, get yourself stocked up ready for the next one, dunno when that's going to be (NPM30, Wahine Pākehā, 56-65, Tangata Whaiora).

I already live a simple life ... I just fell back on instinct, what I knew and oh probably for me would have been having a radio and actually probably being a bit more prepared with food. See I don't live in that there's going to be this big accident. Like with the big snows ... instead of buying milk, I bought milk powder, simple common sense, I live with common sense (NPM12 Wahine Māori, 26-35, Tangata Whaiora).

The future can be difficult to tell you because you don't know what's going to happen eh, I can't tell you, I mean I can't tell you. All I can say to them is to be strong, stick in there, fight the battle you know meaning be strong, really get in there, help each other out you know, be helping (NPM14 Tane Māori, 56-65, Tangata Whaiora).

Q. What would you say to people in your position to help them prepare for some sort of disaster in the future?

A. There's the standard things about having the emergency kit and stuff, we had all that stuff which was really great ... Those interpersonal networks are really important, I think it's good for people to get to know their neighbours because if something happens and you've got no power and no water for a week or more, weeks and weeks then you need to know the people around you because those are the people you can reach and can reach you (NPM16, Wahine Pākehā, 26-35, Tangata Whaiora).

Help them prepare for one? Well make sure you've got water and warm blankets or something put away somewhere and food, canned food sort of thing, make sure you've got a good stock of something and put it in some place where you can get at it easily. Hopefully you won't need it but if they did well, that would be it (NPM29, Wahine Pākehā, 46-55, Tangata Whaiora).

Definitely a radio that worked because I found ... when we had the radio on just the talkback and there was people from Christchurch nonstop just talking, yeah so I think that is something I suggest. Of course having water... then I suppose you need to have just a grab pack to chuck in the back of the car because sometimes you're not going to be back into your house (NPM 09, Tane Pākehā, 26-35, Staff).

9.2 Connectivity

The cultural practices of *manaakitanga* and *whanaungatanga* were noted in earlier research and emphasise the necessity of connecting with people regardless of the disaster. Maintaining relationships and contact was noted by managers, staff and many Tangata Whaiora as fundamental to wellbeing and safety.

One big one would be don't be ashamed to ask for help, ... the ones we can always tell are the people in really bad situations, they're always the ones who start off the phone call with "I know there are people worse off than me" and I'm like "oh god, do you have four walls right now?!". A lot of the people who really needed assistance are the ones who feel like they shouldn't ask for it and that ties into stuff that is quite hard on a lot of the guys because they feel they've got to be really... capable and look after everything, staunch (NPM16 Wahine Pākehā, 26-35, Tangata Whaiora).

Just keep in contact with the mental health and Māori Mental Health, especial Māori Mental Health if you're Māori and just trust them they know what they're doing... yeah if it wasn't for places like this I'd just be roaming the streets ay? It gives me somewhere to go when I've got nothing to do' (NPM21, Tane Māori, 46-55, Tangata Whaiora).

For me it is to get contacts, support contacts like staff you know and just say if you feel a bit afraid. So all they need to do is just prepare themselves, you know get everything prepared like a first aid kit, food, water, torch, all those.... sorts of stuff so like if the power cuts and they got no power they've got something there. We're lucky because we've got a woodburner and we've got two gas stoves we don't even use and we will probably donate it to someone who really needs it (NPM28, Wahine Māori, 26-35, Tangata Whaiora).

Keep in contact with the organisation that you are with, always keep in contact and if possible join others, talk to other people, keep yourself from being alone and don't stay alone because that's when the bad thoughts happen... just, help each other, look after each other. We're all supposed to do that (NPM25, Wahine Māori, 46-55, Tangata Whaiora).

Make sure you've got the supports around you before it happens, try and make sure you've got no financial problems, just be careful and make sure you've got your supports around you. See I've got no-one around us really ... yeah and that happens in Mental Health isolation, because of the earthquake too, a lot of them do isolate themselves (NPM33 Tane Māori, 46-55, Staff).

A. We've got through one, we'll get through another one, we'll have to go, we'll just do it together because we're all in the same boat, yeah, you know we survived 2011, 180 people didn't but we did, we were fortunate enough to but we did that by staying together you know, we'll find a way to stay together, that would be my ultimate thing to say ... you know, the more people you have around you the easier it is to get through it you know and I actually agree with it (NPM03 Tane Pākehā, 46-55, Staff).

9.3 Homes, housing and insurance

While many Whaiora are reliant on residential care and social housing for accommodation, a significant number do have their own housing, as do staff and managers. The decision to stay or leave was a difficult one for many, and intimately tied up into their housing, employment, whānau and personal health contexts.

Make sure that you've got insurance! I guess that's the biggie for most people. Watch what they're doing when they're purchasing their property, yeah where there is quite a lot of land becoming available it may assist them to build new houses on, that's about all I can think of off the top of my head (NPM27 Wahine Pākehā, 46-55, Tangata Whaiora).

Q. So what would you say to Tangata Whaiora to help them to prepare for something, if something like this was to happen again, what advice would you give?

A. Fucking leave.

Q. You're not the first to say that.

A. Well if they're worried about it they should leave, really, if they're worried about another one it's time to go. I just don't care personally, yeah, I'm not going anywhere, I like Christchurch, it got me away from my family, got me sober, got me diagnosed. [NPM11, Wahine Māori, 46-55, Tangata Whaiora]

9.4 'Look after your hardy soul'

People gave spiritual, physical and common sense advice for others.

Don't put too much stock in material things, don't! It's only a house. Look after your soul, look after your hardy soul and that will keep you strong and see you through (NPM13 Wahine Māori, 36-45, Tangata Whaiora).

They should have moved Christchurch to a whole new place! The city, they should have gone and built it on some more safe ground other than building it on the ... marshlands that it was originally on (NPM07, Wahine Māori, 36-45, Tangata Whaiora).

9.5 Summary

Tangata Whaiora possess experience of 'small-scale' personal and family disasters and were not necessarily as shocked by the loss of normality as many so-called normal people. The organic provision of clear leadership, outstanding commitment by staff, and ongoing personal and institutional dedication in the very trying circumstances of working in a post-disaster landscape all contributed to Te Awa o te Ora's notable response to the earthquakes. All but one client were tracked and supported by Te Awa o te Ora. The isolation experienced by many

Māori participants from the cultural networks posited as important for Māori emphasises the need for strong connections across organisations and communities as a necessary pre-condition for an effective disaster response.

As Māori institutions such as whānau, marae and kura are promoted as disaster response nodes, it should be noted that for many Tangata Whaiora cannot or will not access these fundamental cultural institutions. They will remain reliant on Kaupapa Māori organisations and the networks these organisations have with each other and mainstream organisations in proactively drawing their clients into support networks. Assuming that 'traditional' Māori cultural institutions are fundamental to the 'Māori response' risks ignoring the diversity of Māori, a significant number of whom are physically and/or socially distant from these networks.

10. Conclusions

This report has combined two approaches – interviews and Social Network Analysis – to describe and analyse the post-disaster support networks for Tangata Whaiora in Ōtautahi. It has found both frightening and exhilarating experiences for participants, with a diversity of support nodes for mental health clients in the city although many individuals relied on a very limited number of people and organisations.

