

Discourse, Materiality and Power: Dietary
Supplements and their Users

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Abstract

Throughout human existence people have used herbs and other medicinal substances to protect themselves against illness and treat their ailments. Gathering wild herbs has, however, been replaced today by the many products on the shelves of health stores and pharmacies in developed countries with health systems similar to New Zealand. Previous studies of supplements and their use have largely focused on how many people use them, or subsumed supplement use within wider studies of complementary and alternative medicine (CAM). Supplement use, however, has characteristics that make it different from CAM therapies more broadly. Yet there have been only a few investigations where supplement users have been asked directly about their practices, and those that have been done have tended to be under-theorised and so lack depth.

This study used a constructionist approach, within which supplements and their users were examined from both humanist and post-humanist perspectives. I used semi-structured interviews to generate data with 36 participants who were regular users of supplements. The interviews were supplemented by observations of the displays of products that participants brought to my attention in the home and retail settings where the interviews took place. A critical theoretical analysis was undertaken, framed by Deleuze and Guattari's concept of the rhizomatic assemblage of multiple, interconnected actants which are always in a process of change. Within this wider framework, aspects of the data were examined using other theoretical concepts including deconstruction, the agency of matter, and Foucault's ideas of power and caring for the self.

The study revealed that popular assumptions about supplements as being natural, holistic and risk free can be deconstructed to show a wide variety of nuances and competing interpretations. Material things are significant in supplement use; not only the products themselves but the non-human communication technologies that allow individuals and companies the means to research, promote, sell or buy supplements when and where they choose across the globe. Using the experience and new knowledge acquired through these non-human things, supplement users become confident in their ability to resist over-scrutiny of their practices by the orthodox health system and this confidence becomes woven in to how they present themselves and their life story.

I conclude the study by drawing on Barad's work on intra-action and agential realism. These concepts show supplement practices to be a simultaneous production of human and non-human agency, with each affecting and being affected by the other. Each time a product is sold, bought or ingested can be understood as a temporary event that entangles meaning and matter at one moment in time. Yet within the passing event, enacted through the physical piece of matter, many social, cultural and economic effects are contained, as well as the personal meanings of the individual user and their hopes for the future. There is also a ritual element to these events, symbolising the user's expectation that they can keep the disruption of ill health and injury away and so preserve their capacity to pursue the ongoing quest for what makes life meaningful for them.

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Preface

In 2013 I was a co-investigator in a piece of research where we were interviewing community pharmacists. For their convenience, most of the interviews took place in their pharmacies, and as we waited for them to become free to talk to us, I had more time than ever before to observe the pharmacy space. I could not help but notice the large displays of dietary supplements and herbal medicines that usually took up one whole wall of the pharmacy with the sign 'Natural Health' above them. Judging by the proportion of space they took up, it seemed that these products represented an important part of the business transacted in the pharmacy. Our research questions focused on the advice that pharmacists gave people about their prescribed medicines as well as other health advice they provided to general enquiries from the public who came to the pharmacy. In the course of our interview we would ask, gesturing at the wall of 'Natural Health', "What about these other things you sell?"

My interest was sparked when we found the pharmacists seemed reluctant to discuss these products. They tended to give us a somewhat defensive standard answer, namely, that the products were not evidence-based, but 'our customers' ask for them, and as they needed to maintain a viable business, their role was to ensure they stocked high quality, safe products with accurate labelling. I became curious after hearing this response several times and decided to take a look at the literature for myself to see why they were so popular, yet the pharmacists treated them with such apparent caution. If they were not evidence-based, then why were so many of them for sale? What I found only made me more curious. Sales of such products had been increasing steadily over the years in all Western countries. The market in them was now worth many billions every year and still growing. However, they were frowned on by medical professionals and considered to be either ineffective and a waste of money, or, on the other hand, to be putting people at risk from contaminated ingredients or interaction with prescribed medicines. There seemed to be only a few studies where investigators had spoken directly to users of these products. Here, I concluded was a topic that was begging for further investigation. This thesis is the account of what I discovered.

Chapter 1: Introduction

Scope of the study

I set out to investigate how the people who buy and use the products I had seen in the pharmacies discussed why they had come to use them and how they made sense of their experiences. ‘Natural health,’ the description above the products I had seen in the pharmacies, is an interesting juxtaposition that manages to sound succinct and yet vaguely intriguing at the same time. It is a skillful commercial phrase that suggests to the unwell that they may buy health, and it will be the ‘natural’ kind rather than the medicines in the dispensary that are associated with illness. At the same time it hints to those who feel completely healthy now, that they could perhaps be even healthier, or store up some extra health for the future in a ‘natural’ way. Yet the language used is belied by the appearance of the products themselves which are clearly a product of human, not natural, provenance, showing every sign of being mass produced and packaged up, their contents hidden away behind layers of plastic and cardboard.

To refine the scope of my study I began by researching what had already been written about the products which are sold under the banner of ‘natural health’. For simplicity, I will use the term supplements throughout the thesis to refer to them, though strictly speaking they cover both dietary supplements and herbal medicines, as well as combinations of both. Defining exactly what can be called a supplement is not exact as the vocabulary tends to be vague and all-encompassing. The Medical Subject Headings (MeSH), often used as a standard in medical publications, define dietary supplements as “products in capsule, tablet, or liquid form that provide dietary ingredients that are intended to be taken by mouth to increase the intake of nutrients. Dietary supplements can include macronutrients such as proteins, carbohydrates and fats, and/or micronutrients such as vitamins, minerals, and phytochemicals.” The New Zealand Adult Nutrition Survey (Ministry of Health, 2009) took a different approach, carefully avoiding being limited to nutrient intake alone. Instead, the survey asked respondents about their use of more specific categories of products: vitamins, minerals, oils, botanicals, bee products, animal and fish extracts, enzymes, and sports supplements. The New Zealand definition has been used for this study both for its local relevance and for its broader implications across the potential for both nutritional and medicinal supplement use.

When deciding what to include in my study, it was clear that in order to keep it within achievable limits I would need to exclude some areas as they were topics in their own right. My interest

had originated in pharmacies from my previous research and was directly related to the use of supplements for medicinal purposes, to improve or maintain health. I decided early on therefore, that I would exclude sports supplements and protein powders. I also excluded substances prepared individually for Chinese medical herbalism and acupuncture and other similar products that were not commercially packaged for sale on the general retail market. Similarly I excluded consideration of 'functional foods' (Landstrom et al., 2007) which, it might be argued, cross over with the definition I adopted. It is important to note here, too, that I was not aiming to examine anything to do with the biomedical effectiveness of supplements, (whether they 'work' or not) or answer the criticisms of supplements and their users that have been put forward in the medical literature. While these issues have been touched on where the participants raised them, they were not the focus of the study.

One of the first issues that becomes apparent when researching why people might use supplements, is that these products are very often treated as just another one of the different therapies within complementary and alternative medicine or CAM. CAM includes, according to Ernst and Singh (2008), everything that orthodox medicine considers falls outside what orthodox medicine does. This bundling together under one umbrella term of the "the vast range of paradigmatically different therapies" (Lewis, 2019: 843) is a common approach, even among qualitative studies which have examined the reasons why people may be drawn to seeking health care outside orthodox medicine (for example, Doel & Segrott, 2003; Stoneman et al., 2013). Supplements, however, have particular characteristics that set them apart from other CAM therapies. Unlike modalities such as chiropractic, acupuncture, reiki and homeopathy, they do not require mediation through a therapist. Individuals can buy and take products solely on their own initiative without consulting anyone else. Even if they do seek advice or are provided with products by a pharmacist, herbalist or other therapist, the consumption of the products is an unsupervised, solo act. It is completely under the control of the individual, can be started or stopped at any time and is not recorded as a medication that may be checked on for adherence by a doctor or pharmacist. Secondly, supplements as a category are not supported by an overall theory of practice, as, for example, are homeopathy or acupuncture, both of which draw from underlying principles which set out how they are believed to work. Thirdly, the term 'supplements' collapses widely different categories of substances under the one collective signifier. A supplement can be anything from a single vitamin, mineral or herb or any of the other individual substances mentioned in the list above or it can be one of the seemingly endless number of combinations of two or more of these (Marcus, 2016). These differences from other

CAM therapies make a sound case for investigating supplements and the people who use them as a topic in their own right.

Research questions

My research questions therefore were:

How do people who use or sell supplements explain why they came to engage with them initially?

How do people who use or sell supplements describe and make sense of their experiences with supplements?

To put the study of supplements in a wider context, however, it is useful to briefly outline what the academic literature has to say about them.

Previous studies of supplements

It is well established that supplements and herbal products are widely used in developed countries with health systems similar to New Zealand's. National surveys of the general public have been carried out in the United States, the United Kingdom, Canada and New Zealand (Bates et al., undated; Gahche et al., 2011; University of Otago and Ministry of Health, 2011; Vatanparast et al., 2010) as well as large studies in Australia and Sweden (Brownie & Rolfe, 2004; Messerer et al., 2001). The percentage of adults reporting supplement use in these studies ranged from 52% in the United States, to 33% percent in Sweden with the other countries in between. The New Zealand Nutrition Study (Ministry of Health 2009) found that 30.7% of respondents were regular users and a further 16.9% were occasional users. While it is not easy to compare countries, as surveys may be done infrequently, the use of supplements appears to be increasing. The Council for Responsible Nutrition in the United States (CRN, 2018) reported that 75% of all adults surveyed used dietary supplements, up 10% from their previous survey in 2009. This is an industry, not government organisation so needs to be treated accordingly, however their data are considered reliable by other academic investigators (Dickinson et al., 2014). The New Zealand survey (Ministry of Health 2009) is now ten years old and has not been repeated but recent reports in the New Zealand media, based on a health insurance company survey, found that 35% of those surveyed were regular users, also suggesting an increase (New Zealand Herald, 2015). One measure of growing use is the amount of interest and attention paid to dietary supplements by the business media. International reports confirm that the appetite from the global public for these products is high and continues to grow (Persistence Market

Research, 2017). According to Lewis (2019), in 2016 in Australia alone, herbal and nutritional supplements were a \$4.2 billion industry. One market research company has estimated that the global supplement market will be worth in excess of \$220 billion by 2024 (Grand View Research, 2018).

Analysis of the demographic information collected in both large national surveys and smaller studies tends to be consistent in showing that women use more dietary supplements than men, and older people, particularly those with chronic diseases such as arthritis, use more than those who are younger (Hirayama et al., 2008; Ma et al., 2011; Murphy et al., 2011; Ried, 2016). Market research companies also mention pregnant women, infants and children, and older adults as key markets for these products (Grand View Research, 2018). Socio-economic factors appear to influence use; an analysis of data by Statistics Canada (Vatanparast et al., 2010) found that a higher household income and higher level of education were positively associated with vitamin and mineral supplement use. In New Zealand, use of dietary supplements was lowest among the least well off with regular use around 10% lower than other groups. However, those in the middle three quintiles by socio-economic status used more supplements than the those with the highest household income (University of Otago and Ministry of Health, 2011).

Some surveys have also included questions about reasons for use. Analysis of the data from the 2007-2010 US National Health and Nutrition Examination Survey found that adults most commonly reported that they took supplements to improve or maintain overall health (Bailey et al., 2013; Cardini et al., 2010; Dickinson et al., 2014). Perceptions that herbal medicines were natural and less harmful than prescription drugs were reported in a number of investigations (Durante et al., 2001; Taylor et al., 2006). Several smaller surveys have looked at supplement use by people who are being treated for cancer or who are cancer survivors (Damery et al., 2011; Ma et al., 2011; Saquib et al., 2011). There are also many surveys of people with a particular condition (for example, tart cherry juice to relieve gout (Singh et al., 2015)), but these are narrowly focused rather than relating to general supplement use.

There is considerable commentary on supplement use in the academic medical literature, much of which notes the lack of evidence of biomedical effectiveness of supplements. The phrase “expensive urine and little else” (Binns et al., 2018: 413) tends to be used in the literature lamenting the futility of taking supplements. They have been described as “pseudoscience and nonsense” (Lewis, 2019: 840) or the “province of modern day Humpty Dumpty” (Freeman, 2005: 155). ‘Alternatives’ that is, anything not accepted by orthodox medicine, are considered to be ineffective (Ernst & Singh, 2008) and their use to be regrettable and even dangerous.

Cases have been reported where supplements have been contaminated with harmful substances (Genuis et al., 2012; Geyer et al., 2008; Maughan, 2005; Stickel et al., 2009), or caused interactions with prescribed medicines (Fugh-Berman, 2000; Izzo, 2004; Sarino et al., 2007). Other investigations have reported poor communication between supplement users and health professionals and recommended that hospital and family physicians need to question patients more closely because people tend not to disclose what they are taking to their health professionals (Ben-Arye et al., 2017; Gardiner et al., 2015; Tarn et al., 2014) et al 2014). A number of researchers have looked at issues related to regulation, particularly the intricacies of the United States Dietary Supplements Health Education Act (DSHEA) of 1994, its strengths and weaknesses, issues of enforcement, and the loopholes that marketing companies have been able to exploit (Cooper, 2010; Noonan & Patrick Noonan, 2006; Onel, 2005; Temple, 2010). Several studies have examined websites that promote dietary supplements for their compliance with the Act (Dennehy et al., 2005; Jordan & Haywood, 2007; Morris & Avorn, 2003) and have recorded concerns about those that do not mention adverse effects or interactions in their promotional material. A Canadian study took a different approach, speaking directly to key informants from 20 companies about their intention to comply with the Canadian Natural Health Products (NHP) regulations of 2004 (Laeque et al., 2006).

Investigations of the advice provided by pharmacists and health food stores to customers have found a lack of emphasis on safety and interactions with prescribed medicines, recommendations for products which were contraindicated in pregnancy, and recommending costly products judged to be unsupported by evidence (Buckner et al., 2005; Mills et al., 2003). Pharmacies were generally found to give more reliable advice than health stores (Jefferies et al., 2012; Sarino et al., 2007; Temple et al., 2009), but even so their advice was found to frequently be inadequate, particularly at identifying potentially serious interactions (Sarino et al., 2007; Waddington et al., 2015). Pharmacists, for their part, have long maintained that, while they are strongly supportive of their role in advising the public about supplements, they feel poorly equipped to do so and in need of further training (Howard et al., 2001; Kemper et al., 2003; Kwan et al., 2006; Zeolla & Cerulli, 2008). Two systematic reviews ten years apart (Boon et al., 2009; Ung et al., 2017) investigated pharmacist knowledge about supplements. Both reported the expectations placed on pharmacists that they would know about supplements and provide well-informed advice, yet they did not have the training to do so and lacked guidance on the scope of their responsibilities. Many of these studies concluded by calling for stronger regulation of supplements unless under the guidance of a doctor (Dwyer et al., 2018; Starr,

2015). However, the limited number of studies that have investigated the knowledge of medical professionals about supplements found that they too needed to be better informed so as to have the knowledge and confidence to discuss supplement use with patients (Kemper et al., 2006; Ventola, 2010).

There appear to be few articles in the health literature on the marketing of supplements, an exception being a small study of Taiwanese students (Wu et al., 2012) examining the role of endorsements, framing and rewards on the effectiveness of dietary supplement advertisements. Commentary and opinion in the health marketing literature itself (Cunningham, 2001; LaPenna, 2010; Tanaka & Blatman, 2010) has tended to discuss how to frame their products in a positive light, partner with health organisations, and offset negative publicity about supplements from health professionals. It also features success stories, for example a report of a consumer website campaign which had promoted supplements as one of “three pillars” of health and wellness (healthy diet, exercise, and supplements) (LaPenna, 2010). It is interesting to note the discrepancy between the marketing literature which tends to target affluent, middle-aged women, with a good education (Cunningham, 2001) as a primary user group, in contrast to the framing of supplement users in the health literature as being poorly educated, having no understanding of science and as being duped by marketing claims into wasting money on ineffective products and are lining the pockets of the companies that market them (Lewis, 2019; Morris & Avorn, 2003; Stoneman et al., 2013; Temple, 2010).

There have been some qualitative investigations where supplement users have been interviewed in more depth about their practices. These studies have reported that users believed supplements were more natural and therefore safer than prescribed medicines, were effective for some ailments, helped to prevent chronic disease, gave them peace of mind, supplemented a poor diet, and saved money on health care (Eliason et al., 1999; Peters et al., 2003; Thompson & Nichter, 2007; Vickers et al., 2006). Women with diabetes were found to be focused on preventing or lessening diabetic complications (Oldham et al., 2004), and cancer patients to be motivated by the desire to support their immune system and to offset the effect of conventional drugs that they were taking for their illness (Haddon, 2001; Hok et al., 2011; Humpel & Jones, 2006; Paul et al., 2013).

The qualitative studies also showed that though supplement users appear to be aware of the risks publicised in the medical literature, rather than deterring them, it was more likely to discourage them from sharing information about what they take with their doctor. Participants were reported as saying they believed their doctors would disapprove and, even if they did not

actively oppose their use, were poorly informed about supplements and lacked the ability to provide clear guidance about them (Chang & Wang, 2009; Eliason et al., 1999; Peters et al., 2003; Reedy et al., 2005; Vickers et al., 2006). Participants in these studies tended to believe they were more knowledgeable than their doctor about their supplements and were sceptical about the reliance that conventional medicine placed on clinical trial evidence as the standard for proving effectiveness. They noted, for example, that trials did not take place in real world conditions and they cited instances where trial data had later been proved wrong or the drugs had led to unexpected adverse events (Little, 2009; Thompson & Nichter, 2007). Instead, supplement users drew their information from friends and family members, social networks, all types of public media, and conducting their own internet research including accessing scientific papers (Humpel & Jones, 2006; Oldham et al., 2004; Peters et al., 2003; Sekhri & Kaur, 2014; Thompson & Nichter, 2007).

Investigations of herbalism and naturopathy have a degree of commonality with studies of supplement use, as ingested products form a key part of the treatment offered in those modalities. There is a limited body of literature, however, that has examined naturopathy or herbalism independently of other CAM treatments (Zick et al., 2009), and within it, only a few studies appear to have directed their attention to the substances used. One example that does focus on the products was a study of traditional herbal remedies from the Andes used by 40 Peruvian and Bolivian immigrants living in London (Ceuterick & Vandebroek, 2017). Three distinctive but overlapping positions in the way the participants made sense of their practices were identified. They connected the participants to their home country, to their traditions and therefore to their identity. They also served as a means of coping for those who were not doing well in their new location, were economically marginalised and struggling to access orthodox health care. In contrast, they were also put to use as a way for these immigrants to demonstrate that their practices were in keeping with currently popular discourses in their new country; that they were health conscious consumers who preferred natural products and wished to avoid the side effects of pharmaceuticals.

Similar studies of Ukrainians living in the United States and Koreans in Australia, have found that links to traditional knowledge played a large part in their choice to use herbal therapists and remedies, though often they relied on home-prepared rather than commercially marketed products (Francic & Kleyman, 2012; Han, 2001). Concepts of identity and tradition in users of herbalism and naturopathy were also identified in naturopathy practitioners and clients in rural areas of Australia (Wardle et al., 2010). This study concluded that country people had an

enduring affinity with familiar natural substances which had always been part of their lives and were likely to maintain traditional knowledge and remedies that had been passed down to them from previous generations. These notions of tradition and identity cross over with independent supplement use (Bignante & Tecco, 2013), where people make decisions about caring for health that draw on knowledge and remedies passed down to the current generation from their mothers, grandmothers and others, mostly women, in their families (Thompson & Nichter, 2007).

Even though they may use some of the same products, herbalism and naturopathy are nevertheless very different from self-prescribed over-the-counter supplement use. The formal modalities are whole systems of healing, underpinned by bodies of theory and practice which guide practitioners' decisions about prescribing and advising their clients. Herbalism has a number of different approaches depending on the framework within which herbal products are used as a source of healing. These include bodies of traditional knowledge, such as Native American or Māori healing, broader philosophical approaches within Ayurvedic, Chinese or Tibetan systems that integrate herbal medicine into mental and physical practices, and Western herbal medicine based on traditions that arise from European thought (Hoffmann, 1988; Nissen, 2010). Naturopathy is wider than herbalism as it includes treatment with herbal and homeopathic substances, but also employs acupuncture, massage, chiropractic and any other CAM modalities considered relevant for a particular individual (College of Naturopathic Medicine, undated). Ingested substances are also a key part of homeopathy, a system based on the premise of 'like cures like' or, what a substance can cause in large amounts, it can also cure, when taken in small amounts (Owen, 2007; Waisse & Bonamin, 2016). Homeopathy, however, is different from herbalism and naturopathy; the substances prescribed are diluted so that they are present in infinitesimal amounts, and the precise remedy that has been chosen is not always revealed to the patient, particularly before they have tried it (Eyles et al., 2012; Frank, 2002).

The other major feature of herbalism, naturopathy and homeopathy is the importance of the well-developed relationship between the practitioner and the patient or client who seeks their help. Supplement users, in contrast, tend to have only short interactions in a retail outlet, or, for those who order online, no interaction at all. Herbalists, naturopaths and homeopaths all place an emphasis on carrying out an in-depth investigation of each individual's history, taking plenty of time (sometimes several hours), and the intuition combined with reasoned deduction that the practitioner brings to bear on the person's concerns (Brien et al., 2011; Bussing et al., 2010; Eyles et al., 2012; Eyles et al., 2011; Legenne et al., 2015; Little, 2009; Oberg et al., 2014;

Viksveen & Relton, 2017; Wardle et al., 2010). The dominant themes in these studies are around the empathy and skill shown by practitioners, providing the ability for people to tell their stories, and the resulting optimism and feelings of coping that they engender. Patients and clients report that they appreciate these skills, feel listened to and like the collaborative approach where the practitioner treats them in a way that is “understandable in a personalised rather than theoretical way” (Little, 2009: 304). These studies are aligned with broader investigations across the spectrum of CAM therapies where the primary focus is on the benefits of the patient-practitioner experience and its implied (or explicitly stated) contrast with orthodox care (Wardle et al., 2010). Participants commented in such studies that they wanted a more holistic approach to health than the orthodox system offered; they desired a system of care that took into account the importance of the mind-body interaction for healing and wellness, and offered a spiritual component (Chang & Wang, 2009; Haddon, 2001; Little, 2009). Additionally, CAM treatments were said to allow individuals to have more autonomy over their personal health care and experience a more collaborative and empowering form of care than they received with conventional care (Haddon, 2001; Hedderson et al., 2004; Stoneman et al., 2013). However, although it was common for participants in many of these studies to report that they sought out alternative treatments because of negative experiences with orthodox health care (Furnham et al., 1995; Klein et al., 2005; O’Callaghan & Jordan, 2003), most people continued to use the two systems in parallel, seeing them as complementary rather than mutually exclusive (Legenne et al., 2015; Nichol et al., 2013; Viksveen & Relton, 2017).

Research gaps

In spite of the number of studies covered above, they provide only a limited understanding about the reasons that underlie the widespread and growing use of supplements. It is one thing to hear from users that they consider these products more natural, that they want to improve and maintain their health or that they are disillusioned with experiences from their usual health care provider so they turn elsewhere. However, these statements simply raise more complex questions that beg for further investigation. What did people mean by ‘natural’ for example? What experiences had led them to distrust usual medical care? Why did they believe that treating themselves in this way would keep them healthy? What was behind their satisfaction with these independent health practices? Moreover, many of the studies available are now more than a decade old. It appeared that after a flurry of studies published between 2000 and 2010, interest had waned. Was this an indication that there was little more to investigate? Was the continually increasing popularity of these products simply a result of clever marketing to

those who continued to ignore expert advice? And if these products were as ineffective and/or risky as claimed, how, in such a risk-averse age (Lupton, 1999) could more and more of them continue to be so widely sold to the public without the regulation that medical professionals were calling for? It seemed important to hear more from supplement users themselves about their supplement use; why they had started taking them and what their experiences had been.

As a broad framing of the study overall, I wanted to look briefly at the role of ingested substances on a wider historical scale. The literature around supplement use appeared to assume that it was a modern phenomenon, yet the taking of substances which become embodied and lead to feelings of healing and enablement has been a focus of traditional medicine from the earliest times. Moreover, references to the power of substances are threaded through myths and legends as well as literature both ancient and modern. It seemed to me that there was a long tradition of ingesting substances that was linked to human efforts to enhance wellbeing and overcome obstacles that must be playing some part in self-care practices with supplements, yet I had not seen any reference to this in the literature I had read.

Within this wider framework, several other key areas stood out as in need of investigation. The first of these was the taken-for-granted assumption in reported studies that 'natural' products were intrinsically safe and a means of offsetting risks to health. These concepts had been frequently raised by participants in previous investigations but appeared to be under-theorised; they had largely been treated at face value and the discourses about them assumed to be clear-cut and unproblematic, having a single uncontested meaning that everyone understood and shared (Durante et al., 2001; Eliason et al., 1999; Joos et al., 2012; Little, 2009; Peters et al., 2003; Rozin et al., 2004; Taylor et al., 2006; Thompson & Nichter, 2007; Vickers et al., 2006). From previous work I had carried out in the context of environmental risk (Bidwell & Thompson, 2012; Bidwell, 2011) I was aware that both naturalness and risk are complex constructs with individual, social, cultural and moral dimensions (Duncan & Duncan, 2004; Lupton, 2013; Pawson & Brooking, 2013; Petersen & Lupton, 1996; Zinn, 2008). It seemed important to pay much closer attention to what was going on behind these surface statements that were so often repeated about the attractive qualities of supplements.

Secondly, the physical presence of the supplement products in pharmacies, health stores and in the homes of people I interviewed appeared to have been almost entirely overlooked. It was the sheer volume of these 'natural health' products that had first drawn my attention to the topic, and yet I had found nothing in the literature that had examined what role their materiality might play. There were however, some leads in studies that had examined how medicinal

substances (of all kinds, not just supplements) acted in the home setting. A study by Hodgetts et al (2011), for example, framed medicines as 'objects from outside' that became woven in to relationships and meanings within domestic settings. During the course of my research, two further papers explored the home as a centre of medication practices in a way that was different from but aligned to my thinking (Dew et al., 2014; Dew et al., 2015). Recently too, a Swedish study (Reichenpfader et al., 2019) looked at the human and non-human actors that are brought together in medication practices when people are discharged from hospital to home with newly prescribed medications. While none of these papers focused specifically on supplements, and none on retail settings, the theoretical approaches and the consideration of the medicines themselves as 'actors' in the home setting were relevant to gaps I had identified and wanted to investigate.

Thirdly, while some investigations had looked at empowerment and personal control over health (Haddon, 2001; Hedderson et al., 2004; Sointu, 2013; Stoneman et al., 2013), they had largely been limited to wider studies of CAM treatments, with supplements only one minor component available to people who seek alternative therapies. They included Sointu's (2013) study on embodied subjectivity, expertise and experiences of healing in people who sought out CAM treatments, and the studies by Danish researchers (Baarts & Pedersen, 2009; Pedersen, 2013, 2018; Pedersen & Baarts, 2018) on CAM therapies as an expression of technologies of the self (Foucault, 1988) which people engaged in as a low risk health regimen. Also relevant were aspects of the study by Reichenpfader et al., (2019) which had noted the way people make the change from being passive recipients of medicines in hospital to taking control of their regime once at home. None of these studies, however, had looked at supplements alone, which, given that they are more directly under an individual's personal control than therapist-dependent treatments or prescribed medicines, would seem to warrant a separate and more detailed investigation.

These gaps in the research were the starting points for the investigation. Although this seems clear with hindsight, when I look back to the start of my study, the direction of the argument was still somewhat uncertain at the beginning, and it was a process that developed gradually over time. The journey from my initial inspiration for the topic to the submission of the completed thesis was a lengthy and continual evolution that began with the core ideas for investigation that I have set out above and incorporated others as they proved to be relevant. How my study was finally structured is set out below.

Structure of the thesis

Chapter 2 is a background chapter giving a brief overview of the place that ingested substances have occupied firstly in myths and legends of the life quest and some well-known examples from literature and popular culture that echo this tradition. This is followed by a historical overview of traditional and folk medicines, the gradual separation of orthodox medicine from lay health practices, and the persistence of home remedies in Western societies.

Chapter 3 sets out the methodology and methods for the study. It describes my epistemological stance, and discusses my own position in relation to the topic and the generation of the data. It covers the selection and interviewing of the participants, their characteristics, and the analytical approach. It concludes with a short overview of the major theoretical framing of the study.

Chapter 4 investigates the main discourses about supplements that the participants raised, using ideas drawn from Derrida's writing on deconstruction. It examines in detail three main concepts that were highlighted as reasons for supplement use: their naturalness, holistic characteristics, and their role in counteracting risks to health. The chapter shows how diverse and fluid these concepts are, continually developing and changing over time.

Chapter 5 turns attention directly to the physical presence of the supplements themselves which played a key role in the interviews. Materialist concepts are used to examine the agency of these non-human things to create effects in people's lives and to inter-connect with the discourses examined in the previous chapter.

Chapter 6 focuses on negotiations of power in relation to the way participants managed their health with supplements. Drawing from Foucault's writing on governmentality and the formation of subjects in the neoliberal state, it examines the participants' attitude to personal responsibility and expertise as a way of building a sense of control over health options. In time the confidence they acquired became part of their sense of identity as someone who knew about supplements and could pass on what they had learned to others.

Chapter 7, the discussion and conclusion, first draws the analysis chapters together using ideas from Barad to show how discourse, materiality and power come together and are enacted in the supplement practices that take place in everyday life. It looks at the human quest for a meaningful life, and the role that the ritual element of supplement practices play in deferring fears of disability and decay. Finally the conclusion links back to the ancient theme of the quest and the need for enablers that support the life journey.

Chapter 2: Ingested substances: ancient and modern

Legends and literature

Throughout human history, people have sought out substances to protect them against the harms that threaten to disrupt their life journey. The motif of the powerful substance that enables, protects and cures is woven into both myths and legends and what is known about the history of traditional medicines from before the start of recorded history (Anderson, 2005). Indeed magic and medicine are hard to separate one from the other because both offered a means of protecting and preserving life, and the natural and supernatural powers they appealed to were intimately linked (Smith, 1953: 847). This chapter provides a brief overview of ancient and modern healing and protective substances as a background to the use of supplements today.

The tale of the person who sets out on a perilous journey, the hardships and barriers they face and their ultimate salvation is a universal generic narrative (*ur-narrative*) that is found in almost all cultures (Berger, 2016). Campbell (1973) in his study of cross cultural mythology traces the common characteristics in the many different narratives of the archetypal hero or heroine who is called to set out from home on a quest during which he or she will need to battle against both internal and external forces to achieve their reward. The universal life journey (termed the 'monomyth' by Campbell), can be found in myths, legends, and religions throughout the ages and continues in popular culture in the present day. The life journey is, however, fraught with obstacles and grave dangers that stand in the way of the central character reaching their goal. These perils are symbolised in various ways, but it is in the process of the journey and overcoming its difficulties that the hero or heroine achieves self-realisation and personal growth, becomes a force for good, and, in some myths, returns to become a leader of their people. The characters in these ancient stories have exceptional qualities that make them stand out from others, but their journey also provides a template for the ordinary person who is faced with obstacles that threaten to disrupt their lives and which they need to overcome (Hubbell, 1990). Whether exceptional or ordinary, however, the ultimate success is by no means certain, and some will suffer or even die in the attempt. It is the quest and the ongoing journey that is important, not whether or not the destination is reached.

A recurrent motif in many of these narratives is the supernatural object or substance which comes in to the story at a critical time to protect the hero or heroine from harm, cure their injuries, and revive them so that they can continue pursuing their quest (Campbell, 1973: 57).

Myths, fairy tales and legends across many cultures are rich in these powerful supernatural 'things' such as a ring, a cloak, a sword that enable impossible obstacles to be overcome and the journey to progress. Alternatively the 'thing' may be a substance with mysterious properties to be consumed in the form of food or drink or rubbed onto the body to be absorbed through the skin. The substance is subtly different from the artefacts like the swords, cloaks, and rings; these latter are already imbued with power which the hero can use but they do not become part of him or her. In swallowing or absorbing the substance, however, the power is embodied in the hero or heroine, enabling them to become braver, plan more strategically and be more able to withstand and overcome the perils of the ongoing journey. In the ancient Greek legend of Jason and the Argonauts, for example, Medea gives Jason a potion she has concocted from the blood red juice of the crocus (Graves, 1977). Once he has swallowed¹ it, Jason is protected from the bull with the fiery breath and enabled to fight off the armed men and that spring from the dragon's teeth that block his way to claiming the golden fleece. Similarly, in the *Odyssey*, the sorceress Circe has given Odysseus a magic herb which protects him from her enchantment. Thus enabled, he forces Circe to turn his men back to human form so they can continue with their journey (Rouse, 1957:175). Potions are also found in many fairy tales; in the Grimm's fairy tale of the Twelve Dancing Princesses, a draught of drugged wine administered to their worldly suitors allows the princesses to escape them and pursue their evening adventures dancing in the enchanted forest (Sideman & Kredel, 1977). Probably the best known of all in the Western world is Hans Christian Andersen's tale of the Little Mermaid. In this story, the mermaid wants above all to win the heart of the prince with whom she has fallen in love but knows she can never be with him unless she can become human. Begging the sea witch to help her, she obtains a magic potion. When she reaches the shore and drinks it, it enables her to grow legs and take on a human form of great beauty and gracefulness, so that she achieves her desire and marries the prince (Andersen, 1996 [1930]). The little mermaid must, however, pay a high price for her human form, losing her voice and living a life of pain as every step on her human legs is like walking on knives. So the magic potions are not always benign. The witches in Shakespeare's *Macbeth*, for example, are brewing "poisoned entrails" in their cauldron with obvious malign intent, and the apple that Snow White chokes on was intended to kill her and put an end to her beauty overshadowing the wicked stepmother. Whether positive or negative, however, these supernatural substances have agency, they cause effects, and carry the action of the narrative forward. A fascinating aspect of these examples, (though outside the scope of the study to

¹ In some versions Jason anoints himself with a liquid rather than swallowing it.

explore) is that in almost all cases the substance is supplied by a female protagonist, counter to the usual gendered stereotypes of women as beautiful but passive in these traditional tales (Evans 1998; West 1993; Haase 2004; Rowe 1979).

Closely related to the powerful and protective substance of legend, is the substance that revives and resuscitates after injury or even death so that the hero is enabled to return to full strength and continue with their quest. Strengthening and restorative herbs feature in the Fellowship of the Ring when Frodo is lying wounded:

...Aragorn bathed the hurts with water in which *athelas* was steeped. The pungent fragrance filled the dell ... soon Frodo felt the pain leave him, and his breath grew easy (Tolkien, 1974: 319).

The same idea is found in the Grimm's fairy tale of the Two Brothers where a hare places a magic herb in the dead man's mouth to revive him (Varecha, 1982), and in the Celtic tales of the Horned Women and the Battle of the Birds, where dead and bewitched children are brought back to life by sprinkling them with water mixed with blood (Jacobs, 1994). The elixir of life motif (or the elixir of immortality) also occurs across many cultures including Chinese and Indian myths, and throughout Polynesia. Variations on the myth of the Land of the Water of Life of the Gods can be found in many of the Pacific Island groups including New Zealand, Tonga, Samoa, Tahiti as well as the Hawaiian islands (Beckwith, 1970). The land lies beyond the horizon where there is a lake of living water and where the gods have immortality. This water is called Ka wai ola a Ka-ne or the water of life of Ka-ne and has the power to restore humans to life. One story concerns a king who was gravely ill. His three sons each went searching after the water of life, two of whom met with disastrous fates, until eventually it was found by one son and brought to the king who immediately regained his health and strength (Westervelt, 1993). It is this same water of life that features in the Māori legend of the moon:

when the moon sickens, wanes and comes nigh to death, she goes afar off across the ocean to seek the waters of life, or fountain of youth, the Waioira a Tāne. In a far region she bathes her wasted form in the healing waters of Tāne and so returns to this world as Hina-keha, once more young and beautiful (Best, 1951:137-138).

Ingested substances with supernatural properties are also recurring motifs in Jewish and Christian traditions. In the Biblical story of the flight of the Israelites from Egypt, manna comes

down from heaven (Exodus Chapter 16)² and later on in the journey when the Israelites were dying in the desert in their flight from Egypt, Moses struck the rock and “water gushed in abundance” (Numbers 20:11) thus allowing them to continue their journey to the promised land. Jesus, too spoke about living bread and living water. In the incident where he meets the Samaritan woman at the well (John 4:13) Jesus tells her, “whoever drinks the water I give them will never thirst. Indeed, the water I give them will become in them a spring of water welling up to eternal life.” A little further on Jesus refers to himself as being “the living bread that came down from heaven. If anyone eats of this bread, he will live forever.” These instances lead up to the symbolic gift of the Last Supper where Jesus designates the bread and wine as giving everlasting life to those who “do this as a memorial of me” (Luke 22: 19).

These ancient motifs appear in modern guises in both literary and popular works. The monomyth of the hero who overcomes the dangers and trials that hinder their quest is the principal theme of the Harry Potter series and Dorothy in the Wizard of Oz, among many others (Robbins, 2005). George Lucas has acknowledged that the Star Wars series was heavily influenced by the “Hero with a Thousand Faces” (Tiffin, 1999), Joseph Campbell’s scholarly work on the many versions of the monomyth of the hero’s journey (1973). The mysterious and powerful substance motif is repeated in Lewis Carroll’s *Alice in Wonderland*. After falling down the rabbit hole and then drinking the potion in the bottle she finds on the table at the bottom, Alice shrinks to a height of ten inches. Now she is small enough to get access to the new world she has found, and “her face brightened up at the thought that she was now the right size for going through the little door into the lovely garden” (Carroll, 1865 [1898]: 10). Thus enabled she can embark on her journey to independence and self-discovery. In humorous form, the same motif is found in the Asterix series where the venerable Druid Getafix brews magic potions that endow the person who drinks them with superhuman strength (Gosciny & Uderzo, 1974). Similarly, Mad Max in the *Princess Bride* revives the dead hero Wesley with the aid of a chocolate covered capsule so he can rescue the princess and defeat the forces of evil (Goldman, 2003). In short, the notion of the ingested magical substance that protects, enables, cures, and revives is a motif that runs through many of the “symbolic stories that embody the enduring and universal qualities of our experiences”(Smith, 2002: 2). As Armstrong (2005: 4) has observed, “mythology speaks of another plane that exists alongside our own world and that in some sense supports it.”

² All Biblical references are from The Jerusalem Bible 1968. Jones, A. (ed). London: Longman.

Running in parallel with this other-worldly plane, are the substances that have been used from the earliest times for healing in traditional medicine. The art of medicine implicitly acknowledges its debt to Asclepius (Asclepius in Latin), the god of healing in the Greek myths, whose staff with the coiled snake, chosen because the sloughing of the snake skin was believed to renew youth, is still associated with medicine. The connection between magic and healing is not always clear cut; there is a blurred boundary where they cross over or at least complement each other. As Porter (1997: 33) has commented, “because illness raises the spectre of that mystery of mysteries, death”, medicine, religion, and magic have always been closely intertwined. Healing takes place through magic substances in myth and legends and traditional healers have often been credited with magic powers, particularly in situations where illness may be attributed to supernatural causes (Adewuya & Makanjuola, 2008; Bartocci & Littlewood, 2004; Petrus & Bogopa, 2007; Razali et al., 1996). Many traditional healers have been credited with supernatural powers to do good, or if their healing arts did not work as expected, have been demonised and suspected of being witches (Horsley, 1979; Mead, 1965; Minkowski, 1992). The vast history of traditional medicinal substances across the many cultures of the world is far more than can be covered here. The next section, however, highlights some aspects of relevance to the topic of the thesis.

Traditional medicines

Archeological records show that since prehistoric times, people have always sought traditional medicines from healers to ease their pain and cure their ailments (Anderson, 2005; Smith, 1953). Evidence is available, for example, that shows plant substances were used in prehistoric times to treat intestinal worm infestations (Chaves & Reinhard, 2006) or to reduce the pain of dental extractions (Facco & Zanette, 2017). Indian Ayurvedic medicine and Chinese healing systems using herbs and acupuncture are highly developed systems that reach back into history and have continued into the present day (Kumar & Navaratnam, 2013; Yang et al., 2011). Although less known in developed countries, healing traditions from indigenous peoples in all continents also date back over centuries and are still practised, including those from Canadian First Nations (Cook, 2005; Wilson, 2003; Wilson & Rosenberg, 2002), New Zealand Māori (known as rongoā) (Ahuriri-Driscoll et al., 2008; Durie, 1993) South American peoples (Neuwinger, 2000; Vanderbroek et al., 2004) and the many traditions from Africa (Mahomoodally, 2013), each of which is a topic in its own right.

The origin of making medicinal substances that eventually developed into the practice of medicine as it is known today in Western countries was influenced, according to Court (2005), by five civilisations: Mesopotamia, Egypt, Greece, Rome and Arabia. However, it was with the Greeks that particular individuals first became identified with medicine, starting with Hippocrates (460-377 BC), and followed by the two Romans, Dioscorides (50-100 AD) and Galen (129-199AD), and then the Arabic scholar Ibn Sina (980-1037AD), known as the Hippocrates of the Arab world (Court, 2005: 35). It appears however, that folk medicine continued as it always had independently from the writings of these learned men of the time. For ordinary people traditional remedies were passed down from one generation to another or learnt by observation and experience. The folk healing practices of the time are not well documented and what is known about them has been constructed from the arts of the period: engravings, sculpture, song and story (Minkowski, 1992). In this period before the founding of university medical schools, healing was pragmatic and non-academic, practised by those of both high and low birth, using therapies based on botanicals, traditional home remedies, bloodletting and native intelligence, sometimes accompanied by amulets, incantations and magic (Demaitre, 2013). The 'healer' was a fluid concept and could extend to anyone who treated the sick; medical care outside the family circle was available from herbalists and 'wise women', as well as specialist infirmarians in convents and monasteries (Minkowski, 1992). The hospitals offered care rather than cure, and what welfare they provided was linked to the health of the soul as well as the body, offering their services as a religious expression that combined the prayers of the sick and their living benefactors to help the souls of the departed through purgatory to heaven (Horden, 1988).