10.1 Connectivity

Connectivity is both a cultural norm for Māori and other Indigenous Peoples (Durie, Fitzgerald, Kingi, McKinley, & Stevenson, 2002) and a post-disaster need for the health and wellbeing of Tangata Whaiora. These two factors came together in the Te Awa o te Ora response to the Ōtautahi earthquakes. Allied with committed leadership, dedicated staff, and ongoing efforts in very demanding circumstances, almost all Tangata Whaiora who were a part of Te Aa o te Ora's network were tracked and supported.

The need for strong connections across organisations and communities is also clearly evident as a necessary pre-condition for an effective disaster response. This was embodied in the personal and professional networks of managers and staff. The strength of the support network for Tangata Whaiora as a community is the size and diversity of the support 'nodes' whether based on iwi/hapu, marae, ngā maata waka, government, council, NGO, or voluntary organisations. However, for many individual Whaiora, support came from just a handful of sources and remains vulnerable to forces beyond the control of the individual. Although Tangata Whaiora drew on whānau and friends to get through the disaster, similar to the response of Māori described in earlier projects (see Lambert, 2014a, Forthcoming 2015; Lambert et al., 2012), a significant number did not or could not rely on whānau, a result of negative past and present experiences. While programmes exist to address this isolation, connection with immediate and extended family remains tenuous for the most vulnerable.

An extension of this important if unfortunate circumstance is the observation that Māori support is comprised of immediate, physically embodied, engagement and physically distant but socio-culturally proximate institutions that may not feature in the networks of Tangata Whaiora (though this can be remedied) but which operate at a higher level as a fitful but pregnant resource. In promoting Māori institutions such as marae and whānau as disaster response nodes, it is vital to note that some of the more vulnerable members of our communities cannot or will not access these fundamental cultural institutions and require some form of brokerage to entice and entwine them into the rich resources of cultural support, which staff and managers 'tap' due to their greater connectivity. Their reliance will be on a limited number of friends or contacts, notably Kaupapa Māori organisations and the networks these organisations have with each other and mainstream organisations.

10.2 Overlapping disasters

Given the massive challenges to individuals and whānau post-disaster, previous traumas and disasters remain evident and can be summarised as ongoing response and recovery phases which overlap with the current response/recovery phase. By extension, the existence of overlapping reduction and readiness phases to other ongoing 'disasters' (for example, the drug

and alcohol issues, family violence, unemployment and relocation) massively complicate the necessary response and recovery to the immediate disaster of the earthquakes.

It was noted at the outset of this report that the wider challenges to Indigenous communities stemming from colonisation, historical oppression and contemporary marginalisation constrain and limit the participation of Māori in various interconnected state, regional and local networks responsible for disaster and emergency management. This was certainly the observation from experienced observers of Māori in the Eastern suburbs and is supported by the poor wellbeing scores from the CERA Wellbeing Survey (see Figure 8) and is echoed in international case studies (Lambert, Athayde, et al., 2014).

The major risk identified from this research is that the conceptual and organisational isolation that Whaiora and others experience in understanding and readying for other disasters compounds whatever vulnerability they may already have due to their economic marginalisation, ethnicity, and state of mental health. Simply put, Tangata Whaiora are not in a position to strategise, individually or collectively, and therefore cannot determine their own disaster risk reduction approaches but must instead rely on wider societal acknowledgment of their particular needs.

10.3 Relevance to other communities

Tangata Whaiora identified strategies and tactics for urban disaster risk reduction. At the strategic level they knew that contacts with support people (professionals and peers) was more likely to enable support when needed. The provisioning of emergency kits and knowing neighbours were also pre-disaster actions which allowed a certain security in the post-disaster landscape which was somewhat dissolved by the ongoing seismic activity that only slowly dissipated.

Tactically, Tangata Whaiora know that asking for and offering assistance all contributed to their wellbeing and the wellbeing of others, this reciprocal arrangement also increasing their sense of worth and participation. These actions are regularly and rhythmically attested to and verbalised in *waiata*, *karakia*, conversation and in art.

Finally Tangata Whaiora have particular philosophical insights into modern life that instruct us all on how to live in a disrupted world. In particular much of their advice de-emphasises material possessions and elevate personal relationships as their worlds pre- and post-disaster were reliant on strong interpersonal contacts. These contacts were often initiated by friends, whānau, and staff who cared and expressed that care in physical visits (especially door-knocking post-disaster), social contacts (such as phone calls and texts), and advocacy within the various bureaucracies Tangata Whaiora had to negotiate for medicine, housing, and counselling.

The final words come from a participant just quoted in the last section - 'look after your hardy soul' - an acknowledgement of how tough we are, or can be, spiritually, emotionally, psychologically, mentally. Everyone will be tested in their lives, though we might hope not by events of this magnitude with its death and devastation. But when we are, we might hope to approach it with the strength and insight of these Tangata Whaiora.

Ka mau te wehi, ngā toa! Tena koutou, tena koutou, tena koutou katoa!