There were in existence, however, a number of medical manuals for educated people who could read Latin, with literacy being a distinguishing mark of the elite healer. Demaitre (2013), lists 24 manuals of *practica medicinae* (the practice of medicine) evenly spread across the period from 1000 to 1500. Several of the earliest of these were translations of Arabic texts, particularly the translation into Latin by Gerard of Cremona (1114-1187) of a large volume compiled by Avicenna that incorporated Greek and Roman as well as Persian, Arabic and far Eastern teaching (Demaitre, 2013: 10). This volume became known as the Canon of Medicine. In Chaucer's *Canterbury Tales*, the description of the Doctor of Physic shows his status by itemising all the learned men of medicine with whom he (and clearly Chaucer himself) was familiar:

Well knew he the old Esculapius,

And Deiscorides and eek Rufus,

Old Ypocras, Hali and Galien,
Serapion, Razis, and Avicen,
Averrois, Damascien, and Constantin,
Bernard, and Gatesden, and Gilbertin. (Demaitre, 2013: 4)

These fifteen authorities span one and a half millennia from classical Greece through the peak of Islamic culture, right through to Chaucer's own time. Illustrations from the illuminated manuscripts of the time show that many of the medical practitioners were monks, identified by the way they were depicted with their tonsure and robes. Manuscripts were rare and prized items, copied by hand on to parchment or vellum, and they became closely associated with advanced medical learning, leading to a situation where pieces of parchment became a proxy for medicine and gullible people could be exploited by being sold them as 'healing' amulets (Demaitre, 2013: 5-6).

The foundation of hospitals in Europe can be documented from around the beginning of the 13th century and at the same time the teaching of medicine in universities became increasingly structured, drawing from the classical sources and the texts mentioned by Chaucer. Ideas about health and illness of the time were based on the four humours that were said to make up the human body: blood, phlegm, yellow bile and black bile. These components were associated, respectively, with sanguine, phlegmatic, choleric and melancholic characteristics. The individual combination of each of these components was believed to shape each person's emotional make up and determine the working of their bodily organs (Demaitre, 2013: 17). The details of how the medieval practitioners thought about the body and its workings are complex and the concepts that underpinned their approach to healing are completely different from the modern understanding of anatomy and physiology that are the foundation of modern biomedicine. However, two factors that resonate with contemporary critiques of the biomedical model of medicine are important: firstly, that each person was considered to be unique and the treatment was individually designed for them alone, and secondly, that treatment had a conservative approach, starting with lifestyle changes, or advising the use or avoidance of certain foods and drinks rather than employing drugs. Wallis (2006: 18) cites the casebook of a physician from the 16th century showing that in only 12 percent of cases did patients receive a potion or pill. According to Cook (1994: 1), people who consulted the physicians of the time were more likely to receive "good advise [sic] and little medicine."

In the late medieval and early modern period before industrialisation in Britain, the sick person had a range of options to choose from in seeking treatment. Curth (2006: 4) describes this period as the era of “kitchen physik”. Anybody could buy drugs, including poisons, from druggists or apothecaries and make up their own medicines as the craft guilds of spicers and grocers carried out an organised trade in the supply of drugs in the major cities of England (Holloway, 1995). The translation into English in the early modern period of the Latin *Pharmacoepoeia* by Nicholas Culpeper was also instrumental in giving access to information about curative plants and remedies. Doctors were not particularly esteemed socially, and were considered as inferiors to their better-off clients. They anyway had limited means at their disposal for curing illness, and if people wanted someone outside their family, they might, instead of consulting a doctor, just as well ask a ‘wise woman’ or take advice from their squire or local members of the clergy (Porter, 1993).

As well as trading in drugs, apothecaries also prescribed, compounded and administered medicines and were the mainstay of the general public of London and more likely than the physicians to assist the less well-off (Cook, 1990; Curth, 2006; Holloway, 1995; Porter, 1993). At some point most people would pay for medical advice from a practitioner, but self-care or advice and care from family or friends was usually the first line of treatment. Common herbs and ingredients were freely available in the wild or in gardens and these could be supplemented with drugs and compounds from apothecaries. Throughout the early modern period and “well into the nineteenth century all drugs – even dangerous ones like opium- and poisons could be freely bought over the counter” (Porter, 1993: 24). There was nothing to prevent a lay person using the entire range of medicines as they wished and no one thought that they would offend a doctor by trying to treat themselves first. In this period, it was “virtually impossible to draw a line between ‘lay’ or ‘folk’ herbal remedies and those of learned medicine” (Wallis, 2006: 15).

The separation of healing professions into formal experts credentialed through registration in colleges or associations and endorsed by the state in contrast to those ‘alternative’ therapies that did not have official authorisation took place only gradually. It had its beginnings in the 16th century when various guilds of druggists, apothecaries and physicians combined into societies so as to have a greater power of numbers over the prescribing and selling of medicines. The Royal College of Physicians was founded in 1518 and the Society of Apothecaries in 1617. Both had governmental authorisation to practice pharmacy and medicine and they jockeyed for control of ‘physic’ during the 17th Century (Holloway, 1988: 79). Court cases brought by the College of Physicians with the aim of undermining the status of apothecaries during this period were not

successful. The legal points turned on what exactly 'physic' was, and even if physicians practised it, whether they had the right to stop others from doing it too (Cook, 1990; Curth, 2006; Holloway, 1995; Porter, 1993).

The transition from a guild-based economy to a free market in Britain during the 17th and 18th centuries had a far-reaching effect on the supply of medicines (Holloway, 1995). The commercial possibilities available in the open market saw the emergence of an increasing number of chemists and druggists who advertised and sold their own brand of medicines which they publicised in the popular press along with testimonials from satisfied customers (Curth, 2006). Although the College of Physicians made attempts to limit this activity, it appears that their members too, actively developed and marketed their own patented products. Bivins (2007: 6) describes this era as a "flowering of medical commercialism and ingenuity and luxuriant growth in the medical marketplace". Those marketing or providing the different cures and therapies did not propose different medical systems or models of the body or even a different understanding of disease processes but just that their remedies were more effective than those of anyone else (Bivins, 2007). A wide range of what would now be considered 'alternative therapies' flourished including homeopathy, mesmerism, and Coffinism³ (medical botany). There were also therapies from Chinese systems such as acupuncture, moxibustion (the burning of dried mugwort on acupuncture points of the body), and Ayurvedic medicines from India which had come to Europe from the spread of European trade and colonisation of those countries (Bivins, 2007).

The beginnings of professional and 'alternative' health care

The professionalisation of medicine and pharmacy that saw them gradually develop into the way they are in New Zealand today dates from the 19th century in Britain. Worling (2005) describes the period between 1617 and 1841 as a time of constant disputes between physicians and apothecaries and between apothecaries and chemists and druggists. It was a period when medical practitioners increased their efforts to contain the power of the chemists and druggists by emphasising the value of their specialist training and knowledge and sought to place consumers firmly under the doctor's expertise. At the same time pharmacists gradually became established as the officially sanctioned dispensers of the medicines that doctors prescribed, with the Pharmaceutical Society of Great Britain being formed in 1841 and granted a Royal Charter

³ Named after American herbalist Albert Isaiah Coffin whose book *The Botanic Guide to Health* (1845) was a guide for lay people to treat themselves using the properties of plants.

two years later (Worling, 2005). During the 1850s, several pieces of legislation were enacted⁴ which restricted the title pharmacist, chemist or druggist to registered persons, gave the Pharmaceutical Society the right to examine and register those who were licensed and therefore legally able to operate under these titles (Hunt, 2005: 79). However, it was not until the early years of the 20th century that registered pharmacists secured the *exclusive* right to dispense prescriptions for those people who were insured under the National Insurance Act of 1911. By 1946 when the National Health Service Act extended health coverage to the entire population, it became normal for medical prescriptions to be dispensed only by qualified pharmacists (Hunt, 2005: 92). The changes that began in Britain in the mid-nineteenth century were paralleled in New Zealand though at slightly later dates (Combes, 1981), so that by the middle of the 20th century registered medical professionals controlled all the prescribing of medicines, and registered pharmacists controlled their dispensing.⁵ The regulation and professionalisation of medicine and pharmacy created a context where forms of health care that operated under the mandate of government authorisation through registered professions could therefore be contrasted with informal ‘alternative’ practices which were not.

Informal home remedies in colonial New Zealand

While this formalisation of the respective roles of medicine and pharmacy was taking place, ordinary people continued to use home remedies and informal treatments as they had always done. During the 19th century, the period of European colonisation of New Zealand, treating most injuries and illnesses independently of medical advice whenever possible was a feature of almost all households. It was essential outside the main centres as travel was difficult and doctors often many hours journey away (Coleborne & Godtschalk, 2013). Moreover, even in bigger towns, doctors and medicines were expensive unless people were well resourced, so that home remedies were a necessity rather than a choice. Substances (including poisons) could be purchased directly from pharmacies without a doctor’s prescription and pharmacists also made up their own products, and sold patent medicines, so that self-prescribed ‘alternative’ medicines continued in parallel with the formal system (Homan, 2005). In the colonial era, the current distinction between herbal and formally prescribed medicines was less clear anyway as pharmacists primarily worked with “natural or crude drugs, ie. roots, rhizomes, leaves, barks and

⁴The Arsenic Act of 1851, followed by the Pharmacy Act of 1852 and the Pharmacy and Poisons Act 1868 (Bartrip 1992:55).

⁵ This remains largely the same today apart from the extension of some prescribing rights to nurses and pharmacists.

flowers using the processes of maceration, percolation and infusion” (Combes, 1981: 41) to extract the active ingredients. Contemporary letters, recipe books, and compendia of household hints illustrate the advice that was given and the substances used to treat various conditions; Coleborne and Godtschalk (2013), drawing from 19th century diaries of pioneer families, describe the need for households to help one another out at times of illness or accident, and the financial difficulties that resulted if a doctor needed to be called in. Women generally bore the greatest load in tending to the sick, even when they themselves were unwell. Brewis (1982), in her compilation of recipes from letters, diaries and cookbooks of the period includes a section of home remedies for treating conditions ranging from asthma to ‘melancholia’ and dropsy. Brett’s Colonists Guide and Cyclopedia of Useful Knowledge (Leys, 1883) has a medical care section curiously sandwiched between a section on raising poultry and another on curing and storing produce. It includes ‘family doctor’ advice from a member of the Royal College of Surgeons, followed by a section on homeopathy by one James A. Pond, described as a homeopathic chemist. Both these sections on health have a similar alphabetical list of advice on the treatment of illness, except that general preventive advice on diet, exercise, fresh air, and cleanliness are given at the start of the homeopathy section but absent from the ‘family doctor’ list. Interestingly, there is considerable cross over between the two lists of remedies mentioned with sulphur, camphor, opium and laudanum among those that are mentioned in both. These last two were in frequent use and easily available for anyone to buy in the 19th century (Acker, 1995). One remedy for diarrhoea and ‘English cholera’ (Brewis, 1982: 123) calls for 40 drops of peppermint, 80 drops of laudanum and half a pint of brandy with a large tablespoon to be taken half hourly and the warning that it is for adults only.

Māori also had an established system of healing known as rongoā consisting of five modalities; karakia (prayer and incantation), rongoā rakau (medicinal herbs), mirimiri (massage), wai/hauwai (water or steam and matakite (prophecy) (Ahuriri-Driscoll et al., 2008; Durie, 1993). The 19th century colonists, particularly the chemists among them, took a considerable interest in the properties of the plants used in Māori medicines. A four page entry in the Colonists’ Guide described them as being a fruitful area that chemists might benefit from further researching. The author of this section was said to have “rescued from oblivion nearly all that is known of the old Maori [sic] uses of the New Zealand medicinal plants” (Leys, 1883: 480). The article treated rongoā purely from a pharmaceutical effectiveness standpoint, describing individual plants and their known application for particular conditions. Plants such as kawakawa (*Piper excelsum*), mānuka (*Leptospermum scoparium*), and koromiko (*Hebe salicifolia*), for example, were among

those listed, the last being noted as a treatment for diarrhoea. There was no recognition in these pages of the wider spiritual context of rongoā Māori as a whole system of healing, which is much more complex than herbal medicines alone (Ahuriri-Driscoll, 2014).

The persistence of home remedies into the mid-20th century

The home remedies and self-help therapies mentioned in the Colonists' Guide may sound quaint and outdated today, but many of them were still current until at least the early 1970s. My own memories stretch back to my early childhood in the 1950s when pharmacists stocked a wide range of components for making up home remedies. They could be purchased by members of the public in small quantities or made up in the pharmacy on request (Combes, 1981). Home remedies in widespread use at the time included Bonnington's Irish Moss cough mixture, different brands of indigestion tablets, California syrup of figs (a laxative), gripe water for babies, and the patent medicines brought round by the Rawleigh's man.⁶ Our local chemist made up his 'own brand' range of basic products in brown glass bottles, labelled with his credentials. Diarrhoea and vomiting (sometimes known euphemistically as 'summer sickness') were subject to a range of recommendations for home remedies that were supposed to 'settle the stomach' including grated apple, dry toast, a Rawleigh's product known as Pleasant Relief, flat lemonade, and even ice cream. Basic products and the patent medicines along with aspirin, beef tea, and bed rest were used as supportive care in the days before vaccinations were available for measles⁷, mumps, rubella and chicken pox. All children were expected to contract them at some stage and my siblings and I were no exception. Non-ingested products such as antiphlogistine for boils, hydrogen peroxide and antiseptic dyes for skin abrasions, thrush and tinea, salt water gargles for sore throats, and camomile lotion for bites and skin rashes were also common. From my own experience, the remedies used were largely limited to treating an illness or skin infection; it was not usual to take a product for prevention apart from patent medicine 'tonics' that were available. Vitamin C tablets appeared in our household for the first time during the mid-1960s as a protection from winter colds and bronchitis, and during the late 1960s large fizzy

⁶ Rawleighs: a Australasian company that sold patent medicines and cooking essences door to door. It still exists today though the method of sale and the range of products have changed, see <https://www.rawleighs.com/>

⁷ The first measles vaccine was licensed in 1963 (Bloch et al 1985), with the others following.

tablets containing 1000mg doses of Vitamin C became a remedy for hangovers after student parties among some of the young men I knew.

Developments in medical care that offered more treatments with prescribed antibiotics, anti-fungals and anti-histamines beginning in the 1940s became more widely available during the 1950s (Gaynes, 2017). In the following couple of decades, the advent of mass production of pre-packaged medicines saw many of the home remedies become outdated or the substances needed to make them no longer readily available. Compounding by community pharmacists was less necessary except in specialised cases, and is now likely to be less than one percent of prescriptions according to Krochmal (2009). Moreover, pharmacists were reluctant to stock ingredients for which there was only minor demand and which had to be discarded before their expiry date (Louise Kennedy pharmacist, personal communication). 'Own brand' basics and ingredients for home remedies were gradually replaced by commercially produced products that could be bought off the shelf or ordered independently in an increasingly globalised market. These were sometimes simply older remedies in a new guise. Garlic, for example, which has been recognised as having medicinal properties since ancient times (Rivlin, 2001), no longer needs to be peeled, crushed and ingested in its raw state but can be bought in a pharmacy or health food store as a prepackaged concentrated and odourless extract known as Kyolic® (Balamash et al., 2012). So while the 'natural health' products on pharmacy and health store shelves may appear to be a new phenomenon, they would seem, rather, to be part of a long continuum of obtaining substances to treat illness or maintain health that is connected to the history of humanity from earliest times. The difference is that the physical substances formerly used in home remedies and self-care have been reimagined, repackaged and marketed in a way that resonates with the contemporary citizen and can be obtained over-the-counter in a convenient ready-made form.

Chapter 3: Methodology and methods

Introduction

The key focus of my research was to gain an insight into the perspectives of people who used supplements regularly. I wanted to find out why they first started to take supplements, how they decided what to take, and what kind of effects they reported on their health and wellbeing. I was also interested in their sources of information about supplements, how they chose where to buy them and what their general relationship was with the orthodox health system. In addition I was interested in investigating whether people who used supplements were influenced by social attitudes and discourses that were evident in popular and academic publications and how these related to contemporary and historical ideas and expectations of health, illness and wellbeing throughout the life course. When I started out on the study, I had thought that building a greater understanding of the reasons people chose to use supplements might give a greater insight into the criticism that supplement use attracts in orthodox health care and perhaps go some way to reconciling the disparate views between users and critics. As the study progressed, however, I discovered that it was more important to examine supplement use as a practice in its own right rather than attempting to compare it to or reconcile it with other views.

Epistemological approach

A fundamental consideration in qualitative research is the ontological and epistemological position of the researcher; that is, their beliefs about what it is possible to find, and how to go about finding it (Giacomini, 2010). The individual researcher's beliefs about the nature of reality shape his or her view of the world; they affect how they approach the topic, how they generate and analyse the data and how they view the topic within the broader social and political context (Giacomini, 2010; Green & Thorogood, 2009). Realist assumptions assume that facts are stable and independent of values, and that researchers can and must distance themselves from the data and take an objective stance (Green & Thorogood, 2009: 13). Constructionists on the other hand, consider that reality is shaped by human processes that influence how the material world is experienced and interpreted and that one person's reality will differ from another's. Extreme constructionists take the view that all reality is relative and depends entirely on how it is constructed by human processes (Green and Thorogood 2009). An individual researcher may sit anywhere along this spectrum from positivist assumptions that reality is fixed at the one end, to

extreme constructionist view that nothing has independent reality and everything is relative at the other end.

This study started from a constructionist standpoint in which I took the view that while reality exists, human beliefs and attitudes have a major influence on how people perceive and engage with it. Moreover that each individual will construct these influences in different ways and that their beliefs will change over time according to new experiences that they have, and new ideas they come across, as well as their own stage in life (Tulloch & Lupton, 2003). People's constructions of the world are developed as the result of an interaction between their own private, cognitive processes and their exposure to the publicly shared discourses and social norms of the age they live in (Giacomini, 2010). My study aimed to understand more about the phenomenon of supplements and their use by investigating perspectives and subjective experiences of the individual participants by talking to them and so gain a more comprehensive and nuanced understanding from their point of view (Kelly, 2010; Liamputtong, 2013).

As the study progressed, however, it became obvious that the role of the supplement products themselves needed to be included as an important part of the study. This led me to consider a post-humanist element in the overall approach so that these products could be given due consideration. Post-humanism or materialist thinking, encompasses a diverse range of ideas (Bennett, 2010, 2012; Braidotti, 2006; Coole & Frost, 2010; Law, 1999), but they are all consistent in contesting the binary opposition that sees matter as simply inert and passive until humans take an interest in it (MacLure, 2015: 96). This way of thinking disturbs the privileged position of human agency and the primary importance it accords to human "language, discourse, culture and values" (Coole & Frost, 2010: 3). It acknowledges that material factors are influential in what happens both in individual lives and more generally within society. Matter is seen as having agency of its own, and that it can be "...active ... productive, unpredictable" (Coole & Frost, 2010: 9). Bringing matter back into consideration does not mean excluding the human, but rather restoring materiality to its place and recognising that matter and discourse come together "...in complex and shifting arrangements from which the world emerges" (MacLure, 2015:96).

To write about both the human and non-human in the context of this study, I have chosen to use the term 'actants'. Actants is a neutral term which simply describes the many and various elements that come together in a phenomenon and avoids the limitations of language that always categorises people and things as being essentially different in their capacities. An actant

can be any entity, whether human or non-human, that “modifies a state of affairs by making a difference” (Latour, 2005: 71); people, material things, discourses, practices, relationships, or concepts. Using materiality thinking to examine supplements and supplement practices made it possible to incorporate any actants which proved to be important in the study and allowed a greater range of insights than would have been possible by focusing on human discourse alone.

Venturing into a post-humanist approach and combining it with the study’s original constructionist intention created a number of tensions in bringing these potentially divergent approaches together. Nevertheless there were compelling reason for including both. Much of the data entailed participants’ perceptions about what was natural, holistic and safe about supplement practices. I believed that constructionist analysis was the most fitting way to do justice to these data, which had been generated through talking to participants, and was the dominant mode of investigation throughout the study. On the other hand, I considered it equally important not to leave aside the unexpected demonstrations that had occurred during the interviews about the role that the material products played in their lives. This dual approach was a direct result of being confident enough to stay with one of the core strengths of qualitative research, that is, the researcher needs to remain open to being surprised by developments that come to light in the course of their investigation and not set them aside if they do not fit with prior intentions or assumptions (Green & Thorogood, 2009).