11. References

- Albala-Bertrand, J. M. (2003). Urban disasters and globalization. In A. Kreimer, M. Arnold & A. Carlin (Eds.), *Building safer cities: the future of disaster risk* (pp. 75-82). Washington: World Bank.
- Aldrich, D. P. (2012). *Building resilience: social capital in post-disaster recovery*. Chicago: University of Chicago Press
- Allen, K. M. (2006). Community-based disaster preparedness and climate adaptation: local capacity-building in the Philippines. *Disasters*, 30(1), 81-101. doi:10.1111/j.1467-9523.2006.00308.x
- Allen, W., Ataria, J. M., Apgar, J. M., Harmsworth, G., & Tremblay, L. A. (2009). Kia pono te mahi putaiao - doing science in the right spirit. *Journal of the Royal Society of New Zealand*, 39(4), 239-242. doi:10.1080/03014220909510588
- Bannister, S., & Gledhill, K. (2012). Evolution of the 2010–2012 Canterbury earthquake sequence. *New Zealand Journal of Geology and Geophysics*, 55(3), 295-304. doi:10.1080/00288306.2012.680475
- Beck, U. (2006). Living in the world risk society. *Economy and Society*, 35(3), 329-345.
- Beckett, J. V., Wilkinson, S., & Potangaroa, R. (2010, 2-3 September, 2010). *Post-disaster recovery: multi-agency leadership and co-ordination*. Paper presented at the meeting of the The construction, building and real estate research conference of the Royal Institute of Chartered Surveyors, Dauphine Universite, Paris. doi:<http://hdl.handle.net/10652/1562>
- Berkes, F., Colding, J., & Folke, C. (Eds.). (2003). *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change*: Cambridge University Press.
- Binning, E. (2011). Christchurch earthquake: Thousands of refugees head for Auckland. Retrieved MArch 31, 2014, from APN Holdings NZ Ltd. http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10710235
- Bishop, R. (1999). Kaupapa Maori Research: An indigenous approach to creating knowledge. In N. Robertson (Chair), *Maori and Psychology Research Uni*. Symposium conducted at the meeting of the Maori Psychology: Research and Practic, Hamilton.
- Blakely, E. (2011). *The Master of Disaster*. United States: Createspace.
- Borgatti, S. P., Everett, M. G., & Freeman, L. C. (2002). Ucinet 6 for Windows: Software for Social Network Analysis. from Analytic Technologies
- Brunsmas, D. L., Overfelt, D., & Picou, J. S. (Eds.). (2010). *The Sociology of Katrina: perspectives on a modern catastrophe*. Lanham: Rowman and Littlefield.
- Cairns, L. (2011, February 20). Residents urged to take The Pledge. *The Press*. Retrieved from <http://www.stuff.co.nz/the-press/news/christchurch-earthquake-2011/4789137/Residents-urged-to-take-The-Pledge>
- Cairns, L. (2014a, 07/05/14). Christchurch in financial strife. *The Press*. Retrieved from <http://www.stuff.co.nz/national/10019150/Christchurch-in-financial-strife>
- Cairns, L. (2014b, October 1). Tough choices as roading kitty dries up. *The Press*. Retrieved from <http://www.stuff.co.nz/the-press/news/transport/10563843/Tough-choices-as-roading-kitty-dries-up>
- Canterbury District Health Board. (2014). *Te Korowai Atawhai/Maori Mental Health Service*. Retrieved January 27, 2014, from <https://www.cdhb.health.nz/Hospitals-Services/Mental-Health/Maori-Mental-Health/Pages/default.aspx>
- Canterbury Earthquake Recovery Authority. (2013). *Wellbeing Survey September 2013*. Christchurch: CERA. Retrieved from <http://cera.govt.nz/sites/cera.govt.nz/files/common/cera-wellbeing-survey-september-2013-report-20140318.pdf>
- Canterbury Earthquake Recovery Authority. (2012). *Canterbury Earthquake Recovery Authority Wellbeing Survey 2012*. Christchurch: Canterbury Earthquake Recovery Authority/Nielsen. Retrieved from <http://cera.govt.nz/sites/cera.govt.nz/files/common/cera-wellbeing-survey-2012-report-20120220.pdf>
- Canterbury Earthquakes Royal Commission. (2011). *Interim Report*. Christchurch: Canterbury Earthquakes Royal Commission.
- Christchurch City Council. (2012). *Facilities Rebuild Programme*. Retrieved May 30, 2012, from <http://www.ccc.govt.nz/thecouncil/councilfacilities/facilitiesrebuildprogramme.aspx>
- Comfort, L. K., Boin, A., & Demchak, C. C. (2010). *Designing Resilience: Preparing for Extreme Events*. Pittsburgh: University of Pittsburgh Press.
- Conradson, D. (2003). Geographies of care: spaces, practices, experiences. *Social & Cultural Geography*, 4(4), 451-454. doi:10.1080/1464936032000137894
- Cote, M., & Nightingale, A. J. (2012). Resilience thinking meets social theory: Situating social change in socio-ecological systems (SES) research. *Progress in Human Geography*, 36(4), 475-489.
- Coverdale, J., Nairn, R., & Claasen, D. (2002). Depictions of Mental Illness in Print Media: A Prospective National Sample. *Australian and New Zealand Journal of Psychiatry*, 36(5), 697-700. doi:10.1046/j.1440-1614.2002.00998.x
- Davenport, P. N. (2004). *Review of seismic provisions of historic New Zealand loading codes*. Paper presented at the meeting of the New Zealand Society for Earthquake Engineering, Retrieved from <http://db.nzsee.org.nz/2004/Paper17.pdf>

- Dawson, J. (2013). The complex meaning of 'mental disorder'. In J. Dawson & K. Gledhill (Eds.), *New Zealand's Mental Health Act in Practice* (pp. 29-45). Wellington: Victoria University Press/NZ Law Foundation.
- Dawson, J., & Gledhill, K. (Eds.). (2013). *New Zealand's Mental Health Act in Practice*. Wellington: Victoria University Press/New Zealand Law Foundation.
- de Bruijne, M., Boin, A., & van Eeten, M. (2010). Resilience: exploring the concept and its meanings. In *Designing Resilience: preparing for extreme events* (pp. 13-32). Pittsburgh: University of Pittsburgh.
- Del Popolo, F., Oyarce, A. M., Ribotta, B., & Jorge, R. (2007). *Indigenous peoples and urban settlements: spatial distribution, internal migration and living conditions*. Santiago: United Nations.
- Dow, D. A. (1999). *Maori Health and Government Policy 1840-1940*. Wellington: Victoria University Press.
- Durie, M. (1999). Mental health and Maori development [Article]. *Australian & New Zealand Journal of Psychiatry*, 33(1), 5-12. doi:10.1046/j.1440-1614.1999.00526.x
- Durie, M., Fitzgerald, E., Kingi, T. K., McKinley, S., & Stevenson, B. (2002). *Maori Specific Outcomes and Indicators*: Te Puni Kokiri/Ministry of Maori Development.
- Elder, H., & Tapsell, R. (2013). Maori and the Mental Health Act. In J. Dawson & K. Gledhill (Eds.), *New Zealand's Mental Health Act in Practice* (pp. 249-267). Wellington: Victoria University Press.
- Ensor, B., & Stylianou, G. (2014). Residents: Why are we still living like this? *The Press*, p. A5.
- Feinstein, D. (2014). *Senate Intelligence Committee Releases Report on CIA Detention, Interrogation Program*. Washington. Retrieved from <http://www.intelligence.senate.gov/study2014/sscistudy1.pdf>
- Fothergill, A., Maestas, E. G. M., & Darlington, J. D. (1999). Race, Ethnicity and Disasters in the United States: A Review of the Literature. *Disasters*, 23(2), 156-173. doi:10.1111/1467-7717.00111
- Gesler, W. M. (1992). Therapeutic landscapes: Medical issues in light of the new cultural geography. *Social Science & Medicine*, 34(7), 735-746. doi:[http://dx.doi.org/10.1016/0277-9536\(92\)90360-3](http://dx.doi.org/10.1016/0277-9536(92)90360-3)
- Gilbert, J., & Elley, B. (2013). *Living on the Fringes: A report on the issues and perceptions of residents near the Red Zones*. Christchurch: Te Runanga o Nga Mata Waka. Retrieved from <http://maatawaka.org.nz/s/Report-Living-on-the-Fringes-Final-Version-250613-490a.pdf>
- Gill, T., Steger, B., & Slater, D. H. (2013). The 3.11 disasters. In T. Gill, B. Steger & D. H. Slater (Eds.), *Japan copes with calamity: ethnographies of the earthquake, tsunami and nuclear disasters of March 2011* (pp. 3-24). Oxford: Peter Lang.
- Gluckman, P. (2012, May 10). 'Try to give people a sense of control'. *The Press*, p. A17.
- Goodyear, R. (2014). *Housing in greater Christchurch after the earthquakes: Trends in housing from the Census of Population and Dwellings 1991-2013*. Wellington: Statistics NZ.
- Hamer, P. (2008). One in six? The rapid growth of the Maori population in Australia. *Population Association of New Zealand*, 33/34, 153-176.
- Hammer, D. (2009, November 2). Ed Blakely lambastes New Orleans, saying its residents are racist, lazy. *The Times-Picayune*. Retrieved from http://www.nola.com/politics/index.ssf/2009/11/post_112.html
- Hart, D., & D. Hart. (2012). *Making Coastal Cities Resilient: Lessons from Christchurch*. Christchurch: University of Canterbury/CEISMIC/UC Quake Studies.
- Harvey, D. (2005). *A brief history of neoliberalism*. Oxford, U.K.: Oxford University Press.
- Harvey, G. (2003). Guesthood as Ethical Decolonising Research Method. *Numen*, 50(2), 125-146.
- Heather, B. (2011). September Canterbury earthquake 'saved lives'. *Stuff*. Retrieved from <http://www.stuff.co.nz/national/5919904/September-Canterbury-earthquake-saved-lives>
- Holling, C. (1973). Resilience and the stability of ecological systems. *Annual Review of Ecology and Systematics*, 4(1), 1-23.
- Jessop, B. (2000). The Crisis of the National Spatio-Temporal Fix and the Tendential Ecological Dominance of Globalizing Capitalism. *International Journal of Urban and Regional Research*, 24(2), 323-360.
- Kaupapa Maori and Pacific NGO Collective. (2013). *Proposaed Models*. Christchurch: Kaupapa Maori and Pacific NGO Collective.
- Kelsey, J. (1995). *The New Zealand Experiment: a world model for structural adjustment?* (1st ed.). Auckland: Auckland University Press.
- Killian, L. M. (2002). An introduction to methodological problems of field studies in disasters. In R. A. Stallings (Ed.), *Methods of Disaster Research* (pp. 49-93): International Research Committee on Disasters.
- Kingi, T. K. R. (2011). Maori mental health: past, present and future. In T. McKintosh & M. Mullholland (Eds.), *Maori and Social Issues* (Vol. 1, pp. 89-107). Wellington: Huia.
- Kirmayer, L., Dandeneau, S., Marshall, E., Phillips, M., & Williamson, K. (2012). Toward an ecology of stories: Indigenous perspectives on resilience. In M. Ungar (Ed.), *The social ecology of resilience* (pp. 399-414). New York: Springer.
- Knoke, D., & Yang, S. (2008). *Social Network Analysis* (2nd ed.). Thousand Oaks, CA: SAGE Publications, Inc. doi:<http://dx.doi.org/10.4135/9781412985864>. Retrieved from SAGE Research Methods database.
- Lambert, S. (2008). *The Expansion of Sustainability through New Economic Space: Maori potatoes and Cultural Resilience*. Saarbrücken: Vdm Verlag Dr. Müller Aktiengesellschaft & Co. Kg.

- Lambert, S. (2012a). *Impacts on Māori of the Ōtautahi/Christchurch earthquakes*. Christchurch: Lincoln University. Retrieved from <http://www.lincoln.ac.nz/conversation/maori-resilience/files/2013/01/Maori-Resilience-to-the-Otautahi-earthquakes-updated-2.7.pdf>
- Lambert, S. (2012b). *Māori through the Otautahi earthquakes: Indigenous resilience in an urban disaster*. Paper presented at the meeting of the 5th Biennial International Network of Indigenous Health Knowledge and Development Conference: Building Resilience: Renewing Individuals, Families and Communities, University of Queensland, St Lucia campus, Brisbane September 24-28, 2012.
- Lambert, S. (2014a). Indigenous Peoples and urban disaster: Māori responses to the 2010-12 Christchurch earthquakes. *Australasian Journal of Disaster and Trauma Studies*, 18(1), 39-48. doi:http://www.massey.ac.nz/~trauma/issues/2014-1/AJDTs_18-1_Lambert.pdf
- Lambert, S. (2014b). Maori and the Christchurch earthquakes: the interplay between Indigenous endurance and resilience through a natural disaster. *MAI Journal*, 3(2), 165-180. http://www.journal.mai.ac.nz/sites/default/files/MAI_Jrnl_V3_iss2_Lambert.pdf
- Lambert, S. (Forthcoming 2015). Maori homes through the 2010-2012 Otautahi earthquakes. In M. Kepa, L. Manuatu & M. Brewin (Eds.), *Home: Here to stay*. Auckland: Nga Pae o te Maramatanga.
- Lambert, S., Athayde, S., Yin, L., Baudoin, M.-A., & Okorie, V. O. (2014, 7 – 9 June). Integrating Indigenous Knowledge into Decision and Policy-making for Disaster Risk Reduction In IRDR (Chair), *IRDR*. Symposium conducted at the meeting of the 2nd IRDR Conference: Integrated Disaster Risk Science: A Tool for Sustainability, Beijing. Retrieved from <http://www.irdrinternational.org/conference-2014/programme/indigenous-and-vulnerable-populations/#Simon>
- Lambert, S., & Mark-Shadbolt, M. (2012). Maori experiences and expressions of leadership through the Christchurch/Otautahi earthquakes. In H. Ross (Chair), *Nga Pae o te Maramatanga*. Symposium conducted at the meeting of the Traditional Knowledges, Auckland. Retrieved from <http://www.maramatanga.ac.nz/sites/default/files/NPM%20Conference%20Proceedings%202012.pdf>
- Lambert, S., Mark-Shadbolt, M., Ataria, J. M., & Black, A. (2012). Indigenous resilience through urban disaster: Māori and the Christchurch/Otautahi earthquakes. In H. Ross (Chair), *Nga Pae o te Maramatanga*. Symposium conducted at the meeting of the International Indigenous Development Conference 2012, Auckland. Retrieved from <http://www.maramatanga.ac.nz/sites/default/files/NPM%20Conference%20Proceedings%202012.pdf>
- Lambert, S., Wilkie, M., & Mark-Shadbolt, M. (2014). *Kia Manawaroa: surviving disaster*. Christchurch: Lincoln University.
- Latham, C., McCourt, P., & Larkin, C. (2010). *Natural disasters in Australia: Issues of funding and insurance*. Sydney: The Institute of Actuaries of Australia. Retrieved from <http://www.actuaries.asn.au/library/events/GIS/2010/NaturalDisastersInAustralia-Paper.pdf>
- Lerner, R. M. (2006). Resilience as an attribute of the development system: comments on the papers of Professors Masten and Wachs In B. M. Lester, A. S. Masten & B. McEwen (Eds.), *Resilience in children* (pp. 40-51). Boston: Blackwell.
- Lindell, M., & Prater, C. (2003). Assessing Community Impacts of Natural Disasters. *Natural Hazards Review*, 4(4), 176-185. doi:10.1061/(ASCE)1527-6988(2003)4:4(176)
- MacKinnon, D., & Derickson, K. D. (2013). From resilience to resourcefulness: A critique of resilience policy and activism. *Progress in Human Geography*, 37(2), 253-270. doi:10.1177/0309132512454775
- McDaniels, T., Chang, S., Cole, D., Mikawoz, J., & Longstaff, H. (2008). Fostering resilience to extreme events within infrastructure systems: Characterizing decision contexts for mitigation and adaptation. *Global Environmental Change*, 18(2), 310-318.
- MCDEM. (2008). *National Civil Defence Emergency Management Strategy 2007*. Wellington: Ministry of Civil Defence and Emergency Management. Retrieved from [http://www.civildefence.govt.nz/memwebsite.NSF/Files/National_CDEM_Strategy/\\$file/National-CDEM-strategy-2008.pdf](http://www.civildefence.govt.nz/memwebsite.NSF/Files/National_CDEM_Strategy/$file/National-CDEM-strategy-2008.pdf)
- Megget, L. M. (2006). From brittle to ductile: 75 years of seismic design in New Zealand. *Bulletin of the New Zealand Society for Earthquake Engineering*, 39(3), 158-169.
- Mental Health Education and Resource Centre. (2014). *MHERC*. Retrieved March 10, 2014, from <http://mherc.org.nz/>
- Mies, M. (1991). Women's research or feminist research? The debate surrounding feminist science and methodology. In M. Fonow & J. Cook (Eds.), *Beyond methodology: Feminist scholarship as lived research* (pp. 60-84). Bloomington and Indianapolis: Indiana University Press.
- Miles, S. (2012). *The Christchurch Fiasco: the insurance aftershock and its implications for New Zealand and beyond*. Auckland: Dunmore.
- Moeke-Maxwell, T., Wells, D., & Mellisop, G. W. (2008). Tangata whaiora/consumers perspectives on current psychiatric classification systems. *International Journal of Mental Health Systems*, 2(1), 1-6. doi:10.1186/1752-4458-2-7