A number of authors have listed criteria against which qualitative research should be measured, citing characteristics such as validity, reliability and transferability (Pope & Mays, 2006) or credibility, authenticity, dependability and confirmability (Liamputtong, 2013). Lists of desirable qualities, however, tend to raise more questions than they answer. These terms are “quite loose and imprecise as far as criteria go...and are themselves subject to interpretation...and seem resistant to ever being translated into relatively stable and general standards” (Smith, 1990: 185-186). I found that a more helpful approach was Liamputtong’s general comment that “validity lies more in a subjective, human estimation of what it means to have done something well, to have made an effort that is worthy of trust and to have written it up convincingly” (2013: 43) This was the guidance I attempted to follow in being clear about the evolving process that resulted in moving between a constructionist and a post-humanist approach in different parts of the thesis.

Reflexivity

One measure of being trustworthy as a researcher working within a constructionist frame is to acknowledge that they do not sit outside the data as an authority who creates categories that interpret and explain the subjects of the research. Rather they need to consider how their own experience, context and broader world view may influence what is found (Green & Thorogood, 2009: 23; Liamputtong, 2013: 29-30; Potvin et al., 2010: 447). They need to reflect critically on the preconceptions and values that they bring to the topic and subject them to the same analysis that they use with the data (Green and Thorogood, 2009). Essentially the researcher needs to acknowledge that a completely objective and value-free stance is not possible, and that their findings from research will inevitably be coloured by their own views and experience. Malterud (2001:484) defines this as “the knower’s mirror: an attitude of attending to the context of knowledge construction, especially to the effect of the researcher, at every step of the research process.” That means researchers need to examine how their own assumptions and background have influenced their choice of topic, their research methods, and the analyses, interpretations, and writing methods that contribute to the final result (Bourke, 2014; Moser, 2008; Wiederhold, 2015). Rather than this being a disadvantage, explicit acknowledgement of personal and intellectual preconceptions enhances rather than detracts from the credibility of the research findings as the different ways that each researcher approaches the same subject help to generate a more complex understanding of the phenomenon in question (Malterud, 2001). In the following paragraphs, I set out my reflections on my own prior experience and assumptions I brought into the research.

As a mature student with a wide range of life experience over more than six decades, I believed that I came to the topic with the advantage of having witnessed many changes in social thinking that had come about over this time. I had lived through major changes in technology and communications, advances in treatment and prevention of health and disease, the globalisation of trade and dissemination of goods, and an increasing diversity of the New Zealand population through immigration. Another important difference from my early years had been the change over the last 60 years from beliefs that nature was there to be used by humans for their purposes and benefit, to the belief that the natural environment must be protected from exploitation and sustained for generations to come. These changes had brought new ideas, discourses, and practices that were widely different from the homogeneous society of my childhood in the 1950s and I believed they had all played some part in contemporary notions of health and illness and had an influence on the use of supplements.

On a personal front, I was also well aware that I had led a secure and relatively privileged life compared to many others. I had the advantage of a stable upbringing and had enjoyed access to a wide variety of educational and occupational experiences across a variety of fields. I had studied and worked in the humanities, then in health sciences information, and over the last several decades in public health and primary health care research. I was conscious of the fact that this experience would have inevitably influenced how I thought about supplements and their users, and that I would need to guard against a potential tendency on my part to privilege the accounts of people who were more like me, and perhaps to place less credibility on those reporting attitudes and behaviour in relation to supplement use that was beyond what I would be comfortable with. Yet I was also aware that participants whose views were framed by a different world view from mine (that is, without the same longstanding exposure to the academic and health world), would be the most likely to contribute new and unknown information that would enrich my study.

Although I used supplements myself from time to time, particularly to ward off respiratory infections, it was not something I had given much thought to or felt strongly about before the piece of previous research which had aroused my interest. I also believed I had a relatively neutral position towards the orthodox health system, seeing its practitioners as necessary and valuable, particularly in acute care. At the outset of my study, I believed I had no fixed opinion either for or against supplement use and believed I had a good grasp of the main issues. Just how superficial this turned out to be became apparent as I progressed through the study and heard the diverse views of the participants. It was oddly reassuring, however, as it confirmed that the topic I had chosen was worthwhile investigating in depth. The contact with the participants, the settings in which we met, the data itself and the reading and theory I examined opened up a whole new range of ideas about supplements and insights about their place in people's lives and at a more complex level than I had considered previously. Jackson and Mazzei (2012:6) have remarked on the way a researcher's memory of the interviews and their interactions with the participants, their personal and professional knowledge and their "shifty selves as researchers", inevitably has an effect on the way they think. This very much reflected what happened to me during the course of the study where my own thinking evolved in unexpected directions as a result of my experiences in conducting the research and becoming immersed in the theory and data. I note in the following chapters the instances where this happened.

Methods

I chose in-depth interviews as being the most suitable method of generating data for this study as they work well with an inductive approach when new and unknown information is being sought to fill a gap in knowledge about a topic (Pope & Mays, 2006; Rice & Ezzy, 1999). A key advantage of in-depth interviews is that they allow time for the perspective of one individual to be explored in detail, so producing new knowledge through the interaction between the interviewer and interviewee (Kvale 2007 cited in Liamputtong, 2013: 52). They also avoid a participant being interrupted or dominated by the ideas of another person as can sometimes happen in focus groups. Individual interviews within a constructionist epistemology allow the opportunity for new ideas which one participant may introduce to be taken forward into subsequent interviews, thus developing the richness and depth of the data as the process proceeds (Green & Thorogood, 2009; Pope & Mays, 2006; Rice & Ezzy, 1999) For this study, interviews were also the most practical method of generating data from supplement users, who were not a defined group and who needed to be recruited individually over a relatively lengthy period of time.

In qualitative research within a constructionist epistemology, the interviewer and participant collaborate in generating the data as “interaction partners” (Kelly, 2010: 308) and the resulting data are explicitly understood to be the product of this interaction. The relationship should be understood as one of reciprocity and co-creation where the researcher and participant make different contributions to a matter of common interest, “developing and constructing new knowledge” (Ben-Ari & Enosh, 2013: 246). Subjectivity on the part of both interview partners needs to be acknowledged (Liamputtong, 2013). Interviews in this framework are not transparent accounts, however, and can only record what participants say they think or do rather than being “a direct window into their lives, thoughts, and meanings” (Kelly, 2010: 309). Moreover, because it is the interaction between the researcher and participant that generates the data, the interviewee may give a different account on another occasion, or to another researcher, depending on the particular context for each one of them and the social, cultural and personal attributes that each one brings to the interview on the day (Liamputtong, 2013). Interviews need to be treated as ‘accounts’ rather than an objective report of firm beliefs (Green & Thorogood, 2009: 104).

The circumstances in which the interview takes place have an important role in “construct[ing] the power and positionality of the participants” (Elwood & Martin, 2000: 650). It is more likely

that the interview will generate rich data if the participants feel comfortable, and that they will be more guarded if they feel at any kind of disadvantage (Elwood & Martin, 2000; Sin, 2003). It is well documented that the gender, ethnicity, age, nationality, and the social and educational status of both the researcher and participants influence the way the researchers present themselves to the participants and how the participants react to them (Green & Thorogood, 2009:107; Kelly, 2010:309; Liamputtong, 2013:71). Ensuring that participants are able to choose the venue and time of the interview and paying attention to matters such as choice of language and even dress may all contribute to putting the participant at their ease. The cautions about the power differential usually assume that the researcher is the one whose power is the greater, and while this may often be the case (Ben-Ari & Enosh, 2013), it may also be the reverse, where a participant feels the researcher is of lesser importance or professional standing than themselves, and does not take them seriously (Harvey, 2010; Neal & McLaughlin, 2009). Even though the researcher has set the agenda by their choice of topic and asks the questions, the generation of data depends on how well the researcher is able to build rapport between themselves and the interviewee to establish a sympathetic relationship and sense of mutual trust (Karnieli-Miller et al., 2009: 283). Moreover, the researcher is dependent on the participants' agreement to take part and the degree of openness with which they choose to share their experiences, so the power differential can be weighted in their favour if they decide, for any reason, to limit their cooperation. Once the researcher has the data, however, the power lies with the researcher who takes away the participants' words and works with them to transcribe them, select what they find to be salient, analyse and interpret what they find.

In arranging the interviews for my study, I tried to address all these factors as best as I could and in the light of my previous experience of conducting many interviews with a diverse range of people over the years. All participants received information about the study before the interview and had consented to participate. Each of them was invited to choose the time and venue where the interview would take place. Most of the participants had busy lives and by interviewing them individually I was able to accommodate myself to their schedule rather than ask them to work around mine. Most of them chose to invite me into their own environment, whether their home or workplace. A few chose to come to my office either for the convenience of the location or because I was able to provide a private room without interruptions. Several chose a café close to their workplace as they had no suitable space to talk privately where they worked and they needed to avoid disturbing the work of others. It also ensured a higher level of confidentiality for those participants with business interests who may have been reluctant to

disclose particular types of information in a more open forum such as a focus group or did not wish others to know they were participating.

The words of the interviewees that are recorded and then transcribed to become data, however, are not a full reflection of what happens during an interview. The transcriptions cannot convey in totality the emphases and tone of the participants, or their use of humour and irony, their facial expressions and body language, and the ambience of the setting in which the interview takes place. These can perhaps to some extent be captured by interpolating a phrase in brackets to indicate laughing or underlining to indicate emphasis but are still a relatively pale reflection of the dynamics of the interview, which all, to some extent remain with me to this day. However, it was the unexpected addition to the spoken word that proved so influential in the course of the study which prompted me to look beyond the limits of the spoken data itself and allow room for the material things that formed a significant presence in so many of the interviews. These included displays of supplements participants showed me, websites they opened up for my benefit, and brochures and other printed material they gave me. This aspect became increasingly pertinent as the interviews progressed and I came to see that these 'extras', though unexpected, were also part of the overall data. During the study I also collected and made an informal study of the free magazines distributed widely in Christchurch by a health store chain, finding the language and images they used to promote their products of particular interest as well as the products themselves.

The sample

For this study, absolute numbers were less relevant than being able to hear the perceptions of a diverse range of people in terms of gender, ethnicity, and age as well as socio-economic and cultural backgrounds, within the constraints of what I could realistically expect to achieve within the scope of a PhD study. Guidance from qualitative methods texts indicates that there is no set formula for deciding on the number of participants (Liamputtong, 2013). The key points are that the number should be sufficient to explore the research questions in depth within a broad spectrum of opinion so as to obtain "as full a range of observations of the phenomenon as possible" (Charmaz 2004: 986 cited in Bourgeault et al., 2010: 9) from people who would be most likely to contribute information-rich data (Green & Thorogood, 2009: 138; Kelly, 2010: 317). Liamputtong (2013: 19) recommends continuing to recruit additional participants until no new information is being generated, the state known as data saturation. It has been suggested that this may occur with as few as twelve participants (Guest et al., 2006). However, there are

other considerations, such as the scope of the project, the type of research question, the available pool of participants from which to recruit, and the amount of useful data generated in each interview (Hagaman & Wutich, 2017; Hennink et al., 2017; O'Reilly & Parker, 2013). Even though The New Zealand study (Ministry of Health, 2009) was already five years old at the time of recruitment of participants and is even older now, it was the only New Zealand wide study available, was therefore locally relevant and provided a clear definition of dietary supplements. According to the 2009 survey, 'regular' users - defined as those who took a supplement or herbal medicine more frequently than once a week – were more likely to be female than male, older rather than younger, and of non- Māori, non-Pacific ethnicity. Without any defined user group to be approached, however, I found I needed a combination of methods to recruit participants, something which is not unusual in qualitative research (Liamputtong, 2013: 20).

In accordance with the focus of my study, the participants I recruited needed to be using supplements more frequently than once a week for a specific health reason or for supporting their general wellbeing. I made it clear that I was not studying protein powders or sports supplements for performance enhancement. I began by using snowball sampling, the method where a researcher selects an initial few participants whom they know meet the criteria and ask them to recommend others who might be interested in taking part (Liamputtong, 2013). Snowball sampling is suitable for studies where there is no identifiable group that can be approached and participants are relatively difficult to locate. I recruited the first four participants from known contacts who had already expressed an interest in my study. Each of my four initial participants came from a different background; two were known to each other (though each was unaware the other was participating in the study); each of the other two were self-employed, and were unknown to any of the other three. This approach was only moderately successful in recruiting a further group of participants. However, one of these initial participants introduced me to the organisers of a Māori hui (community meeting), and was able to get permission for me to talk about my study there and appeal for volunteers to participate. This was successful in enabling me to recruit further Māori participants. After that I simply approached people I had contact with through my current and previous workplaces, and people I came across on social occasions or through interest groups that I and other members of my family belonged to. I focused on those I considered were more likely to put me in touch with people from different age groups and with different cultural and social backgrounds. I had been prepared to advertise on noticeboards or use social media, but this did not prove necessary. An unexpected issue that arose in the course of recruiting was that a number of my friends and

acquaintances took a keen interest in my study and wanted to participate themselves. I had to explain that it was not appropriate to include people whom I knew well or include too many participants who were too much like me, and turn them down as tactfully as possible.

I had planned to include people who sold supplements and/or provided advice about them in pharmacies and health stores so as to get another perspective on the way people approached the buying of supplement products. I wanted to find out the kind of queries they received, what advice they provided, and more generally how they decided what products to stock, and if they observed trends in the rise and fall of sales of particular products. I excluded supermarkets and online sales outlets even though supplements are easily (and often more cheaply) available from both sources, as I was interested in the face-to-face contact between buyers and sellers. However, I discovered fairly quickly that my assumptions about the users and sellers of supplements being two distinct categories had been too simplistic; people's roles were much more complex and blurred across the spectrum of user/advisor/provider/seller than I had supposed. So while I did approach a number of retail businesses directly in recruiting, and used a different information sheet for them, the concept of two separate categories of participants proved to be unsustainable. All but a very small minority of those who sold or advised on supplements also spoke at length about their own use. As well, a considerable number of the participants who initially presented themselves as users when approached for the study, also proved to have a stake in selling or recommending supplements in some way. Several had current or previous experience as providers of different kinds of alternative therapies (medical herbalism, acupuncture, homeopathy), and some were currently or had previously been involved in network marketing of supplements and herbal products through international companies. There proved to be a two-way avenue into these mixed roles; some had begun selling or promoting products as a business venture or being assigned to a workplace role and then begun to find the products useful for themselves; others had been users and subsequently had taken on working in a business as their interest in the area grew and to offset the cost of their own supplies.

These methods were ultimately successful in recruiting a total of 37 participants, all but two from within Canterbury and two from a connection in the Auckland region. One participant subsequently asked to withdraw, leaving a total of 36 participants: 23 women and 13 men ranging in age from their early 20s to late 70s. There were five participants with Māori and two with Pacific ethnicity; five were originally from countries other than New Zealand. Most were currently employed full or part time; six were officially retired but three of these also ran a part-

time small business selling supplements. All but five participants lived in the greater Christchurch area and three of these lived rurally. I did not ask participants their exact age, their educational background or financial status, as I considered it irrelevant to the study, and that it would therefore have been over intrusive. I was confident that this number of participants ensured a diverse range of perspectives as the participants easily covered the main characteristics that had been listed in the New Zealand study and included others as well. All interviewees were sent the information sheet judged to be more relevant to their primary involvement with supplements (i.e. as a user or seller) prior to the interview (Appendix A,C), and a consent form to read and sign (Appendix B,D). An interview guide was developed as an aide memoire for areas to be explored during the interview and to ensure that none were omitted (Appendix E).

Ethical approval and Māori consultation

Ethical considerations are important for protection of the participants, to ensure that they are fully informed and that there is no pressure put on them to consent to take part. For this study, the ethics application outlined the purpose of the study, the general nature of the questions, and noted that participants could refuse to answer any particular question, or could withdraw from the study at any time without explanation up until the submission of the thesis. Issues of confidentiality were covered; that participants would not be identified by name, initials, occupation or location in the thesis or any subsequent publication, and that their identity would not be disclosed to any other participant. It was noted, however, that the use of snowball sampling as one method of recruitment meant that a recommender would potentially know the identity of another individual who had been approached to participate. The ethics application also set out the arrangements for ensuring that the audio recordings and completed transcripts would be held securely and only seen by myself and my two supervisors. Consultation with the Māori Research Advisor of the University of Otago, Christchurch was also carried out, and on her advice I undertook to include Māori participants in the study in proportion to their percentage of the population in the region, at the time, approximately 7% (Statistics New Zealand, 2013). The participants I subsequently recruited comfortably met this requirement. The ethics application was submitted and approval was subsequently confirmed by the University of Otago Human Ethics Committee in June 2014. Ethics reference number: D14/187.

The interview process

I began each interview by going over the consent form and the purpose of the study. After these preliminaries the order of discussion varied as a number of interviewees began to tell me their ideas about their supplement use as soon as I arrived, even before I could ask the first question. However, the flexibility of the semi-structured approach meant it was not a problem to move between the areas of interest in any order. Five initial interviews were carried out during the months of August and September 2014. These were recorded and transcribed in full before going any further, to allow for some preliminary analysis and reflection on the content and to identify any further areas that should be explored with subsequent participants. This process of moving back and forth between examining the data and then conducting further interviewing allows the researcher to examine and reflect on the data generated so far (Liamputtong, 2013). It allows refinements and adjustments if needed to the interviewing technique, and the ideas from the initial interviews taken forward to generate new areas for discussion and data generation. This process can also prove to be “a healthy corrective for built in blind spots” (Liamputtong, 2013: 242). The remaining participants were interviewed between mid-January and mid-October 2015. All participants were given a \$30 petrol voucher for their participation in the research.

At the end of each interview I explained the arrangements about returning transcripts so that interviewees could review them and comment further if they wished. Forbat and Henderson (2005) discuss at length the appropriateness and complexities of returning verbatim transcripts to participants. They note that the purpose is not to check the accuracy or truthfulness of the account generated, but can be fruitful in allowing participants to reflect further on the topic as well as providing a check on details, for example if words have been misheard in the transcription. They and others have pointed out that there are challenges for participants in revisiting the interview in written form and the process is not unproblematic, with participants sometimes feeling embarrassed about what they had said or how they had said it (Forbat & Henderson, 2005; Karnieli-Miller et al., 2009) and becoming concerned at how they would be represented in the finished document. Corden and Sainsbury (2006) also studied participant reaction to verbatim excerpts in completed research reports, finding that opinions were divided on whether or not they should be ‘tidied’ up. While some preferred the oral account to be represented exactly as it had been said, others felt that unedited excerpts of their interviews presented them in a negative light as being uneducated or unattractive, and would mean that their comments would not be taken seriously. My experience in a previous study had been

consistent with the latter response, and based on this as well as the literature, I believed a limited amount of 'tidying' was warranted. I transcribed all interviews verbatim myself, though I made the decision to omit the 'fillers' such as 'I mean', and 'you know' where I felt these added nothing to the meaning. The decision also had a practical basis in that omitting these filler phrases helped speed the transcribing, particularly in cases where the participant used them numerous times. In my covering email with the transcripts I warned participants that oral speech was likely to look different from a written document when transcribed, and as long as the meaning was clear, any disjointed phrases or repetitions were no reflection on their credibility. I also drew their attention to the fact that my own questions were sometimes disjointed and took care not to edit my own questions to look smoothly phrased when they had not been. Nevertheless, one participant did spend the time editing their transcript before returning it to me some months later.

When I had completed all interviewing and transcribing I prepared a descriptive overview of the main ideas that had come from the interview data but without any verbatim excerpts from the transcripts and sent it out to all participants. As it was going to be several years before the final thesis was ready, I believed it was important to acknowledge their contribution to the research by sharing my findings in this preliminary way. Somewhat disappointingly, I received only one or two brief acknowledgements thanking me for sending it but no comments on the content. It was a salutary reminder for me that while I was to spend the next few years thinking in depth about what they had said, being interviewed for my study was likely to have been a passing event of little importance in their lives and they would have long since moved on from that day. Compiling the overview, however, was helpful as a basis from which to approach the analysis. I assigned pseudonyms to each of my participants, as a means of retaining their anonymity but being more interesting and recognisable in a lengthy text than referring to them by a participant number.

Analytical approach

I had originally intended to conduct a critical thematic analysis, that is, coding the data in a systematic iterative process to identify recurring themes as described in the literature by various authors on qualitative methods (Braun & Clarke, 2006; Green & Thorogood, 2009; Pope & Mays, 2006). Essentially this means taking an aspect of the data and summarising it using a particular word, phrase, or theme. For example, the idea of having personal control over one's health, which was mentioned in various ways by many of the interviewees, could be represented as

'control' whenever this idea appeared in the transcripts. Once the major themes were identified, I would draw from the theoretical and other literature to present an in-depth and nuanced analysis, supported by the data, to develop an understanding of how people use dietary supplements and herbal medicines to care for their own health, and how this fits with contemporary ideas of maintaining health and preventing illness. I could easily have identified and presented several major themes and patterns from the interview data in an analysis based on this type of coding. Sections would have included, for example, personal empowerment by taking control over one's own health; holistic health care versus the biomedical model of health; the concept of natural versus artificial therapeutic products; and the influence of marketing on health conscious consumers. My summary for the participants included all these aspects and several more. All these ideas, however, had already been identified and explored to some extent in the literature, even though supplements were very often treated as just one of the modalities in studies of complementary and alternative medicine (CAM) users in general (Barrett et al., 2003; Brosnan et al., 2018; Furnham, 2002; Lewis, 2019; Stoneman et al., 2013). While it could be argued that a more intensive analysis of these themes, or examining them in combination with one another might add to the body of literature, it seemed unlikely that it would deepen thinking about the underlying personal and societal forces at play within and around the topic.

During the interview process I became more and more convinced that limiting my analysis to an iterative thematic approach based only on the spoken data would be a mechanistic and unsatisfactory way of capturing the wide range of complex ideas and the connections and disconnections between them that had been generated through my interaction with the participants. Brinkman's remark (2014) that he experienced "astonishment, mystery and breakdowns in understanding" resonated with the way I felt as I reflected on the experiences over the 14 months of interviewing. Limiting the analysis to the transcribed words of the participants alone would certainly fail to do justice to some of the non-verbal elements of my contact with them that I have already mentioned above. I wanted to capture the new possibilities that might be developed using a different approach from simply relying on conventional coding. Jackson and Mazzei (2012: 12) make the case for moving beyond coding alone, arguing that the focus on reducing the different codes into a few "macro" codes "locks us into more of a territorialized placed of fixed, recognizable meaning" limited by the current knowledge of the participants and the researcher and works against the production of new knowledge.

I needed to find an approach that would offer something different and at another level from the studies I had already examined and which would include more than just the recorded data from the discussions with the participants. I did this in a two stage process. The first stage was to do a preliminary coding exercise, which was helpful in allowing me to familiarise myself with the interview data in its entirety. It also provided the basis for the descriptive overview (see previous section) that I sent out to the participants. However, I then, under the guidance of my supervisors, turned to Jackson and Mazzei's (2012) concept of 'thinking with theory'. These authors propose that through a process of "arranging, organising, fitting together" (Jackson & Mazzei, 2012: 1), the data, relevant theoretical concepts, the variety of actants that are involved in a phenomenon, as well as the researcher's own prior knowledge and the recollections they take away from their contact with the research participants generates "something new, something different, from mere themes and patterns generated by coding (Jackson & Mazzei, 2012: 6).

This idea from Jackson and Mazzei resonated with me as I had the same rich assemblage of previous personal and professional experiences, the transcribed data, memories of the interviews with the participants and especially of the way they engaged with the material substances of their supplements. I wanted to be able to take the whole experience into account, not just the transcribed words of the participants which I believed were of course, important, but only one part of the whole. MacLure (2015: 106-107) too, draws attention to the limitations of analyses that privilege the spoken word without taking into account how discourse is intermingled with "matter, affect and virtuality". She acknowledges that this involves giving up the safety and comfort of well-known methodology and casting oneself into an adventure into the unknown. I did not find I needed to jettison the results of the coding exercise entirely, but rather to take them forward into a second stage of analysis where I was able to incorporate both discourse and materiality by exploring them using different theoretical concepts.

This proved, however, to be more than just one step into the unknown but an ongoing process of exploring new territory throughout much of the writing of the thesis. Little did I know when I began, what a broad range of literature in diverse subject areas and how many theoretical ideas I would need to read and think about during the study. The trajectory of my own understanding of the theoretical ideas I came across, in particular, changed my way of thinking about qualitative research entirely. My initial ideas about the quest (see Chapter 2) became a personal journey that had rich discoveries but also many difficult and thorny paths. I was constantly reminded that while I was making observations about other people and things and

writing about them, I was also contemporaneously in a process of my own quest, striking out into new territories as I learned about the theoretical ideas I had chosen to use, and grappled with understanding them and putting them to work in analysing my research in a convincing way. The next section gives a brief overview of the theoretical framing that I chose to work with.

Theoretical framing

The theoretical framework for the analysis draws from Deleuze and Guattari's concept of the rhizomatic network of actants that are interconnected in a moving assemblage around a particular phenomenon (Deleuze & Guattari, 1987)⁸. Assemblages are not a domain of reality or a 'thing', but are a process that designates movement and transformation (Jackson and Mazzei 2012:1; Latour 2005:64). The rhizomatic network takes its inspiration from the botanical world. Bamboo, the ginger plant, couch grass, and the mushroom mycelium are all examples of rhizomes, that is, structures which are made up of an untidy, tangled network of nodes and connections and that spread out randomly, largely under the ground, with no apparent starting or finishing point. Like the botanical rhizome, Deleuze and Guattari's conceptual rhizome is similarly made up of heterogeneous threads (Holland, 2013) that are in a constant process of spreading into new areas without any regular pattern or organised structure. The rhizomatic network has been described as a "chaotic network of habitual and non-habitual connections, always in flux, always reassembling in different ways" (Potts, 2004: 19) like "a crazy patchwork quilt" (Holland, 2013: 37). Any thread in the rhizome can be connected to any other one, and the threads can merge or split apart (Dewsbury, 2011), breaking away in a new direction, yet remaining connected to where they came from.

I have applied the concept of the rhizomatic network to my study as a way of thinking about the multiple actants that come together in the assemblage around supplements and their use. These include the individual people, their cultural background and personal experiences, their relationships with others, and the products, discourses, regulations, and commercial activities, all of which are temporarily in a dynamic relationship with one another. Each of these actants is connected to the others in some way, and as the supplement assemblage evolves over time with new products, users, information and events coming in, the actants within it change it and are changed by it. This process of constant flux was described by Deleuze and Guattari as "movements of deterritorialisation and processes of reterritorialisation that are always

⁸ I used a 2013 reprint of *A Thousand Plateaus* but have not indicated this in the reference to avoid the clumsy 2013 [1987] being repeated multiple times.

connected, caught up in one another” (Deleuze & Guattari, 1987: 9). In other words, some products or ideas fall out of fashion (are deterritorialised) and others move in to take over their space (reterritorialise); the new developments are seeded from the experience and knowledge that went before them which is never entirely discarded or ‘unlearned.’ Moreover, the previous actants may ‘reterritorialise’ in a newly animated form that fits with the discourses of the time. As a current example, one need only think of the way the cloth and jute shopping bags of former decades have reterritorialised the space left vacant by the plastic ones that were dominant for so long but are now being ‘deterritorialised’ by current environmental concerns. These changes in the rhizomatic assemblage may build incrementally in a constant slow process, or at times may also be abrupt and swift. These are the unexpected developments that Deleuze and Guattari described as “lines of flight”:

There is a rupture in the rhizome whenever segmentary lines explode into a line of flight, but the line of flight is part of the rhizome (Deleuze & Guattari, 1987: 9).

The ‘explosion’ indicates a dramatic shift; perhaps a chance discovery or random encounter. Yet even while there is a transformative change in one direction, the connection to the overall network remains in place. As a practical illustration of this concept Deleuze and Guattari (1987: 10) used the example of a virus which can “take flight, move into the cells of a different species but not without bringing with it genetic information from the first host.” Deleuze suggested that his theories should be used like a box of tools to “pry open vacant spaces” (Massumi, 1992: 8). Deleuze himself used his toolbox to examine areas as diverse as linguistics, geology, psychoanalysis, and music but the ideas can equally be applied to “any body of choice: a sexual body; a bicycle; a language, a body of art, a film” – the concepts work for them all” (Malins, 2004: 85). The aim of using Deleuze’s toolkit to pry things open is not to define how things are in the world or what they mean in a bounded way, but to trace their tendencies and how they evolve – their way of becoming (Holland, 2013).

The concept of the rhizomatic assemblage of actants is used throughout the analysis and discussion of the thesis to conceptualise the in-process nature of the supplement assemblage and its constant state of moving away from sameness to become something different. This “philosophy of immanence” as Jackson and Mazzei (2012: 87) have termed it, has no absolutes or boundaries but embraces the idea of flow and change (Dovey, 2011). Becoming, with its nature of being always “au milieu” - in process (Deleuze, 1997: 226), is not understood as going towards a designated destination. It is a “stream without beginning or end” (Deleuze and Guattari 1987: 27) that operates in the spaces in between. It is not an essence or a position but

a tendency, an orientation to change (Holland 2013: 34). It opens up the possibility of competing interpretations, avoids attempting to create categories and definitions and brings into view the ambiguities that are threaded through people's lives (Biehl & Locke, 2010).

Within this overall framework, I have taken an eclectic approach, drawing on a range of other theoretical concepts as they became appropriate. Examining the data from a range of different perspectives as I worked through the analysis, was somewhat akin to shaking up the pieces of a kaleidoscope, revealing new patterns that emerge from the same fragments of material when they are arranged differently. While this approach was important and useful, it was also challenging, because separating some actants from the whole assemblage was, to some extent, counter to the whole idea of the inextricably interconnected nature of their relationship with one another. Aspects from one chapter constantly threatened to intrude on others and risk repetition, and yet structuring the thesis required some form of separating them out in order to avoid becoming overwhelmed with trying to write about them all at once.

Each of the next three chapters discusses in turn one major theme that proved to be integral to the overall thesis. Chapter Four investigates and deconstructs the discourses around supplements that were raised by the participants. Chapter Five then examines the role of the material products of the supplements in the participants' lives. Chapter Six looks at the way participants developed a sense of power in their decisions about their health management through combining their experiences of supplement use with ideas of personal responsibility, expertise, and narratives of identity. The discussion chapter brings all these ideas together – discourse, materiality, and power - to show how they form a new way of understanding supplements and those who use them.

Chapter 4: Natural, holistic and safe: deconstructing discourses about supplements

Introduction

In the discussions I had with the participants, many of them spoke about the particular qualities of supplements as being the reason why they used them; that they were natural, holistic and safe. They also contrasted these qualities in terms of what supplements were not; that is, not artificial or made from 'chemicals', not narrowly focused on biomedical health, and not risky. On the surface, these remarks seemed to add little to what had been reported in previous studies (Durante et al., 2001; Rozin et al., 2004; Taylor et al., 2006; Vickers et al., 2006). However, examining the data closely, it was clear that even though the participants seemed to understand that these qualities were self-evident and uncontested, they interpreted them in widely varying ways. This chapter, therefore, aims to get beyond the assumptions in previous studies that have taken these qualities of supplements for granted and by deconstructing them, to show "the tensions and omissions which have been produced without interrogation" (Jackson and Mazzei, 2012: 15).

To think more deeply about the way these concepts were expressed by the participants, this chapter draws on theoretical concepts from Derrida's (1997) writing on deconstruction. While deconstructing the binaries in the debate around these three concepts is hardly new (see for example, (Anderson, 2009; Lupton, 1999; Thorne, 2001; Tulloch & Lupton, 2003), it has not necessarily been applied to supplements and herbal medicines in any detail. The basic concept of deconstruction is that things – whether beliefs, practices, institutions, texts or anything else - do not have exactly determinable meanings and are always more than they currently seem (Caputo, 1997). For Derrida, there is no such thing as a bounded definition; everything has differences within it and the more one tries to tie anything down and limit it, the more it slips away from "...every attempt to totalize, to gather..." (Derrida, 1997: 13), to bring things together and make them into a totality that closes off possibilities for difference, development and change. Deconstruction, on the other hand, means being open to different understandings, new interpretations and to meanings that are emerging as well as those that are current. It does not mean simply tearing things apart into multiplicity or disassociation. That would mean only "anarchistic relativism" (Caputo, 1997: 36) where words or texts could mean anything the reader wanted them to mean. On the contrary, deconstruction should be "affirmative, not in a way that

is simply positive... repeating the given" (Derrida, 1997: 5-6) but transformative, opening [the thing examined] to the future. It must reveal what is not obvious, unspoken or overlooked:

...something in the text which tends to drop out of view [which can]...open things up, to find a way to read "otherwise" (*autrement*) in the name of the incoming of the other (*l'invention de l'autre*) (Derrida, 1997: 77).

I understand Derrida's writing on deconstruction to mean that nothing is fixed in a state where it is utterly stable and consistent through and through; there are always differences and shades of meaning that can be revealed.

Seeing things as fluid in this way, transforms the kind of attitudes that seek to shut down differences as being threatening and instead welcomes them because they indicate multiplicity, evolution and refreshment.

We do not have to choose between unity and multiplicity ...you see, pure unity or pure multiplicity – when there is only totality or unity and when there is only multiplicity or disassociation – is a synonym of death....A culture is different from itself; language is different from itself; the person is different from itself. Once you take into account this inner and other difference then you pay attention to the other (Derrida, 1997: 13-14).

Derrida rejected the criticism of his theory of deconstruction as being a negative concept and emphasised that it was a productive process, that used "the tension between memory, fidelity, the preservation of something that has been given to us, and at the same time, heterogeneity, something absolutely new, and a break" (Derrida, 1997: 6).

For this study, deconstructing the concepts of naturalness, holistic health and safety from risk meant carefully examining the participants' remarks on these qualities of supplements to see how they unsettled the dominant interpretations about them as being concepts that 'everyone' understood in the same way (Jackson & Mazzei, 2012). It meant being alert to the wide spectrum of views that were expressed in the discussions with the participants, as well as paying attention to the nuances that were implied but less directly stated. It meant noticing that some participants implicitly engaged in their own form of deconstruction, offering both complementary and competing explanations about the qualities of supplements in the course of their remarks. It did not mean undermining or negating what any of them said or treating some remarks as insignificant, but opening up the ideas around the qualities of supplements to show how they were evolving.

Using deconstruction within the wider framework of Deleuze and Guattari's rhizomatic assemblage that underpins this study overall allows it to act as a force that diversifies the assemblage of actants. Rather than competing ideas participants put forward about naturalness, for example, being put aside as outliers because they were inconsistent with one another, all interpretations had their place among the heterogeneous components of the assemblage. This diversification resulted in an exponentially greater capacity for connections to be made between the components, which in turn could be seen to be changing the way that the supplement assemblage was spreading out in different directions as it evolved.

According to Bearn (2000, 2013), the crucial difference between Derrida and Deleuze is that Derrida sees deconstruction within a framework of success or failure. Opening up to the 'other', according to Derrida (1997: 6), "this newness, this novelty is a risk ... it is guaranteed by no previous rules." Deleuze, in contrast, moves right outside the framework of winning or losing in the 'game of existence' and "the point of the game floats away, leaving us just playing" (Bearn, 2013: 53-54). Using both Derrida and Deleuze to think about supplements, then, is a way of looking at supplements as ongoing health practices, comprised of multiple components, that are undertaken in the course of individual lives, not focused on any particular end point, and which are always in process, "in the middle, between things, interbeing, *intermezzo*" (Deleuze and Guattari, 1987:26). This approach avoids deciding whether deconstructing the discourses around supplements 'succeeds' or not. Instead, it shows the variety of interpretations around the common discourses about supplements to be unique interconnections that individuals make between the many components in the assemblage, mobilizing them according to what they do in their everyday life, the "plastic habits ... dynamics and ruptures ... that affect bodily states, modes of attention, and ways of experiencing time and space" (Dewsbury, 2011: 149, 150).

The chapter has three major sections which deconstruct in turn the discourses of naturalness, holistic health, and safety from risk. In each of the three sections I have firstly examined the participants' comments to show the way they unsettled the assumed meaning of each of these qualities and showed up the "absent present...which has been ignored in an attempt to preserve the illusion of truth as a perfectly self-contained and self-sufficient present" (Jackson and Mazzei, 2012: 18). I then look at the evolving assemblage of actants that surrounded the idea of supplements as natural, holistic and safe: the products themselves, what the participants said about them, what they said about their own background, relationships, attitudes and experiences of health and life, their reference to discourses in wider society, and their use of information. I show that there were both commonalities and differences in the way the

participants thought about the natural, holistic and safe qualities of their supplements, drawing from the past but moving and changing as the participants themselves moved on with their lives, being influenced by new experiences and new social discourses. To conclude, the chapter looks at the three assemblages as part of a greater and even more tangled assemblage where all these connections are intimately linked in shifting arrangements that are always changing, a process which Bearn (2013: 53) terms “the liquid time of becoming.” This resonated not only with the study participants as individuals who were striving to pursue a healthy life, but also with the idea of the life quest, where individuals evolve in themselves through the ‘becomings’ that take place on the journey.

Nature and naturalness

That supplements and herbal medicines are ‘natural’ is arguably the most dominant discourse around these products and one which formed a frequent topic in the discussions with the participants. Many of them expressed straightforward views that constructed natural products as being simpler and better for them.

I just liked the more natural kind of things rather than getting too carried away with pills and potions. I like them to be a bit more natural. ... I went to a herbalist ... and they would recommend things if I had something wrong ... if you had a sore throat they would recommend this might actually be better for you rather than having something that's got chemicals in it. I guess if I was given the option I would rather something that was natural. (Johnny)

Johnny here seems to assume that there is a standard meaning of what is natural and that the two of us who are discussing the issue share an understanding about the positive benefits that it brings to mind. Johnny is not unusual in contemporary times in the way he talks about naturalness, as others have also remarked (Devcich et al., 2007; Li & Chapman, 2012; Rozin et al., 2012; Rozin et al., 2004). Amos et al (2014: 268) suggest that labelling a product as natural evokes “sentimental pastoral associations” for consumers that they transfer to the product itself, crediting it with being free of contamination and offering health benefits. All kinds of products - fabrics, foods, construction materials – as well as supplements, draw on naturalness in promoting their benefits to consumers (Childs & Poryzees, 1998; Lähteenmäki, 2013; Rozin et al., 2004). The closer one looks at what is ‘natural’, however, the more it demonstrates Derrida’s notion that there are “tensions, contradictions, heterogeneity” (1997: 9) within what appears on the surface to be a single understanding. Deconstructing the ‘natural’ reveals that it is deeply

imbued with complex economic, cultural, social and political currents (Pawson & Brooking, 2013), with many contested meanings, all of which depend to a greater or lesser extent on the contrast between nature and humanity (Kellert, 1993; Rozin et al., 2004; Soper, 1998; Van Koppen, 2000).

Nature has never been a neutral, value-free concept (Kearns & Gesler, 1998); it has been associated with sacredness, beauty and peace, as well as fear and destruction. So while nature is beautiful and beneficent it is also terrifying (Kellert, 1993). Awe and worship of the natural environment are considered the most ancient form of religious belief (Shibley, 2011; Snodgrass & Tiedje, 2008). Many modern customs, too, both secular and religious, have their roots in ancient rites associated with natural features such as springs, hills and rocks (Gesler, 1996: 102; Strang, 2004: 111). Yet nature also brings horror and death through cyclones, earthquakes, volcanic eruptions, wildfires and floods. So in spite of the positive associations that labelling of food products and supplements draws on, for example, nature has many layers of meaning that have differed across historical eras and varied between individuals according to their experience and attitudes to the world (Heintzman, 2009; Lee, 2010; Soper, 1995, 1998).

Until relatively recently, mastering, and improving on nature was seen as a universal 'good' for the human race because it increased the chance of survival in an unpredictable world where no one, however wealthy or important, was exempt from sudden death through disease or the vagaries of natural events (Rozin et al., 2004). During the late 19th and first half of the 20th century, however, major advances in engineering, science and food safety saw these fears moderate as life became less uncertain (Stanziani, 2008). Longevity improved and confidence increased in "Western models of progress" (Soper, 1998: 5) which would improve on the natural world through science and technology. By the second half of the 20th century, however, it became clear that conquering nature was not an unalloyed good and that human disregard for the importance of the natural eco-system had created a range of disastrous consequences (Beck, 2000; Chapman et al., 2003; Johnson et al., 2016; Meffe, 1992). Environmental and human disasters such as the dust bowl in the US in the 1930s (Romm, 2011), the Bhopal chemical explosion (Varma & Varma, 2005), and the nuclear accident at Chernobyl (Bouville et al., 2005; Møller & Mousseau, 2006) to name just a few, saw a realisation that exploiting and damaging the natural environment would ultimately rebound on humanity.

More recently, the series of reports from the Intergovernmental Panel on Climate Change (IPCC, 2019), and the linking of extreme weather events to human-induced climate change rather than to exclusively natural causes (Mann et al., 2017; Stott et al., 2016), have added even more

compellingly to the acknowledgement that the natural environment needs to be respected and cared for and that damage done will eventually have to be addressed. There has been a widespread societal change in attitudes to environmental protection, encompassing several strands of interwoven ideas. Firstly, that natural resources need to be preserved for sustainable use for future generations (Hansen et al., 2013; Holden et al., 2014); secondly, that human health and global environmental health are intimately linked (Rabinowitz & Conti, 2013; Stephenson et al., 2013) and thirdly, that the natural environment and non-human species have an intrinsic value that humans have a moral responsibility to preserve (Batavia & Nelson, 2017; Chan et al., 2016; Piccolo, 2017).