- Munich Re. (2012). *Costliest disaster worldwide 2011*. Retrieved June 18th, 2012, from http://www.munichre.com/en/reinsurance/business/non-life/georisks/natcatservice/annual_statistics.aspx
- Neria, Y., Galea, S., & Norris, F. (2009). *Mental Health and Disasters*. Cambridge: Cambridge University Press.
- New Zealand Protection of Personal and Property Rights Act, 90, Part 8 C.F.R. § 90 (1988).
- New Zealand Companies Act (1993).
- Newell, J. (2012). *Towards an understanding of migration following the 2010-2011 Canterbury Earthquakes: Usually resident population estimates for Greater Christchurch and emerging estimates of the migration effects of the earthquakes*. Wellington: Monitoring and Evaluation Research Associates Ltd.
- Nightingale, A. (2003). Nature-society and development: social, cultural and ecological change in Nepal. *Geoforum*, 34(4), 525-540.
- NZ Fire Service. (2012, 15/04/2012 3:32 p.m.). *NZFS to Re-examine its Initial Management of Earthquake Response* Retrieved May 15th, 2012, from <http://www.fire.org.nz/Media/News/2012/Pages/NZFStoRe-examineitsInitialManagementofEarthquakeResponse.aspx>
- NZPA. (2011). Rehab attendance up 10-fold after quake. Retrieved Oct 5, 2011, from APN Holdings NZ Limited http://www.nzherald.co.nz/christchurch-earthquake/news/article.cfm?c_id=1502981&objectid=10701819
- Parker, M., & Steenkamp, D. (2012). The economic impact of the Canterbury earthquakes. *Reserve Bank of New Zealand: Bulletin*, 75(3).
- Parr, H., & Philo, C. (2003). Rural mental health and social geographies of caring. *Social & Cultural Geography*, 4(4), 471-488. doi:10.1080/1464936032000137911
- Paton, D. (2006). Disaster resilience: integrating individual, community, institutional, and environmental perspectives. In D. Paton & D. M. Johnston (Eds.), *Disaster resilience: an integrated approach* (pp. 305-318). Springfield, Illinois: Charles C. Thomas.
- Paton, D., Johnston, D., Mamula-Seadon, L., & Kenney, C. (2014). Recovery and Development: Perspectives from New Zealand and Australia. In N. Kapucu & T. L. Kuotsai (Eds.), *Disaster and Development* (pp. 255-): Springer International Publishing.
- Penehira, M., Green, A., Smith, L. T., & Aspin, C. (2014). Maori and Indigenous views on R & R: resistance and resilience. *MAI Journal*, 3(2), 96-110.
- Pere, R. (n.d.). *Te Wheke*. Retrieved December 3, 2014, from <http://www.health.govt.nz/our-work/populations/maori-health/maori-health-models/maori-health-models-te-wheke>
- Pihama, L., Cram, F., & Walker, S. (2002). Creating Methodological Space: A Literature Review of Kaupapa Maori Research. *Canadian Journal of Native Education*, 26(1), 30-42.
- Pilling, S. (2012). *Independent Review*. Wellington: New Zealand Fire Service. Retrieved from <http://fire.org.nz/Documents/review/Independent%20Review%20-%20final%20report%20Oct%202012.pdf>
- Potangaroa, R., Kipa, M., & Winstanley, A. (2014). *Maori resilience: preliminary results from Rapaki*. Wellington: Ministry of Civil Defence and Emergency Management. Retrieved from <http://www.civildefence.govt.nz/assets/Uploads/publications/Impact/impact-vol53-sept-2014.pdf>
- Potangaroa, R., Wilkinson, S., Zare, M., & Steinfort, P. (2011). The management of portable toilets in the Eastern suburbs of Christchurch after the February 22, 2011 earthquake. *Australasian Journal of Disaster and Trauma Studies*, 2011 - 2, 35-48.
- Prince, R. (2012). Mentally ill to be allowed to become MPs, serve on juries and be company directors. *The Telegraph*. Retrieved from <http://www.telegraph.co.uk/news/politics/9543764/Mentally-ill-to-be-allowed-to-become-MPs-serve-on-juries-and-be-company-directors.html>
- QSR International, &. (2014). *QSR NVivo 10*: QSR International.
- Quarantelli, E. (1954). The nature and conditions of panic. *American Journal of Sociology*, 60, 267-275.
- Ragin, C. (2008). *Redesigning Social Inquiry: Fuzzy Sets and beyond*. Chicago: University of Chicago Press.
- Raphael, B., & Maguire, P. (2009). Disaster mental health research: past, present, and future. In Y. Neria, S. Galea & F. Norris (Eds.), *Mental health and disasters* (pp. 7-28). Cambridge: Cambridge University Press.
- Ria, A. (2011, 7/9/2011). [Interview].
- Russell, L. (2006). *Oho Mauri: Cultural identity, wellbeing, and tangata whaiora/Motuhake* (PhD). Massey, Wellington.
- Scott, J. (2000). *Social Network Analysis: a handbook*. Los Angeles: Sage.
- Shaw, R., Sharma, A., & Takeuchi, Y. (Eds.). (2009). *Indigenous Knowledge and Disaster Risk Reduction: From Practice to Policy*: Nova Science Publishers.
- Sin, I., & Stillman, S. (2005). *The Geographical Mobility of Maori in New Zealand* (05-05). Wellington: Motu Economic and Public Policy Research.
- Slater, D. H. (2013). Urgent ethnography. In T. Gill, B. Steger & D. H. Slater (Eds.), *Japan copes with Calamity* (pp. 25-49). Oxford: Peter Lang.
- Smith, L. T. (1999). *Decolonizing Methodologies: Research and Indigenous Peoples*. Dunedin: University of Otago Press.
- Social Media Research Foundation, &. (2013). *NodeXL*: Social Media Research Foundation/Microsoft.
- Sociocultural Research Consultants. (2014). *Dedoose*. Retrieved from <http://dedoose.webvanta.com/>