These dominant, though not uncontested, social discourses appear to underpin the attitude to nature and natural things as pure, simple and superior to the non-natural (Amos, 2014; Li & Chapman, 2012; Rozin et al., 2012). One particular way that preference for natural things manifests itself is in relation to substances that are ingested as food, drink and medicines (Aprile et al., 2016; Li & Chapman, 2012; Saher et al., 2006; Thompson, 2003). Johnny, in the excerpt above, demonstrates this attitude in his comments, yet he also implicitly acknowledges that there are gradations within naturalness. He does not explain, for example, what he means by 'a bit more natural' and he constructs the herbalist's products as different from 'pills and potions' because they do not have 'chemicals' even though he may well take them, too, in the form of pills or potions.

Many participants also seemed to see it as self-evident that 'natural products' and pharmaceuticals were on separate sides of a divide in medicinal products and had their own idea of where the boundary between them should be drawn. Prescribed medicines, constructed as 'drugs' were on the other side of that boundary for most of them and not thought of as natural products:

Certainly with the things I use for my family, I think I'm doing the right thing. It's quite empowering in a way. Because it's shown to be natural you feel like you're doing something – you're not pumping drugs into your body. (Vonnie)

It is noticeable that Vonnie's use of the expression 'pumping drugs' calls to mind syringes and hospitals, which emphasise the sharp contrast she is making between the two constructs; one draws on the idea of treating oneself with a simple product from nature, while the other draws on concepts of interventionist medicine over which the individual has limited control. Olivia

brought this out even more directly in her account of treating her child's eczema with a paste made from chickweed (*Stellaria media*) from her own garden:

In a couple of days it had gone. You know, nothing else – we were trying all those remedies - we had gone to get those lipid creams, steroid stuff and then it would go and then come back. With this, a few days – a week and it was gone until maybe the next season and we would try it again. We did that a few seasons and it never came back again. (Olivia)

Olivia makes her point by pointing to the clear contrast between the (natural) home-made herbal remedy and the (non-natural) 'steroid stuff' of the prescribed medicines. Yet a large number of prescription drugs are either directly plant-based or a chemically modified version of compounds from plants, so that the difference between a natural health product and a pharmaceutical medicine can be very small (Holt & MacDonald, 2008: 22-23).

A number of participants, however, without any prompting, commented on the indeterminate line between what was natural and what was not. I did not specifically ask them to articulate what they meant by 'natural' but it is possible that participating in the study led them to think more critically about their practices than before. Whether or not this was the case, they engaged in their own form of deconstruction, reflecting on the competing meanings that existed, including in their own practices.

How natural is 'natural'?

Participants' comments ranged from the sceptical to the pragmatic and the (relatively) idealistic. Some of them acknowledged that thinking of supplements as natural required a certain amount of willing suspension of disbelief, an awareness that the 'natural' label on a product was not something that stood up to investigation and could simply be a marketing tool. Iris, for example, indicated that she chose not to think too deeply about the substances she took which were "*meant to be all natural but it's in a powder so you have to wonder how natural that is*". Bryony shared Iris's scepticism about the products available for sale. She noted that though she bought so-called 'natural medicines' for herself and her family, they were usually powdered extracts in capsules bought from a shop, and quite possibly made in a factory by the same company that made pharmaceuticals:

Just because it is on a shelf and is labelled as natural doesn't mean it doesn't have an effect on your whole body balance. ...natural to me would be if I went and picked

something and I could see all the bits of dried leaves and twigs and dried berries and made some kind of something out of it and drink it. To me that's natural. (Bryony)

However, she acknowledged that this artisan ideal was unrealistic for her and most others, as they would have neither the ingredients nor the desire to formulate their own products. Her compromise was to get products that were “*just as close to natural as I can get in the form of medicine that you get from a health food store or from a pharmacy.*” As Bryony indicates here, if the original substances are going to be sold in shops, they need to be packaged into a stable format that can be shipped to different destinations and still retain their active properties, but in doing so they lose their completely ‘natural’ qualities. Almost all participants relied on commercially sold products and even for those few who made some of their own, it was only as a complement to other products that they bought.

The standardisation needed to produce and market herbal medicines on a large scale so that they are consistently the same quality is another contested area which unsettles the idea of ‘true’ naturalness. The commercial marketing of supplements has been seen as distancing herbal traditions from their craft-based origins in order to turn them into a globalised industry. Some have interpreted standardisation as being politically and economically motivated by “seemingly inevitable biomedical hegemony” (Singer & Fisher, 2007: 25) that wants to force traditional healing modalities to “play the evidence game” (Barry, 2006: 2650) and be brought within the “structurally dominant scientific paradigm” (Jagtenberg & Evans, 2003: 321). The contrasting view is that ‘natural’ (that is, alternative) and orthodox medical approaches have much to offer each other and that they can and should work together for mutual benefit. Wahlberg (2008) for example, supports the standardisation of plant extracts as being an avenue through which they may be accepted as potential treatments available either within orthodox medicine or as an additional support to what has been prescribed. One of the pharmacist participants voiced a similar view; his experience was that an integrated approach provided a greater range of options and ultimately benefited his customers:

[the customer] would come with a prescription and say, well I don't know about this but anyway I was sort of thinking about another alternative, what is there? And so you would still support the doctor who prescribed it but on the other hand you could say, well there are other options, maybe as a helper for what you have been given ...So in a sense it helps that person. Or they will come in and say I've heard that ginko biloba is really good for the brain, what do you think about that? (Lou)

Participants generally seemed to agree in principle with this practical, open approach. They drew from the assemblage of the natural whatever fitted with their own concept and they felt was appropriate in a particular situation. Although some of their comments indicated that they saw natural products and prescribed medicines as ideologically separate categories, they generally seemed to take the view that having access to all kinds of products in both categories gave them greater choice. Even those, like Vonnie, who made the comment about “*pumping drugs into your body*”, were not averse to using prescribed medicines if they believed them appropriate to particular circumstances. They appeared to see this as practical and realistic rather than being concerned that it was inconsistent with their views on naturalness. Some did, however, comment on how disappointing it was that their doctors did not seem to have an equally open and flexible attitude to suggesting natural products as an option:

I feel I have had some really good doctors through the years, I just don't feel that they ever even give the option for the natural way forward. It's usually, here's your whatever medication it is. (Penny)

Another participant, Paul, drew attention to the way perceptions of a product could be manipulated by a simple labelling change; privileging a popular or botanical name of a herbal product would point out its simplicity and naturalness, but the chemical name component could be used in other circumstances to create a different impression:

...because of having chemical names for everything, people are actually looking for it to be simpler than that. The ones in our shampoo are extracted from the palm tree. The neem tree. And the active ingredient in it has got a chemical name - Azarydin [Azadirachtin]. So, people say, are they chemical free? But in actual fact they have got chemicals in them because everything has a chemical symbol of some sort. (Paul)

Other examples of constructing products using different discourses that frame them as either ‘natural’ or a ‘chemical’ product are also easy to find. The wholesome sound of ‘pure spring water’ or ‘naturally fermented cider vinegar’ on labels, for example, creates quite a different perception than if the same products are described as H₂O or E260 on another (Beebee & Sabbarton-Leary, 2010; Plessi, 2003).

Naturalness is clearly not the “perfectly self-contained and self-sufficient” truth (Jackson and Mazzei, 2012: 18) that it may appear to be on the surface. The ‘naturalness’ of supplement products can easily be deconstructed to show the multiplicity of understandings and perceptions about them that unsettle the idea of a dualistic division between them and prescribed

medicines. While some participants appeared to accept their naturalness as being obvious and simple, they also seemed well aware that labelling something as 'natural' did not necessarily make it so. Others were self-reflexive, presenting thoughtful insights about the inconsistencies in what they said and what they actually did in their practices with supplements. The participants' comments reflected the tension and multiplicity that Derrida spoke about that keep ideas alive and make them productive instead of closing them in on themselves. 'Natural', it seemed, was a flexible enough descriptor to retain its overall salience as a concept but one that could be interpreted from a variety of perspectives and fit a variety of circumstances. As other writers have also noted, while everyday understandings about the natural are imprecise and can easily be deconstructed, it is a mistake to overlook the sentiments that they give rise to; the concept of naturalness has a broad and enduring appeal across cultural and philosophical differences, values and self-image (Johar & Siergy, 1991; Soper, 1998: 181).

Importantly, ideas about what was natural were in process of change. It was clear from talking to the participants that their practices and the particular substances they thought of as natural were becoming even more nuanced as they continued to evolve. New products, new circumstances and experiences continued to arise, and new discourses and information continued to come to hand which fitted in one way or another with various individuals' view of what naturalness consisted of. Some of these changing aspects of the natural assemblage were highlighted by the participants, and are discussed below.

The evolving assemblage of the natural: traditional, exotic, novel, ethical

Many of the participants looked back to the past, referring to practices that had been used by their parents and grandparents when they spoke about their preference for natural products. They frequently drew on childhood memories, recalling simple home remedies that had been used at the time. They gave accounts of family illnesses being treated successfully with a minimum of fuss. There was a strong element of nostalgia in the way participants recalled these traditional practices using products that were readily to hand:

My mother was a country girl, and my grandmother. In those days they were isolated, I suppose. There was always lemon honey for a sore throat, those sort of things. Baking soda for bites, vinegar for stings ... (Frances)

Comments like this evoked an idyllic and comfortable past "... as it should have been" (Thomson, 2008: 4-5), when simple remedies sourced from home kitchens sufficed to soothe all ailments.

But as the epigram rather cleverly puts it, “Nostalgia is like grammar: the present is tense but the past is perfect” (Lowenthal, 2015).⁹

Common cultural narratives which draw on memories of a better, simpler past from which unpleasantness has been brushed away are a known phenomenon (Horton, 2008; Taylor, 2000). The (re)construction of childhood as being a utopian time, a golden age that has been displaced by modernity, according to Soper (1988: 188) is not just a contemporary phenomenon but can be found as far back as the beginning of recorded history. Many of the participants’ reminiscences drew on this sort of familiar narrative. Interestingly, no matter whether their childhood years were quite recent or many decades behind them, participants of all ages spoke of their childhood as a time when household remedies had been used at home for family illnesses and “*you didn’t just pop down to the doctor for anything*” (Johnny). They indicated that they were simply continuing this tradition by being self-reliant and using the knowledge that they had been brought up with. They framed their practices learned from their earlier years as ‘natural’ but it was clear that, even if they did not recognise it, both the participants and their ‘natural’ practices had changed and evolved considerably over time.

Two of the Māori participants illustrated precisely how their traditions had drawn from the past but evolved over time, and for each of them in a different way. Caro had grown up in a farming family where rongoā (Māori traditional healing) was in everyday use. She explained that her grandmother was a skilled practitioner and her treatments worked “*for us in the old days*” but since then, attitudes and practices had changed:

In my Nanny’s days, there was always karakia [prayer], there was always a big process. It wasn’t just about making rongoā and selling it and using it. There was all this pre-stuff, you stuff. ... See, at the Matatini [the national festival of Māori culture], and I’m not bagging them, but they had a tent with people in there doing massage and things and they had things in bottles. In my day, they didn’t have that. You became unwell, Nanny went into the bush or wherever, got stuff, made stuff, and did the karakia, and did all the things before she applied or you took the stuff. It wasn’t about going somewhere and buying stuff and taking it. That’s where the difference is. (Caro)

⁹ Lowenthal (2015) cites this epigram and indicates in a footnote that this remark is of doubtful origin and is “attributed to radio historian Owens Lee Pomeroy or speechwriter Robert Orben.” I have not been able to find any further source for this.

Caro was now a grandmother herself, and while she clearly regretted that the old ways were disappearing, she acknowledged that the social context had changed and the practices could not remain static, but had to adapt. The positive aspect, she went on to remark, was that interest in traditional Māori medicine was growing and being opened up to a much wider range of people. She wished that she knew enough to “*educate people correctly*”, but noted that keeping strictly to the old traditions would not be an option for most people as the necessary natural substances were hard to find in urban environments. Another participant, Marama and her family, had a different way of adapting the older ways they knew. They had prioritised retaining one traditional practice they considered important to carry out in the original way they had learned. She and her husband had first-hand knowledge from elders in their family for brewing infusions from the leaves of the kawakawa tree (*Piper excelsum*). They went on family expeditions to rural areas to gather the leaves themselves, recited the traditional karakia (prayers) that had come down to them from older generations, and kept special utensils for brewing and processing the leaves into a liquid. In keeping with changing times, however, they kept the infusion in the fridge and mixed it with orange juice for their children to drink.

Many of the other participants who recounted home health care practices from their past could also be seen to have adapted them as time passed and the context changed. They might still fall back on old home remedies like lemon and honey drinks, but equally they had added new and different options that were readily available. Glucosamine and magnesium, for example, which are clearly not kitchen cupboard essentials, were the most frequently mentioned products in the study, with many participants taking one or the other (or both) regularly. The evolution of health practices in just this way appears to be inevitable and is not necessarily something to be regretted. Moreover, it also happens in less developed countries where people’s use of traditional practices is common but changes over time and when new circumstances arise. An example reported in a study of traditional health practices in Tanzania (Bignante & Tecco, 2013) showed that although some aspects of traditional medicines had been lost, people now had access to a wider range of health care options: herbal remedies and traditional healers, as well as doctors and allopathic medicines, all of which they found valuable.

Somewhat paradoxically, the interest in home-made traditional medicines has given rise also to a surge of interest in the traditional medicines of distant societies that are made from substances little known to Western consumers (Connell, 2006; May, 1996). This fascination has been attributed to a type of nostalgia, not for a personal past, but for a utopian ‘ideal’ and a way of getting in touch with a simpler and more natural way of life that has retained what has been

lost by those living in contemporary Western society (Holbrook & Schindler, 2003; Pickering & Keightley, 2006). While this is clearly an oversimplification of the complexities involved (see Snodgrass & Tiedje, 2008), part of the appeal of unfamiliar substances seems to be in their exoticism, their 'otherness' and novelty "rather than any particular efficacy or medical merit" (Bivins, 2007: 12). There also appears to be an element of the mythologisation of indigenous cultures as exemplifying an authentic and uncorrupted way of living harmoniously with nature, a phenomenon that Davidov describes as:

burgeoning worldwide, creating instances of performed culture through a web of commodification connecting the indigenous producers, brokering their own culture with Western consumers that come in search of their fantasies (2012: 482).

Two examples of these 'new' products sought by Western consumers are powdered maca root (*Lepidium meyerii*) from the Peruvian Andes (Gonzales 2012), and *Garcinia cambogia* (Nayak et al 2010), a fruit from Indonesia. The medicinal uses of maca and garcinia have been well known for centuries in their places of origin but have only recently entered the 'natural health' range in health stores and pharmacies. Loyer and Knight (2018) in their case study of maca, show that the discourses around this so-called 'Inca superfood' draw on an idealised framing of the people of the Andes as living in a nutritional utopia where plants are grown using traditional and timeless methods, presenting it in contrast to the industrialisation of the developed countries where it has suddenly become popular. Certainly, products containing maca or garcinia were heavily promoted in the print publications that I collected during the course of this study, often with reference to their exotic origins.

So while the assemblage of the natural includes discourses of simplicity, homeliness, and memories of the past, it may also evolve to encompass those products which are unfamiliar but seem appealing both because of their exoticism in the individual's particular context and the idea they convey of a more 'natural' way of life. Pickering et al (2006) have argued that nostalgia is not necessarily a regressive longing for the past, but can also accommodate progressive ideals for change. One participant, for example, spent much of the interview enthusiastically describing his recent discovery of a new and exotic product known as etherium gold, which, he told me had originated with the pharaohs of ancient Egypt 2000 years ago, and which he was able to obtain online:

....this is a white powder a nano-particle white powder. They found that throughout Egypt ... there's some temples in Syria that are Egyptian that have every pharaoh there

and it's dedicated to gold and all they found inside was massive amounts of this white powder. And this is what they put in the bread and the mana and everything else that the pharaohs ate that let them contact the after-life. (Cliff)

It seemed as if its main appeal for him was in its novelty, exoticism and links to a distant mythical past rather than any particular naturalness. But rather than nostalgia for his own, or an ancient past, he appeared to be using the novel substance as a means to progress and renew his life in which, he told me, he had at times become trapped in negative and damaging behaviour patterns which he regretted and had now put behind him.

Some participants, in contrast, were uncomfortable about the idea of exotic products, commenting on their decided preference for products to which they felt a connection to their own environment:

I feel like our natural environment where we live affects us and what is grown in that environment I feel generally is what is good for the climate and the people that are living there. And when you start getting things from overseas and all over the place out of season and what not, then sometimes you can disturb the balance that you have to you as a person living in the environment and right now. (Bryony)

People with this kind of preference for the local product have been described elsewhere as 'ethnocentric' consumers (Batra et al., 2000; Haque & Maheshwari, 2015), that is, individuals who relate their health and social practices to feelings about their own culture and environmental surroundings. Olivia was another such individual; even more than Bryony, she voiced active disapproval of exoticism and found it to be a form of cultural appropriation, an attempt to 'buy' into traditions that had no place out of their own context:

I have a distaste for a lot of that ... new ageism, stuff that goes into things that I don't understand why you would want to connect to something that is so foreign. ... On the other hand, if you are connecting to traditions that your ancestors have practised for thousands and thousands of years but have been displaced through colonisation or other effects of migration, for me, that's an entirely appropriate way back to source. (Olivia)

Olivia is not alone in viewing the 'exotic' in this way. Davidov (2011:483), while primarily discussing eco-primitivism, has referred to the appeal of the exotic as a form of retro-colonialism, where fragments of nature serve to connect the user to "post-colonial fantasies of an authentic pre-industrial harmonious fusion of nature and culture". But this too is not as clear

cut as it seems; what is 'natural' and what is 'exotic' evolves over time and space and is never static. Many plants now perceived as being local and natural in New Zealand, are not natives, but arrived with European colonisation in the 19th century. Centuries before that, the kumara, a staple of the pre-European diet for Māori, was in its turn brought to New Zealand from islands in the Pacific and adapted for New Zealand growing conditions (Law, 1970; Yen, 1963). Additionally, participants' interpretations of what was 'naturally' found locally tended to vary depending on their own life trajectory. Bryony quoted above, indicated that for her, it was plants that grew in her own garden and nearby, regardless of where they were originally from. Devon, on the other hand, who had come to New Zealand quite recently as an adult, did not consider the herbs she knew from her home country as being 'local' to her new surroundings:

So that is perhaps another unique thing here, that we use western medicine – or western herbs, which actually have to be [imported] – well some of them grow here now – but they are not natives here. (Devon)

Even very recent 'exotics' that have come into favour as components in natural products, such as the goji berry plant (*Lycium barbarum*), can now be bought from plant nurseries in New Zealand by the home gardener, demonstrating that being 'local' is a dynamic concept that resists being bounded to a physical place once it becomes established in another. Modern communications and population movements, globalisation and multiculturalism give rise to co-mingling and fusion of cultures that at the same time "dilutes, enriches and alters individual cultures" (Craig & Douglas, 2006: 323). So the assemblage of the 'local' and 'exotic' is made up of individual connections, and is continually evolving, including, in the world of herbal medicines.

Another evolving meaning of the 'natural' that came to light in the study was an implication that natural products are environmentally sustainable and therefore an ethically responsible choice (Soper, 1998: 2; Todd, 2004). A considerable number of the participants commented on their preference for the Kiwiherb® range of herbal medicines, where both the name and the use of New Zealand native plant products indicate that it is literally, 'rooted' in the local environment:

...we are developing a whole lot more natural based products within New Zealand compared to way back then, which is interesting...maybe it's the clean, green image that we have. ... Maybe the greeny side of people in New Zealand who are conscious of the carbon footprint as well, whether that comes into it ... accessibility, I think we are more looking after our own in our own little space. (Lesley)

Here Lesley is drawing on discourses that construct the New Zealand environment as a pristine land of natural landscapes symbolised by the international marketing promotion that has been used to advertise New Zealand tourism and agricultural products as ‘100 percent pure’ (Desmarais, 2015; Patil, 2019). Though easily deconstructed to show that the New Zealand environment cannot live up to this impossible claim, the belief that New Zealand has a unique and largely unspoilt natural environment has tended to persist. The use of New Zealand products in supplements resonated strongly with other ‘ethnocentric’ (Batra et al., 2000) participants who valued home-grown products that they found familiar and culturally congruent with their own upbringing. Lesley’s comment about being conscious of the carbon footprint also touches on the concept of reducing the environmental impact of bringing imported products in to New Zealand when they can be produced on site, and implicitly draws on concepts related to the wider discourses around climate change and human behavior that affect the natural environment (Holden et al., 2014; Stephenson et al., 2013).