- Statistics New Zealand. (2012a). *Census of Population and Dwellings: Table Builder*. Retrieved June 6, 2012, from http://www.stats.govt.nz/tools_and_services/tools/TableBuilder/2006-census-pop-dwellings-tables/culture-and-identity/ethnic-group.aspx
- Statistics New Zealand. (2012b). *Interactive Map Boundary*. Retrieved June 19, 2012, from <http://apps.nowwhere.com.au/StatsNZ/Maps/default.aspx>
- Statistics New Zealand. (2013). *2013 Census QuickStats about greater Christchurch*. Retrieved March 5, 2014, from <http://www.stats.govt.nz/~media/Statistics/Census/2013%20Census/profile-and-summary-reports/quickstats-about-greater-chch/tables.xls>
- Steffen, W., & Hughes, L. (2013). *The Critical Decade 2013: Climate change science, risks and response*. Canberra: Commonwealth of Australia (Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education). Retrieved from https://climatecommission.files.wordpress.com/2013/09/the-critical-decade-2013_website.pdf
- Stevenson, J. R., Kachali, H., Whitman, Z., Seville, E., Vargo, J., & Wilson, T. (2011). Preliminary observations of the impacts of the 22 February Christchurch earthquake had on organisations and the economy: a report from the field (22 February - 22 March). *Bulletin of the New Zealand Society for Earthquake Engineering*, 44(2), 65-76.
- Stock, R. (2014, 5/10/14). EQC warns insurance threatens recovery. *The Press*. Retrieved from <http://www.stuff.co.nz/the-press/business/the-rebuild/10581287/EQC-warns-insurance-threatens-recovery>
- Stylianou, G. (2011). *Drinking at home fans rise in domestic abuse*. Retrieved Oct 5, 2011, from <http://www.chcheqjournal.com/2011/drinking-home-fans-rise-domestic-abuse/>
- Stylianou, G. (2012a, May 3rd 2012). Canterbury couples suffer quake strain. *The Press*, p. A5.
- Stylianou, G. (2012b, April 30th 2012). Maori and young lead quake flight. *The Press*, p. A1.
- Stylianou, G. (2012c, 7/5/12). Rental squeeze hits mental health patients. *The Press*, p. A4.
- Stylianou, G. (2014, September 8). Complaints to EQC top 20,000 in four years. *The Press*, p. A3.
- Tasiopoulou, P., Smyrou, E., Bal, I. E., Gazetas, G., & Vintzileou, E. (2011). *Geotechnical and Structural Field Observations from Christchurch, February 2011 Earthquake, in New Zealand*. Athens: National Technical University of Athens. Retrieved from <http://dl.dropbox.com/u/21382969/Tasiopoulou%20et%20al.%20-%20Geotechnical%20and%20Structural%20Field%20Observations%20from%20Christchurch%2C%20Febru>
[ary%202011%20Earthquake.pdf](http://dl.dropbox.com/u/21382969/Tasiopoulou%20et%20al.%20-%20Geotechnical%20and%20Structural%20Field%20Observations%20from%20Christchurch%2C%20Febru)
- Te Awa o te Ora. (2014). *Providing mental health services for Maori* Retrieved March 10, 2014, from <http://teawatrust.org.nz/>
- Te Puawaitanga ki Otautahi Trust. (2014). *Te Puawaitanga ki Otautahi Trust Whanau Talk Housing*. Christchurch: Te Puawaitanga ki Otautahi Trust.
- Te Runanga o Ngai Tahu. (2012). *Aoraki Matatu: Annual Report 2012*. Christchurch: Te Runanga o Ngai Tahu.
- Thornly, L., Ball, J., Signal, L., Lawson-Te Aho, K., & Rawson, E. (2013). *Final Report to Health Research Council and Canterbury Medical Research Foundation: Health Research Council/ Canterbury Medical Research Foundation*. Retrieved from http://www.lincoln.ac.nz/conversation/maori-resilience/files/2013/04/Building_Community_Resilience_report-March_2013.pdf
- Tierney, K. (2014). *The social roots of risk: producing disasters, promoting resilience*. Stanford, CA.: Stanford Business Books.
- Tipa, G., & Teirney, L. (2003). *A Cultural Health Index for Streams and Waterways: Indicators for recognising and expressing Maori values, Report for MfE*. Wellington: Ministry for the Environment. Retrieved from <http://www.mfe.govt.nz/publications/water/cultural-health-index-jun03/cultural-health-index-jun03.pdf>
- Trosper, R. L. (2002). Northwest coast indigenous institutions that supported resilience and sustainability. *Ecological Economics*, 41(2), 329-344.
- Turner, A. (2013, 25/06/2103). Rebuild tours replace gawkers. *The Press*. Retrieved from <http://www.stuff.co.nz/the-press/news/christchurch-earthquake-2011/8835893/Rebuild-tours-replace-gawkers>
- Turner, J., Davidson-Hunt, I. J., & O'Flaherty, M. (2003). Living on the edge: ecological and cultural edges as sources of diversity for social-ecological resilience. *Human Ecology: An Interdisciplinary Journal*, 31(3), 439-462.
- Tyhurst, J. S. (1950). Individual reactions to community disaster: the natural history of psychiatric phenomenon. *American Journal of Psychiatry*, 107(10), 764-769.
- Ungar, M. (2012). Social ecologies and their contribution to resilience. In M. Ungar (Ed.), *The Social Ecology of Resilience* (pp. 13-32). New York: Springer.
- Whyte, W. F. (1991). *Participatory Action Research*. Newbury Park: Sage Publications.
- Willacy, M. (2013). *Fukushima: Japan's tsunami and the inside story of the nuclear meltdowns*. Sydney: Macmillan.
- Wisner, B. (2003). Disaster risk reduction in megacities: making the most of human and social capital. In A. Kreimer (Ed.), *Building safer cities: the future of disaster risk* (pp. 181-). Washington: World Bank Publications.
- Wood, A. (2012, November 15). Land cover favours rich - EQC boss. *The Press*, p. A13.
- Wood, A., & Chapman, K. (2011). Canterbury dole numbers jump *The Press*. Retrieved from <http://www.stuff.co.nz/national/5250019/Canterbury-dole-numbers-jump>

Wright, M. (2012, September 6). Quake gloom worse in east. *The Press*, p. A2.

12. Appendices

Appendix 1: Research Information Sheet

Lincoln University

Faculty, Department or Research Centre: Faculty of Environment, Society, and Design

Research Information Sheet

You are invited to participate as a subject in a project entitled

Name of project: Networks of Support for Māori Mental Health: The response and recovery of Tangata Whaiora through the Ōtautahi earthquakes.

The aim of this project is to investigate how Tangata Whaiora ('people seeking health', a term applied by Māori to mental health clients) and their support networks are recovering from the Christchurch earthquakes.

Your participation in this project will involve taking part in a recorded interview on how you and your institution were affected by the earthquakes. This interview will take about one hour. You may be asked to check some of the information we have recorded. If you do not wish to be recorded, we will take notes instead.

The results of the project may be published but your identity will not be made public, or made known to any person other than the researcher without your consent. To ensure anonymity, each participant is given a code to be used whenever referring to those comments.

This research is funded by Ngā Pae o te Māramatanga, University of Auckland. If the data from this research is to be used in any future research, you will be contacted and your permission sought before being used. All data stored in secured offices and IT supported digital storage at Lincoln University.

The project is being carried out by:

Dr. Simon Lambert 03 321 8424 mob: 022 061 3583 Email:
simon.lambert@lincoln.ac.nz

He will be happy to discuss any concerns you have about participation in this research.

If you do not wish to contact Dr. Lambert but would like to talk to his senior manager, the contact is:

Greg Ryan Tel: 03 325 3838 extn 8566 Email: greg.ryan@lincoln.ac.nz

The project has been reviewed and approved by the Lincoln University Human Ethics Committee, Application No: 2012-45.

Appendix 2: Consent Form

Name of Project: Networks of Support for Māori Mental Health: The response and recovery of Tangata Whaiora through the Ōtautahi earthquakes.

I understand the description of the above-named project and agree to participate. I consent to publication of the results of the project with the understanding that anonymity will be preserved and on the understanding that I may withdraw from the project, including withdrawal of any information I have provided, up until the beginning of the analyses, the timing of which will be communicated through Te Awa o te Ora and other participants.