While the Kiwiherb® products appear to live up to their reputation of using (at least some) home grown ingredients, labels that claim naturalness do not always live up to what they imply. The phenomenon of ‘borrowing’ an aura of naturalness but without any grounds for doing so is known as ‘greenwashing’ and is a way of promoting sales by linking to discourses of sustainability and naturalness that resonate with consumers. ‘Greenwashing’ has been described in the supplement field (Todd, 2004), as well as in the marketing of organic foods and fair trade products (Jaffee, 2010; Jaffee & Howard, 2010). Moreover, even if products themselves are genuinely naturally grown and produced, there may be other perverse effects if a particular plant becomes the focus of a wave of global attention. One participant raised this issue in relation to the surge of interest in honey and oils from mānuka [*Leptospermum scoparium*], a New Zealand native plant that grew prolifically in her home area:

An American company had come in to the Hokianga [a rural area in the north of New Zealand] and bought some land up there that had loads and loads of mānuka. There were acres of it full of mānuka it is going to America and they are putting it in plasters and bandages. ... What that spoke to me was, why didn’t Māori get on to this? Why are we leaving Americans to come and buy our land and we can’t even buy it? Then they speak of – we are going to bring work into the Hokianga, we’re going to bring revenue – of course it hasn’t happened. I think they are getting Norwegians and Germans, you know, tourists, student visas, to work, to do that, and not the locals.
(Marama)

Not only had the local population missed any benefit as Marama suggested, but the swift rise in global demand for mānuka products had been acutely negative. The so-called ‘mānuka honey wars’ had broken out; thefts, vandalism, violent beatings of competitors, outsiders coming into the area, uplifting or sabotaging competitors’ hives, poisoning the bees, and putting long-term beekeepers who understood the sensitivity of the local ecology out of business (Neal, 2016; Roy, 2016). A different set of adverse consequences from the same popular demand for naturally grown herbal products in Nepal was reported by Kunwar et al (2013). Whereas local people had been able to gain an extra means of livelihood for their families by gathering and selling the plants (Larsen & Olsen, 2007; Olsen & Larsen, 2003), the lack of an overall strategic plan for sustainability had “pushed many of Nepal’s medicinal plants to the brink of extinction” (Kunwar et al., 2013:1). So while both the mānuka products and the Nepalese medical plants were certainly ‘natural’ by one reckoning, they resulted in environmentally and ethically questionable situations.

This kind of blending of the natural into the different, new, or ‘other’ also seemed to be linked to a further phenomenon that I encountered on my pharmacy and health store visits. Some of the products in the ‘natural health’ section were branded with names that made them seem *more* like a chemical or pharmaceutical, rather than anything obviously ‘natural’. Examples included CoQ10 (Co-enzyme Q10), Kyolic (a garlic extract), and curcumin (from turmeric), all of which are derived directly from natural substances. Kerry, a participant who worked in one of the stores I visited showed me sample sachets of both Kyolic and CoQ10 that she gave out as a trial for customers who wanted something that might enable them to cut down or even substitute for some of their prescribed medicines that they believed were giving them negative reactions:

...there seems to be a little bit more sensitivity coming in to drugs. I can’t take that because it reacts with me so I take CoQ10 and Kyolic instead for my blood pressure, that sort of thing. I’m not sure whether that’s because I am dealing with it more often or because that’s a trend. (Kerry)

Deliberately branding products with a name that conveys neither what the product does, nor the common name for what it is, seems a puzzling strategy. Several things may possibly be happening here at once that make the seemingly counter-intuitive label work: the name is both novel and intriguing so that a certain mystique is generated for those who are attracted to something ‘other’. Moreover, because it is shelved in the ‘natural health’ space and alongside products with functional names for similar conditions, those whose prime need is to stick with ‘natural’ products may be reassured, even though the name seems obscure at first sight.

Conversely, it may also be that the more 'medicinal' sounding name may reassure others new to or suspicious of 'alternatives'.

Deconstructing the natural shows how it "opens things up for] the "incoming of the other" (Derrida, 1997: 77) and undermines the notion of a sharp dividing line between what is natural and what is not. The participants' comments about what was natural were at once far more nuanced and also far more productive of change and development than the polarised oppositions that see separately bounded categories between natural products and prescribed medicines. A spectrum of meanings of naturalness could be accommodated within the assemblage around supplements no matter where individual participants drew their own line between what they considered natural or not. The diverse products, public and private discourses, experiences and understandings of the participants and the unique connections that each person had made between them formed a complex network of actions and interactions around ideas of what was natural. Past and present, novelty and tradition, exoticism and localness, environmental sustainability, all were tangled together and connected to naturalness in different ways. Names of products could be highlighted as simple natural substances, or presented to appear more like a medicine. Older ideas might fall out of favour and be discarded, or just as easily be reformulated or reimagined to suit changing times. The connections and relationships between the many components could be arranged and rearranged according to the interpretation of different individuals, in a constant state of immanence, connecting to "the semantic and pragmatic contents of statements, to collective assemblages of enunciation, to a whole micropolitics of the social field" (Deleuze and Guattari, 1987: 6). Together all these perspectives of the natural formed an intricate and complex rhizomatic assemblage that was constantly in a state of becoming and changing.

Woven into the components of the natural was a further notion as yet only touched on; the idea that natural products have integrity; they are pure, complete in themselves, whole and untampered with by human interference. As such they are often described as 'holistic' and the use of them to be a part of an 'holistic' approach to health care. The next section of the chapter examines the various interpretations of this ubiquitous word that were manifested in the discussions with the participants.

Holism and holistic health

Studies examining the preferences of users of alternative products and therapies have commonly accepted participants' assertions of the preference for 'holistic' health without

further analysis or comment (Barrett et al., 2003; Doel & Segrott, 2003; Sointu, 2013; Vickers et al., 2006). Peters et al (2003: 121) for example, report without further comment, that the people they talked to stated they wished “to take a more holistic approach to treatment and health.” Similarly, Vickers et al. (2005: 5) found that participants in their study “preferred a more natural way of healing embedded in a holistic approach”. The underlying idea in all these attempts seems to be that holistic health care is everything that ‘reductionist’ health care is not (Bell et al., 2002; Plsek & Greenhalgh, 2001). Participants, too, talked about holistic health as a desirable approach that went beyond biomedical care. Lesley, a health store owner, for example described her approach to clients as:

.... putting the jigsaw puzzle together for them and then I can make a much better go at supporting whatever system is down or supporting where they are coming from – a holistic approach, if you know what I mean. (Lesley)

The term holistic as it is used in general speech today, however, is itself an assemblage of ideas that span almost any area of human endeavour. While ‘holistic’ is frequently seen in relation to health and health care, it is also used as a descriptor for fields as diverse as computing (Soomro et al., 2016), religion (Parmer & Rogers, 1997), organic farming (Hole et al., 2005), entrepreneurialism (Jensen, 2014), human resources management (Hecklau et al., 2016), the organisation of government services (Dawes et al., 2004) and many more. Health practitioners who describe themselves as holistic range from registered medical professionals in general practice on the one hand (RNZGP, Undated), to alternative therapists offering services such as “a holistic pulsing journey to peace awareness and healing” (Murray, Undated). It is no wonder then there is a “plurality of understandings of holism, [that] encapsulate a fluid spectrum of perspectives”(Nissen, 2011: 80) covering scientific, sociological and metaphysical world views. As Kretchmar (2013: 23) notes succinctly, “much traffics under the name of holism today”.

There are two vastly different philosophical approaches to holism. The first of these, the cosmic or metaphysical view of holism, has its origins in the eastern religions of Hinduism, Taoism, and Buddhism (Cobb et al., 2012; Erickson, 2007; Shroff, 2011). Holism in this sense is the belief that all matter, whether human or non-human, is unified by a life force; the self is merely a small part of the collective which in turn is part of the wider cosmos (Joshnloo, 2014; Shroff, 2011). The abnegation of the self and its desires are viewed as the way to achieve inner peace and harmony rather than the individualism and autonomy which are more generally admired in Western societies (Ricard, 2011; Shamasundar, 2008). The same fundamental belief in a unifying life force that permeates all matter is also shared by many indigenous cultures including Canadian First

Nations (Auger et al., 2016; Hunter et al., 2006), African and South American traditional healing systems (Izquierdo, 2005; Truter, 2007). Similarly, in the Māori world, the life force (mauri) exists in all things, binding people to the environment and to the whole cosmos (Mark & Lyons, 2010; Roberts et al., 1995):

Everything is related – people (living and dead), land, sea, flora and fauna, and the spiritual world. Land, sea, wind, and other environmental elements A person’s well-being [is] intimately linked to the wellbeing of all others, human or non-human (Waitangi Tribunal, 2011: 64).

In the metaphysical view of holism, an individual is intimately connected with everything around them and their health and wellbeing will be disrupted if their body, mind, and spirit are out of balance within themselves, or within their wider family, society or natural environment.

The other major approach to holism was first proposed by Smuts in his 1926 publication *Holism and Evolution* (Erickson, 2007; Freeman, 2005; Nissen, 2011). Smuts’ defined holism as a state where the body, mind, and spirit are in perfect balance within each individual. If this state is achieved, the totality constitutes more than the sum of its parts. It is a creative synthesis where “all parts reciprocally influence and determine each other...” (Smuts 1926: 86 cited in Nissen 2011:77). Adherents to this view of holism dismiss the life-force, or metaphysical approach to holism as belonging to “primitive and closed belief systems” (Baum, 1998). They prefer to distance themselves from it, terming it ‘vitalism’, and describe it as superstitious, anti-scientific, and lacking in intellectual rigour (Nissen, 2011). Smuts himself described cosmic holism as “...a vague expression, already ruined by popular use and abuse” (Smuts 1926: 86 cited in Nissen 2011:77).

Much contemporary writing, however, seems to subscribe to neither of the two theoretical approaches entirely but to draw from both in a range of widely different combinations. Where definitions are attempted they seldom agree with one another; some incorporate metaphysical elements while others do not (Erickson, 2007; Goldstein et al., 1988; Hoffmann, 1988; McColl, 1994; Shroff, 2011; Sointu, 2013). One commentator, for example, states that holistic health promotes “integrative energy that pervades, unites and directs all human dimensions” (Goddard, 1995: 810), while another (Shroff, 2011: 245) proposes that the term ‘holistic health care’ can be used “interchangeably with alternative or complimentary [sic] medicine”. Orthodox medical practices too draw very different meanings from the term. A New Zealand ‘integrative’ medical practice indicates it follows “an holistic philosophy...addressing body, mind and spirit” (Helios Health, Undated), but the definition by the Royal New Zealand College of General

Practitioners omits any reference to things spiritual, or even emotional. Their definition, instead, refers to the way health services are provided, contrasting specialist with generalist care:

Where hospital doctors often focus on just one part of your body, a GP looks at your whole body, your background, and the environment you live in when diagnosing illnesses and prescribing treatments. This is known as holistic healthcare (RNZGP, Undated).

McEvoy and Duffy (2008: 413) attempt to pin down exactly what holism is and provide a detailed analysis of what they term the “nebulous and subjective” concept of holism. However, the lengthy table of components they list appears to add further to the confusion and demonstrates the futility of trying to provide a bounded definition. Their efforts underline yet again Derrida’s insistence that any attempt to “totalize, to gather” into a unified and bounded definition is doomed to failure and will always run up against “the limit it had to encounter” (Derrida 1997: 13).

My own ideas about holism and holistic health were just as ill-defined at the time of the interviews and I accepted what the participants said without exploring further how they understood the concept of holism. It was only on analyzing the data that I realised how vague and undefined the participants’ statements were when they mentioned holistic health, although clearly they all recognised it as something positive to aspire to. None of them referred directly to either of the philosophical approaches to holism, and none reflected on the meaning of the term as several had done when talking about what was natural. Nevertheless, on closer examination of the participants’ comments, I was able to distinguish a number of underlying concepts that provided some insights into the meanings that they associated with the aspiration for an holistic approach to caring for their health.

Balance and uniqueness of the person

Foremost among the ideas participants expressed regarding holistic health were their various interpretations of ‘balance’. Balance (or harmony) is an important and uncontroversial concept in holism (McEvoy & Duffy, 2008; Shroff, 2011) and one which is common to both the cosmic ‘life force’ and the ‘integrated individual’ theoretical approaches.

I would say I am into holistic, without being over the top. I'm into the whole thing about doing the best you can for your body, looking after yourself, everything in moderation kind of. (Frances)

Frances here interprets the idea of balance as moderation and avoiding extremes. There is a suggestion in her comment that she applies the idea of balance not only to her physical health but to other areas of her life as well. For Murray on the other hand, the idea of balance was about the physical body alone and the use of supplements was to ensure he had what he believed to be the 'correct' mix of nutrients for good health:

...the unpaired electrons attack unhealthy cells trying to balance themselves. Well if, for whatever reason, the body is slightly run down, the baddies can overwhelm the goodies and invade the body. So if the body is healthy through having all the sufficient minerals, vitamins and amino acids, it can stay at that higher level of health and fitness. (Murray)

Wendy similarly focused on the body and the importance that she and her husband placed on "getting the balance right" by adding various supplements to their diet in addition to the food they ate. Bryony's views, on the other hand, were more aligned with the concept of the body as an integrated whole; in her view, she said, any health care treatment should be designed to address a person's "unique way of disharmony" and restore their "whole body balance".

Other participants, however, seemed to connect their idea of balance with cosmic holism. In the discussion with Tracy, for example, she referred to being guided by the Māori model of health which uses the metaphor of a house with four pillars, all of which must be equally strong to keep everything in balance. The four pillars encompass physical, mental, spiritual and family health and are all linked together, reaching beyond the individual to the extended community and the wider cosmos (Waitangi Tribunal, 2011: 64).

I don't know, whether because of being Māori or thinking differently that I look at it as more holistic, it's every part of you. So for example, really simply to put it, te whare tapa wha [the Māori model of health]. [If] you are not looking after one particular area ...you can balance, but if there's any stress comes on, then you can lapse. (Tracy)

A second theme that came through strongly from the participants was when they spoke about using supplements and other alternative health care modalities because they desired 'more holistic' health care. Although the statement is vague, in essence there seemed to be several

related aspects that were important to participants. Holistic health for Trudy was about having underlying beliefs that supported their whole persona and enabled them to enjoy living; it was not necessarily about their physical state:

How do you know what perfect health is? I don't know. What is it? What does it look like for people? Perfect health might be you are able to walk? That for some people might be perfect health. For other people it is never being sick. I don't know, is it a worthwhile quest for people? I don't know that it is. I think there is a lot of time and effort wasted in not enjoying what you've got currently ... my family are all completely different and they all have their own set of beliefs equally as valid as what mine are and just as soul nurturing in their own way. So really, the holistic thing coming into it.

(Trudy)

It is interesting here that Trudy refers to the idea of the quest, indicating that it goes beyond health to the meaning that can be drawn from life even if physical health has limitations. Sally also saw holistic health as being beyond the biomedical approach. She related how disappointed and humiliated she felt at the attitude she had experienced from doctors in relation to her longstanding pain. She had been through many investigations and referrals without any explanation being found, yet her pain persisted. Her account showed that she believed that the medical profession had come to find her tiresome because they were unable to find any cause that fitted their disease model and had 'washed their hands' of her problem:

...the doctors just don't want to know. Put me into pain clinic. All in the head in the end. And that was the most awful thing. (Sally)

Sally's comment here suggests that she interpreted the referral to the pain clinic as a rejection by the medical people she had consulted; a message without precisely saying so, that she was imagining her pain and so they were unable to help her any more. The referral was the catalyst, she reported, for consulting an alternative therapist who treated her with kinesiology, massage and supplements and whom she found to be:

...the loveliest guy... a nice guy who is effective": ... I mentioned it [the abdominal pain] to this guy and he tested me – I was lying down...and he massaged it and it has been absolutely fine. So I go to him when I need. ... Oh, I will tell you what it's called, the iliocecal valve and it's either open or shut ... and he has shut it or opened it. (Sally)

Sally's account seems to indicate that it was the empathy of the alternative practitioner and the therapeutic touch of the massage (Monroe, 2009) that finally relieved her longstanding problem. Other participants also spoke about massage, oils, and supplements that had been used or recommended by alternative therapists. These tangible 'things appeared to be an important element of alternative approaches for Sally and for other participants and are examined in detail in the following chapter.

Sally's experiences also had an element of another aspect of holistic care that the participants spoke of; the desire to be treated as unique individuals rather than being categorised, referred between services, or boxed into standard treatments that took no account of their personal situation and context:

...each time we've had medical contacts is seeing that GPs are just trying to throw statins at people or whatever the drug of choice is. (Wendy)

Models of primary health care in New Zealand are continually evolving, with many beginning to branch out into health hubs with collaboration between various professionals offering services such as physiotherapy, massage, nutrition, counselling and social work consultations (Breton et al., 2017; Pullon et al., 2016). There is also more explicit acknowledgement in recent commentary that doctors need to deal with people as individuals, yet the model of care they work within is still one where "the evidence is steeped in averages" (Lawson, 2019: 441). The aspiration may be to provide 'person centred care' (Richards et al., 2015; Van Royen et al., 2010) but it does not yet appear to have been translated into the type of doctor-patient encounters that the study participants said they were looking for. Moreover, in the publicly subsidised primary care system in New Zealand, the time allowed for each appointment with a general practitioner is usually no more than 15 minutes (RNZCGP undated), well below the hour or more that the participants who practiced as alternative therapists said they allocated for each client:

At an initial consultation sometimes it is quite hard to fit into an hour and a half; longer than that and it feels like it's getting too long for the client but the longer the better in terms of getting information. (Catherine)

This last is an important point; as well as their own decisions about supplements, some participants had consulted alternative therapists of various kinds who had recommended various products to take (or avoid), and sometimes provided them directly to their clients as part of the treatment. However, rather than the supplements, it was the time that the therapists were willing to spend to listen to them and understand their individual concerns in detail that

appeared to be congruent with the participants' construction of what holistic health care should be. Invariably, the participants commented first on these interpersonal factors and the rapport they felt with the therapists, only afterwards mentioning what help they found for their health concerns. Holistic care was also consistently framed by participants as simply 'nicer' than orthodox care. Olivia contrasted her experiences of the orthodox health system with her visits to alternative health providers:

Gosh people are nice in alternative health. ... They've got a perspective that you are a whole person so they are willing to engage with whatever your questions are ... it's just a much nicer experience. ... The [orthodox medical] system, you know, you go in feeling sick, to a place that deals with sick people, and you end up coming out feeling more sick – at least mentally – by the experience that you have had there. (Olivia)

The therapeutic effect of an empathetic practitioner who provides reassurance by listening to their client intently and taking their concerns seriously, thereby sparking a sense of relief and corresponding improvement, is well documented (Feller & Cottone, 2003; Kaptchuk et al., 2008; Kelley et al., 2009; Larson & Yao, 2005). It was clear that those participants who had developed a rapport with a particular practitioner found it to have a healing effect.

The desire for wholeness

The participants also appeared to transfer the positive associations of therapist-mediated holistic care to supplement products that were described as being an overall or 'all-in-one' way of looking after themselves. Although supplement product labelling does not tend to draw on holism vocabulary directly (or at least I did not come across any during my study), the implication that a product will cover all needs links to both philosophical approaches to holism, which both carry the idea of unity, whether in all things (metaphysical holism) or within the one individual. Many participants made special mention of products that they used because they were a whole 'package' that would work on any need, even if the need could not be identified precisely. Frances was one of several who took a product labelled 'A to Zinc'; it seemed that the all-encompassing 'A to Z' descriptor answered her need to deal with non-specific symptoms she was experiencing but which she was unable to attribute to any particular cause:

Well, lately I seem to be losing a lot of hair and I noticed I've got ridges in my nails – that can be a zinc deficiency, so I went off the Biomag and put myself just on a general Centrum vitamin that's got a bit of zinc and everything in it. (Frances)

The name seemed to reassure her that it would take care of whatever was causing her symptoms, and set her mind at rest about whether she ought to be doing more to look after herself. The same idea seemed to underpin the ‘Manager’ products. Like the A to Zinc, such products do not tend to make a feature of their naturalness but the (very) small print on the container generally shows a range of vitamins, minerals and herbal ingredients. They have down-to-earth names describing their function and seem to suggest that the consumer can do their part by buying and taking the product, then relax because the product will take over and do everything they need:

I currently take a product, one called Cholesterol Manager and I basically probably haven't stopped taking that for eight or nine years. Another one called Glucose Manager because I am diabetic and the longer I can stay off, or keep the medications from the doctor lower, the better. Whether it's actually doing any good or not I've got no idea. It certainly doesn't seem to be doing me any harm. (Paul)

Paul's lack of concern here suggests that he leaves everything up to his ‘managers’. He describes being on them for a long time, and even though he claims he does not know whether they are doing him any good, there is an implication in his comment that he is confident that the products are ‘taking care’ of his conditions for him.