I consent/do not consent to being recorded
(If you do not consent to being recorded, notes will be taken).

I consent/do not consent to my contribution being archived for future research.

Name: _____

Signed: _____ Date: _____

Appendix 3: Framework for Korero

1. How did you become involved with Te Awa?
2. Tell us how the earthquakes affected you?
3. What support did you need then?
4. How did your support networks change because of the earthquakes?
5. Who helped you through the earthquakes?
6. What problems do you have to deal with now?
7. How have your lives changed because of the earthquakes?
8. What would have made it easier to get through the disaster?
9. What would you say to Tangata Whaiora to help them prepare for a similar disaster in the future?

10. Is there anything else you'd like to say?

Appendix 4: Dedoose codes

| Primary Code | Secondary Codes | Tertiary Codes | Quaternary Codes |
|-----------------------------------|----------------------|-------------------------------|------------------|
| Advice | | | |
| Alcohol, Drugs, Smoking, Gambling | Gambling | | |
| Benefits | | | |
| Changes after the Earthquakes | | | |
| Christchurch City Council | Council housing | | |
| Community | | | |
| Earthquake | | | |
| Employment/ Unemployment | Catapult | | |
| Food and Water | | | |
| Government | CDHB | Hillmorton | |
| | | Princess Margaret | Seager Clinic |
| | | Te Korowai Atawhai | |
| | | Totara House | |
| | Civil Defence | | |
| | WINZ | | |
| | Dept. of Corrections | | |
| | NZ Army | | |
| | West Coast HB | | |
| | CERA | Residential Advisory Services | |
| Grief | | | |
| Health issues | Medication | | |
| | Mental Health | Tangata whaiora | |
| | | | |
| Housing/ accommodation | Insurance & EQC | | |
| | Sewage / Toilets | | |
| Isolation | | | |
| Leadership | | | |
| Māori institutions | Identity | | |
| | Iwi | | |
| | Nga Hau e Wha | | |
| | Rehua | | |
| | Tuahiwi | | |
| | Māori Wardens | | |
| Mortality | | | |
| Networks | Autism NZ | | |
| | colleagues | | |

| | | | |
|-----------------------------|-------------------------|------------------|--|
| | neighbours | | |
| | Partners | | |
| | friends | | |
| | Kaupapa Māori Providers | Kakakura Trust | |
| | | Te Awa o te Ora | |
| | | Te Korimako | |
| | | Te Pito Ora | |
| | | Te Whare Roimata | |
| | Stepping Stone Trust | | |
| Opportunity | Education | | |
| Private Sector | The Warehouse | | |
| Quotes | | | |
| Residential Care | | | |
| Resilience | | | |
| Space and place | | | |
| Suicide | | | |
| Support | Support needed | | |
| | Support provided | | |
| | Support received | | |
| The Future | | | |
| The Warehouse | | | |
| Transport and Communication | | | |
| Violence and crime | | | |
| Voluntary Organisations | Church | | |
| | Salvation Army | | |
| Wairua | | | |
| Whanau | Whanau negative | | |
| | Whanau positive | | |
| | pets | | |
| | Tamariki | | |
| | Partners | | |

Appendix 5: Dedoose Codes by descriptor

| | Age: 18-25 | Age: 26-35 | Age: 36-45 | Age: 46-55 | Age: 66+ | Ethnicity: Pakeha | Ethnicity: Maori | Gender: Tane | Gender: Wahine | Role: Manager | Role: Tangata Whaiora | Role: Staff | | |
|---------------------------------|------------|------------|------------|------------|----------|-------------------|------------------|--------------|----------------|---------------|-----------------------|-------------|----|---|
| Advice | 1 | 7 | 3 | 4 | 12 | 1 | 1 | 8 | 19 | 10 | 18 | 2 | 21 | 5 |
| Alcohol and Drugs smoking | 1 | 1 | 4 | 4 | 4 | | 1 | 13 | 3 | 11 | 1 | 1 | 11 | 2 |
| Sambling | | | 2 | | | | 2 | 2 | 2 | 2 | 2 | | | |
| Changes after the Earthquakes | | 10 | 5 | 9 | 24 | | 14 | 34 | 16 | 32 | 10 | 31 | 7 | |
| Christchurch City Council | | | 3 | | | | 3 | 1 | 2 | 2 | 1 | 1 | | |
| Council housing | | 1 | | | | | 1 | 1 | | | | | 1 | |
| Community | | 3 | 2 | 4 | 4 | | 3 | 10 | 8 | 5 | 1 | 10 | 2 | |
| Neighbours | | 4 | 2 | 2 | 3 | | 4 | 7 | 5 | 6 | | 10 | 1 | |
| Earthquake experiences | | 9 | 10 | 9 | 13 | 2 | 1 | 9 | 33 | 22 | 21 | 4 | 32 | 7 |
| Brief | | | 1 | 1 | 2 | | 2 | 2 | 2 | 2 | | 3 | 1 | |
| Mortality | 1 | | 2 | | | | 1 | 2 | 1 | 2 | 1 | 2 | | |
| Employment/ Unemployment | 5 | 3 | 2 | 3 | 5 | | 1 | 17 | 8 | 10 | | 17 | 1 | |
| Atapault | | | 2 | | | | 2 | 2 | | | | 2 | | |
| Food and Water | 1 | 3 | 2 | 2 | 6 | 1 | 1 | 14 | 3 | 12 | 14 | 1 | | |
| Govt | | | 7 | 1 | 6 | 1 | 2 | 13 | 7 | 8 | 4 | 10 | 1 | |
| DHB | | 1 | 2 | | 2 | 1 | 1 | 5 | 3 | 3 | 2 | 4 | | |
| Milton | | 2 | | 1 | 2 | 2 | 3 | | 5 | | | 5 | | |
| Princess Margaret | | 1 | | | | | 1 | 1 | | | | 1 | | |
| Meagar Clinic | | | 1 | | 2 | | 3 | | 3 | | | 3 | | |
| Stepping Stone Trust | 1 | | 1 | | | | 2 | 2 | | | | 2 | | |
| Te Korowai Atawhai | | | | | 4 | | 4 | 3 | 1 | | | 4 | | |
| Rotara House | | 1 | | | | 1 | | | 1 | | | 1 | | |
| ERA | | | 1 | | | | 1 | 1 | 1 | | | | | |
| Residential Advisory Services | | | | 2 | | | 2 | 2 | | 2 | | 2 | | |
| Civil Defence | | | 1 | | | | 1 | 1 | 1 | | | 1 | | |
| NZ Army | | | | | 1 | | 1 | 1 | | | | 1 | | |
| Police | | | 1 | | | | 1 | 1 | | | | 1 | | |
| WINZ | | | | | 2 | | 2 | 2 | | 2 | | 2 | | |
| Benefits | | | | 1 | | | 1 | 1 | | 1 | | 1 | | |
| West Coast HB | | | | 1 | | | 1 | 1 | | | | 1 | | |
| Health issues | | | 5 | 1 | 3 | 1 | | 10 | 8 | 2 | 10 | | | |
| Medication | | 4 | 2 | | 4 | | 5 | 5 | 7 | 3 | | 6 | 4 | |
| Mental Health | 2 | 8 | 10 | 10 | 14 | 1 | 10 | 35 | 19 | 26 | 7 | 33 | 5 | |
| Ngata whaiora | 2 | 2 | 4 | 11 | 1 | 3 | 17 | 6 | 14 | 2 | 15 | 3 | | |
| Housing/ accommodation | 1 | 4 | 12 | 14 | 26 | 1 | 9 | 49 | 16 | 42 | 11 | 43 | 4 | |
| Insurance & EQC | 2 | 2 | 2 | 2 | 9 | | 5 | 10 | 2 | 13 | 6 | 9 | | |
| Sewage / Toilets | 1 | 1 | 1 | 2 | | 1 | 3 | 4 | 2 | 2 | | | | |
| Isolation | 1 | 6 | | 1 | 6 | 1 | 6 | 7 | 9 | 5 | | 7 | 7 | |
| Leadership | | | 1 | | 1 | | 2 | 1 | 1 | 1 | | 1 | | |
| Maori institutions | | | 5 | 1 | 8 | 5 | | 19 | 11 | 8 | 2 | 13 | 2 | |
| Identity | | 1 | 2 | | | | 1 | 2 | 3 | | | 3 | | |
| Bwi | 1 | 1 | 2 | 1 | 2 | | 7 | 5 | 2 | 1 | 4 | 1 | | |
| Te Runaka o Otautahi o Kai Tahu | | | 1 | | | | 1 | 1 | | | | 1 | | |
| Kaupapa Maori Providers | | 8 | 4 | 10 | 9 | 4 | 1 | 10 | 24 | 24 | 11 | 30 | 5 | |
| Kakura Trust | | | 1 | | | 1 | | 2 | 2 | | | 2 | | |
| Te Korimako | 1 | 1 | 2 | | 1 | | 5 | 5 | | | | 5 | | |
| Te Pito o te Ora | | | 3 | | | | 3 | 3 | | | | 3 | | |
| Te Awa o te Ora | 4 | 3 | 5 | 8 | 4 | 2 | 22 | 15 | 9 | 2 | 21 | 1 | | |
| Maori Wardens | | | | 3 | | | 3 | 1 | 2 | | | 1 | 2 | |
| Warae | | | | | 1 | | 1 | 1 | | | | 1 | | |
| Ngā Hau e Wha | | 2 | | 2 | 1 | | 5 | 2 | 3 | 2 | 1 | 2 | | |

| | Age: 18-25 | Age: 26-35 | Age: 36-45 | Age: 46-55 | Age: 66+ | Ethnicity: Other | Ethnicity: Pakeha | Ethnicity: Maori | Gender: Tane | Gender: Wahine | Role: Manager | Role: Tangata Whaiora | Role: Staff |
|-----------------------------|------------|------------|------------|------------|----------|------------------|-------------------|------------------|--------------|----------------|---------------|-----------------------|-------------|
| Mahiwi | 1 | | | | | | 1 | | 1 | | | | 1 |
| Ngā Hau e Wha | | | | 1 | | | | 1 | | 1 | | | |
| Opportunity | | 5 | 3 | 2 | | | 4 | 6 | 3 | 7 | 4 | 6 | |
| Education | | 2 | | 2 | | | 2 | 2 | 2 | 2 | 1 | 2 | 1 |
| Personal networks | | 6 | 2 | 6 | | | 5 | 9 | 5 | 9 | 4 | 7 | 3 |
| Kaupapa Maori Providers | | | | 1 | | | | 1 | 1 | | | | 1 |
| Neighbours | | | | 1 | | | | 1 | 1 | | | | 1 |
| Colleagues | | 5 | | | | | 1 | 4 | | 5 | 4 | 1 | |
| Friends | 2 | 3 | 1 | 1 | | | 1 | 6 | 6 | 1 | | 7 | |
| Private Sector | | | | 1 | | | | 1 | | 1 | | 1 | |
| The Warehouse | | | | 1 | | | | 1 | | 1 | | 1 | |
| Quotes | 1 | 3 | | 5 | | | 1 | 8 | 4 | 5 | 1 | 8 | |
| Residential Care | 2 | 1 | 1 | 3 | | 2 | 2 | 3 | 2 | 5 | | 7 | |
| Resilience | 2 | 2 | 1 | | | | 2 | 3 | | 5 | 2 | 3 | |
| Space and place | 1 | | 1 | 4 | | | 2 | 4 | 5 | 1 | | 3 | 3 |
| Suicide | | 2 | 1 | 5 | | | 2 | 6 | 7 | 1 | | 6 | 2 |
| Support | 2 | 9 | 7 | 14 | 24 | 1 | 11 | 45 | 24 | 33 | 2 | 47 | 8 |
| Support needed | 2 | 1 | 5 | 4 | 13 | | 9 | 16 | 11 | 14 | 2 | 16 | 7 |
| Support provided | 2 | 2 | | 13 | 1 | | 2 | 16 | 10 | 8 | 1 | 13 | 4 |
| Support received | 5 | 4 | 9 | 14 | | | 8 | 24 | 16 | 16 | | 28 | 4 |
| The Future | 2 | 2 | 3 | 6 | | | 5 | 8 | 9 | 4 | 1 | 10 | 2 |
| Transport and Communication | 3 | 5 | 6 | 9 | | | 6 | 17 | 8 | 15 | 7 | 14 | 2 |
| Violence and crime | | 2 | | 2 | | | | 4 | 3 | 1 | | 4 | |
| Voluntary Organisations | 1 | 3 | 4 | 1 | 4 | | 6 | 7 | 5 | 8 | | 12 | 1 |
| Autism NZ | | | | 1 | | | | 1 | | 1 | | 1 | |
| Church | 1 | | | | | | | 1 | | 1 | | 1 | |
| Red Cross | 1 | 2 | 4 | 1 | | | 3 | 5 | 3 | 5 | | 7 | 1 |
| Te Whare Roimata | | 1 | | 1 | | | | 2 | | 2 | 1 | 1 | |
| Wairua | 7 | 3 | 1 | | | 2 | 1 | 8 | 6 | 5 | | 11 | |
| Whanau | 3 | 8 | 8 | 4 | 20 | 2 | 8 | 33 | 21 | 22 | 5 | 30 | 8 |
| Partners | | | 1 | | 1 | | 1 | 1 | 1 | 1 | | 2 | |
| Tamariki | 1 | 3 | 1 | 12 | | | 1 | 16 | 8 | 9 | 1 | 11 | 5 |
| Whanau negative | 2 | | 4 | 1 | | 1 | 1 | 5 | 3 | 4 | | 7 | |
| Whanau positive | 4 | 3 | | 5 | | 1 | 4 | 7 | 5 | 7 | | 10 | 2 |
| Bets | | 1 | 1 | 2 | | | | 4 | 2 | 2 | | 4 | |

Appendix 6: Glossary of Māori terms

| | |
|------------------|--|
| Awhi | hugs, support |
| Kai | food |
| Karakia | prayers, incantations |
| Kaupapa | topic, theme, policy |
| Koroua | old man |
| Kura | school |
| Manaakitanga | hospitality, kindness, support |
| Mātauranga Māori | traditional Māori knowledge |
| Pātai | question |
| Pōneke | Wellington |
| Tangata | person/people |
| Tauīwi | Foreigners/International workers or visitors |
| Wai | water |
| Waiata | song(s) |
| Whanaungatanga | constructing and maintaining connections. |