Other supplements also draw from concepts implicit in holism by using generalised words for desirable qualities such as balance, ‘multi-zone’ and ‘all in one’. They appear to be a modern version of the 19th and early 20th century health tonic, an all-encompassing general remedy that was said to have an enlivening effect on the whole body (Hands, 2018). Tonics were popular in the past for a wide range of non-specific conditions such as ‘weakness’, ‘nervous instability’, nutritional deficiencies or to ‘purify the blood’ (Crellin, 2004: 65-66). Patented tonics in advertisements from old magazines and newspapers include items such as Dr William's Pink Pills for Pale People (Brewis, 1982: 125) which were said to give “pure blood and strong nerves” to ‘ladies’ who took them. Not so very long ago, orthodox medicine too, subscribed to the idea of a tonic, advising substances such as cod liver oil, malt, iron, alcohol, and even cocaine (Houston, 1959; Musto, 1992; Nabarro, 1934). However, by the 1950s, tonics had fallen out of favour and came to be seen as unsophisticated and unscientific compared to vitamins, antibiotics and other modern drugs (Crellin, 2004). Today, the concept of the tonic appears to be undergoing a revival. The free magazines from the health food store chain that I collected during the study had products billed as “a century old immune booster” (Anonymous, 2017: 11) and many examples

of 'detox' products which, like the tonics of the 19th century, were promoted as having an overall effect by purifying the blood or the liver (Anonymous, 2018a: 6).

Yet another form of the all-encompassing 'holistic' product was raised by participants who used or sold the 'total nutrition' supplement packages available through network marketing companies. Usually these were in a powdered 'shake' format to be mixed with milk or water, and as they were said to provide a complete range of nutritional needs, they could be used as meal replacements. Molly, who both used and sold these packages, was enthusiastic about their benefits. She described them as being *"like a tonic. ...basically that just helps your system process things and all that sort of stuff"*. Several participants gave me brochures about products which used similar language (energy, vitality etc) as those sold in health stores and pharmacies, but also coined their own terms, 'neo-life plus' being one example. Unlike the retail products, however, the contents on these packages were not specified. Instead the products were described in an accompanying pamphlet as:

... based in nature: backed by science ... delivered in highly bio-efficient forms in exclusive clinically proven formulas that maximize nutrient absorption, utilisation and benefits by using the most advanced scientific methods and proprietary processes (Anonymous, Undated).

The idea of a tonic for 'everything' appears to have a particular power. It may be that choosing *not* to know what is in a product or how it works somehow invests the substance with a type of mystique which may be spoilt for the user if it were to be itemised into a list of active ingredients and their percentages. One herbal handbook I examined seemed to endorse this view, stating that herbal tonics are *"... gifts of Mother Earth to her children. To ask how they work, is to ask how life works"* (Hoffmann, 1988: 87-88). The implication here is that the process at work is beyond human understanding and there is no need to know more or try to investigate it. It may be that the concept links back to memories of the substances in myths and fairy tales, as discussed in Chapter 2, that have such powerful effects. While these views may seem counter-intuitive in the modern age, several participants with widely differing world views indicated that they were not interested in how things they ingested worked. Olivia, speaking about the products she used, remarked simply that *"It works; I don't need to know how it works."* Molly, rather more pragmatically simply placed her faith in the expertise of the international product company she used, noting that *"They [the company] do all the science so we [the users/sellers] don't have to."* While she did not deny that science needed to be

involved, she seemed to prefer not to know anything about the details and to simply take assurances on trust.

World views like these clearly clash with those who like to find out exactly what is in their products and understand the scientific basis behind them. Moreover they give a ready platform to critics of alternative health care products to label the people who use them indiscriminately as being superstitious and anti-science (Ernst & Singh, 2008; Freeman, 2005: 155). A more measured view than these opposing dualisms, suggests that people who have faith in products like tonics because they see them as holistic rather than directed solely at a biomedical result is a result of a strong medical counterculture in the last several decades which has led to:

...an increasing awareness of the limits to orthodox biomedicine in terms of safety and efficacy and a desire by consumers to gain greater control over their own health care and well-being – especially when orthodoxy had failed to produce results for them individually (Saks, 2003: 144).

As Saks points out, there are many more nuances across the spectrum of products and opinions about supplements and alternative medicines that sit between the avid supporters on the one end and the vociferous critics on the other. The issue cannot simply be dismissed as one between ‘experts’ on the one hand and misguided or ignorant members of the public on the other. It is just as well documented that a degree of faith, rather than strong evidence, underpins some of the most widely used drugs in orthodox medicine. The mechanism of action of paracetamol (acetaminophen) is still regarded as not entirely certain (Bonfont et al., 2003; Graham et al., 2013; Graham & Scott, 2005), and evidence about whether SSRIs (selective serotonin reuptake inhibitors) are effective for depression is said by a number of commentators to be weak (Ioannidis, 2008; Moncrieff & Kirsch, 2005).

While the comments of the participants about holistic approaches to health were framed in an entirely positive light, holism and the concept of holistic health does have its critics. Both metaphysical holism and the integrated individual approaches to holism have been seen as moralistic and to have a tendency to blame people who do not use illness or adversity as an opportunity for personal growth; they are expected to use their experiences to finding meaning in all aspects of life, including those which are unpleasant or painful (Erickson, 2007; Goldstein et al., 1988; Hoffmann, 1988; McColl, 1994). Because both approaches require the individual to take responsibility for rising above their problems - putting aside their worldly desires (metaphysical holism) or reconciling their body, mind, and spirit – they have been criticised as

ignoring social determinants of health such as poverty and unemployment, over which individuals have little control (Lowenberg & Davis, 1994; Madden, 2012; Marmot, 2005). Condemning the individual regardless of their circumstances if they 'fail' to achieve the desired level of integration or inner peace, according to this critique, as Madden (2012: 31) has commented, may "actually strengthen biomedical hegemony."

None of the participants mentioned or even appeared to be aware of the negative views of holism and holistic health. The criticisms raised in the academic literature were simply absent from the discussion. Moreover, participants' comments indicated that they were acutely aware of the problems faced by their own networks of family and friends and how these in turn were often driven by societal conditions. They appeared to see this as an *additional* reason to seek what they interpreted as holistic care rather than being in conflict with it or burdening them with more responsibility than they desired. As Caro pointed out, there are much wider contributors to wellbeing than health care services alone:

So you have to sweep the yard before you can see the floor sort of thing ... all the other things around that need to be good before you can get to the Type 2 diabetes ... the person with the diabetes is thinking about their mokopuna [grandchildren] not having any shoes or not being able to pay. when you are working in a Māori holistic, a kaupapa Māori organisation, you are looking at the whole picture, not just the Type 2 diabetes. (Caro)

Many of the participants made comments in a similar vein; it was a rare conversation that did not touch on the influence of socio-economic circumstances and the wider environment on their own health and that of others. Far from it being an oppressive duty, almost all participants indicated that being responsible for their health was something they aspired to, and wanted to be actively involved in. Moreover, given that the terms holism and holistic health now have such a fluid interpretation in common parlance, and are used with such frequency, these criticisms seem to have lost their relevance, except within academic theoretical discussion. The idea of responsibility is taken up again in Chapter 6.

The two theories of holism have quite distinct beliefs and are markedly different from each other. It seems, however, that ideas about holism and holistic health have been adopted in a form that has become distanced from either of these defined theoretical origins and has taken on a much more diffuse understanding. The variety of ways that holistic health is interpreted appears to defy efforts at defining it (Goddard, 1995; McEvoy & Duffy, 2008) and to demonstrate

precisely what Derrida meant about the futility of attempting to pin things down into a fixed state. Deconstructing holistic health shows a range of diverse discourses being applied across a wide spectrum. They have similarities around themes of connectedness, integration, balance, harmony, and wholeness. However, holistic health is also being stretched to accommodate competing nuances that range from the mysterious healing power of tonics to the statements of the Royal New Zealand College of General Practitioners about the way the health care services they provide are organised. With the term 'holistic' being applied to almost anything, it might seem that it has become no more than a feel-good buzzword' (Cornwall, 2007) in danger of dissolving into "multiplicity and disassociation" (Derrida 1997: 13). On the other hand, it may be that its very ambiguity and vagueness (Davis, 2008: 69) allows the overall concept to evolve in new ways that produce change and development. Whatever the future, however, the important point is that all the different discourses about holistic health were being discussed and were interconnecting with the many other actants in the rhizomatic assemblage, changing and being changed in a constant process of becoming.

Quite different from the vagueness of holistic health, however, were the very specific ideas about risk that the participants held. Every one of them had something to say about risk, had clearly thought about risk in some detail. As Zinn (2008: 3) comments, "risk looms large in present day society", with new risks highlighted daily across a vast spectrum of scientific and everyday situations. Risk drives both societal and individual actions in responses that seek to measure it, contain it, eliminate it, or even in some circumstances, to embrace it. The next section outlines the way the participants viewed risk.

Safety from risk: the body under siege

Participants connected their supplement use directly with efforts to address the risks that they believed they might have been exposed to or were a continuing concern in the lives. Jordan for example, told me that:

Twenty five years ago I would have told you that supplementation was a complete waste of time. That all you needed was a good diet. Then someone challenged me to go and investigate what's actually in our food. I now take up to 25 supplements a day. (Jordan)

Safety and risk are two sides of the same coin as people seek certainty in an uncertain and insecure world (Tierney, 1999; Walklate, 2004). But risk tends to be by far the more dominant discourse (Derby & Keeney, 1981; Spencer & Triche, 1994; West, 2000). The predominance of risk across so many aspects of life has led to what Lupton describes as "an apparatus of expert

research, knowledge and advice [about risk] ... in areas as far-ranging as medicine and public health, finance, the law, and business and industry" (2013: 10). There are two main approaches to investigating risk. Realist perspectives use statistical methods to quantify the current and future likelihood and magnitude of events or dangers occurring and model what actions can be taken to reduce such risks. In health care, for example, they may measure a person's risk of heart disease or diabetes, and to what extent the risk might reduce if certain interventions are made (Agborsangaya et al., 2013; Finegold et al., 2013). Constructionist approaches, on the other hand, examine the different contexts in which risks come to be understood (Lupton, 2013; Zinn, 2008), seeing risk as always being mediated through social and cultural views and experiences. Some constructionist approaches propose that the emphasis placed on risk is a general social response to the uncertainty of modern times and a growing distrust by the public in the capability of science and technology to address the problems that they have created or recognise new ones that emerge. The concept of an overall social response is fundamental to the idea of modernity as a "risk society" (Beck, 1992, 2000; Giddens, 1990). A more individualised and nuanced approach to risk was taken by Lupton (1999) and Tulloch and Lupton (2003), who demonstrated that rather than being generalised as an overall public response, risk perceptions are strongly shaped by individual factors such as cultural background, gender, and nationality. Moreover, that responses to risk change over time as a person moves through life, depending on their experiences, their social standing, their access to resources, and the people they come into contact with. The participants' comments on risk were consistent with this latter approach. Most of them drew on current social discourses about risk, and some of them also cited statistics that drew on realist understandings, but it was clear that they saw risk as personal and contextual to their own lives. They might couch their initial comments in general terms, for example, speaking about the risk that environmental contamination posed to health, but then go on to explain in more detail the personal or family health problems which they believed had come about because of the risks they had experienced and actions they had taken. Their reactions to risk were selective and individualised, illustrating Zinn's comment that the way people handle risk is as much about "different values and lifestyles, power relations and emotions" (Zinn 2008: 4) as it is about any 'reality' of risk.

While the risks that the participants raised were mostly related to personal health, they also ranged more widely, particularly into adjacent issues of food safety and quality, environmental contamination, and potential risks to global security. Each person had a different story to recount as to how they had arrived at their particular position where health risk intersected with

supplements, but common to them all was the idea that the positive 'naturalness' of supplements was one avenue that could be mobilised to offset the negative health risks that concerned them. Bernie described occupational exposures that had influenced his present views:

... ten years working in very chemically intensive environments and huge amount of stress as well. There were lots of tests, some of those were sent over to America, and some of those came back as quite chronic deficiencies in quite a few areas. So nothing else had actually worked medically, so we were using nutritional supplements to get me back on my feet again. (Bernie)

As a result of his experiences, Bernie had undergone a series of training courses to become knowledgeable about supplements and was now an owner-operator of a health food store with several staff. As well, he grew his own vegetables and ensured that any other produce he consumed was 'spray-free' so that he reduced exposure to any pesticide residues.

Importantly, the risks participants talked about were not just those they knew were definite, and those which they suspected were possible or likely, but they also had an awareness that there may be other unknown risks 'out there' which they as yet could not even imagine. As Daase and Kessler (2007: 411) have described, the spectrum of risk encompasses everything from the immediate and specific to those which are entirely unsuspected:

We might have reliable methods of identifying observable facts, thus producing known knowns. But we might also have some methods of dealing with phenomena that we are not 100% sure of, thus creating known unknowns. On the other hand, we must accept that there might be things we do not even dream of and have no method of anticipating; these are the unknown unknowns.

This excerpt comes from the apparently unrelated sphere of global terrorism, but it exactly parallels the categories of risk that the participants raised. These included health problems they already had and feared could worsen; those they did not yet have but felt they might be at risk of developing; and those that may well exist 'out there' somewhere, even though as yet they were unknown and unsuspected. They also differentiated between external risks that might invade them from outside the body, and those that they might be carrying already within themselves and which were lurking there ready to make themselves evident. Using supplements was a defence strategy that could be mobilised in all these categories.

Repelling external invaders

The most obvious of the risks that participants spoke about were the viruses and temporary ailments that might invade the body and take hold at an inconvenient time. Participants used supplements to try and ward off risks that seemed imminent, in the hope that they would be able to keep on with their work commitments, continue to run a business or take care of their family's needs:

All the staff were sick, coughing over me, and I started having a sore throat. I thought, oh no, ... I cannot get sick if I'm going off on a trip like that so I took the prescribed dose of this particular Echinacea product and OK, maybe my body got on top of it or what but I went on the trip, was fine, came back to find that I had no more symptoms or anything and they were still sick when I came back. (Lou)

Fortifying themselves with supplements was an easily mobilised strategy that people could employ as an attempt to protect against illness, which at best would be an interruption to usual activities or at worst, cause financial hardship.

Rather than the familiar hazard of being laid low by a virus, it was the risk of exposure to environmental contamination through air, soil, and water that the participants raised more frequently as a concern. Several spoke heatedly about the lack of control that individual members of the public like themselves had over these dangerous substances that were everywhere and were constantly threatening to invade their bodies and make them ill:

.... we have 27,000 chemicals left over from the Vietnam war, only five of which have been tested in singularity for safety and these are being used now in the agricultural industries. We've got the timber industry; we've got the dairy industry and other industries, all these toxins that we've been exposed to, many of which have in some ways unknown effects on our DNA especially when they are given in combinations. ... I believe the reason that a lot of chronic diseases are on the increase is because of chromosomal mutations, and I believe that's why things like cancers are rife, and diabetes and all these other things. (Jordan)

Jordan suggests that these invaders may be operating at an insidious and unknown level, attacking the very building blocks of the body, its DNA. Bernie, too, was also concerned about being exposed to environmental contamination. He also had statistics at hand, telling me "*there are nine new chemicals released every day untested and there are huge amounts of chemicals in*

our food.” Noticeably, they both draw attention to the lack of testing, implying that harm to health is already happening and yet there is a cavalier disregard on the part of the unnamed authorities they consider responsible. The concerns Jordan and Bernie express are not unusual; they align with wider societal concerns about environmental contamination causing health risks (Werner, 2014) as well as the level of uncertainty as to how these hazards can be managed (Campbell-Lendrum et al., 2015; Costello et al., 2009; Springmann et al., 2016)

Bernie and Jordan’s comments drew on realist ideas of risk, citing statistics and indicating that they believed the risks ought to be better quantified and controlled by those in authority. Yet while their statements were put forward as resulting from their cognitive reasoning, both Bernie and Jordan also described personal health problems which they attributed to environmental exposures, and which had clearly influenced their views. Moreover, they indicated that they were making their own assessment about risk without waiting for any official announcement. They both went on to speak of the strategies they used, including taking supplements, to respond to the risks they believed were important. This reaction is what Beck (1992) termed ‘reflexive modernisation’, that is where individuals feel they cannot trust science or governments and are left to their own devices to decide what is risky and what is not and then take action accordingly.

As well as concerns about contamination from chemicals in the environment, many participants also worried about substances that were deliberately added to foods during processing:

...it is almost like we are getting attacked through the foods we eat and the chemicals we take [in]. ... To me, the best way is to get everything as foods and eat well but with everything being processed so much nowthere is sort of a lot of stuff to say that food, processed foods, all these chemicals, all these numbers ... and that’s not good. (Cliff)

The ‘numbers’ Cliff refers to are the E-codes used by the International Numbering System for identifying Food Additives (World Health Organisation & Food and Agricultural Organisation, 2019). The list of synthetic and natural additives is itself a diverse and moving assemblage; new substances are added and deleted over time, and each country has their own regulatory regime which stipulates which ones are allowable in foods manufactured and consumed there (Carocho et al., 2014). These additives were a welcome advance in health and food safety when they were first introduced in the early 20th century and enforced by regulations to prevent spoilage of food (Carocho et al., 2014; Doyle & Glass, 2010; Holzapfel et al., 1995; Shahidi & Zhong, 2010). Today, however, when food safety tends to be taken for granted, additives and preservatives have

become unnatural ‘undesirables’, viewed with suspicion and mistrust by an increasing number of consumers (Cox et al., 2004) whether or not they are officially approved as safe (Carocho et al., 2014; Devcich et al., 2007). Indeed caution about additives is growing in scientific writing as well, as a recent study of the association between ‘ultraprocessed’ foods and mortality shows (Schnabel et al., 2019).

Along with environmental contaminants and food additives, prescribed medicines were constructed by some participants as a separate category of dangerous external invaders. None of them were opposed to pharmaceuticals in principle, but many had become wary about taking prescription medicines because of previous negative experiences. Several suggested that doctors were too ready to prescribe drugs without cautioning them about possible harm of long term use or following up to check how they were reacting:

... it was the pharmaceuticals, sadly, that got my children into trouble. My eldest son went on to a product called Roaccutane. ... And he developed depression. And kids that have a face that looks like a pizza, actually tend to get depression, and Roaccutane can actually push them over the edge with suicidal tendencies. And that's what it did. I didn't lose him but I came close a few times and he was never monitored properly.

(Lesley)

Moreover, some had found that if they raised their concerns with their doctor, they might simply be offered more of the same medicines or different ones rather than be given any suggestions for non-pharmaceutical treatments. Trudy reported that a family member had been prescribed “*stronger and stronger pain medication ... to the point where he couldn't function. It's not safe*”. Another participant found the tendency to simply escalate the dose of medication if it did not seem to be working was concerning, particularly in the light of her own experiences; she had become dependent on pain medication after a sports injury:

... my GP would just write me out some more prescriptions if I needed it and I was just - no I don't want it, I'm coming off it. ... The specialist offered to give me anti-depressant pills which would help relax my nerves and help me sleep. But he said oh, they're really terrible and lots of people have lots of issues with this one but we won't really know until you try it. (Tracy)

She went on to relate how she realised that her doctors either could not, or were not interested, in helping her overcome her dependence and she would have to take the initiative herself and use strategies outside of formal medicine. With the help of a pharmacist who suggested

gradually reducing her dose and adding a natural sleep remedy she reported she was able to gradually wean herself off the prescription drugs and cope with the withdrawal symptoms, but it had left her disillusioned with medical experts and sceptical about all prescribed drugs, particularly if they were taken over a long period.

Other participants with chronic conditions such as diabetes, cardiovascular or joint problems were also uneasy about some of the medications that they depended on. Several of them mentioned that, knowing the side effects of the drug they took, they were anxious to maintain their dose at the lowest possible level and supplements were a strategy that they believed could help do this:

I take vitamin B12 because of the metformin that is used to treat diabetes. Doing the research on the 'net about that I discovered that metformin was one of the reasons you have low B12 levels ... I just brought it up on the smartphone and was reading through it and discovered the link to metformin and I thought gee ... (Paul)

Participants such as Tracy and Paul found it disturbing that they had not been given any warnings about possible negative effects of the drugs they were prescribed and were taking long term. They indicated that they felt let down by what they perceived as the lack of care on the part of health professionals they had trusted to have their best interests at heart. If they had known, they suggested, they would have been alert to the risk from the start and would have taken steps themselves to counter it. Situations like these create a lack of trust in those who have experienced them. Some commentators have blamed the popular media for the distrust of health risk experts; they maintain that the media has over-emphasised unusual and exotic health risks and downplayed those that are more mundane, such as poor diet and smoking, to the point that it has "...undermined [the general public's] view of their own health, [and] increased their worries about environmental causes of poor health and fostered a migration to complementary medicine" (Petrie & Wessely, 2002: 690). Lupton however, takes the opposite view, finding that being sceptical of official advice and making up one's own mind about what is risky and what is not, is a "highly rational response to the failure of technico-scientific rationality in late modernity" (Lupton, 1999: 68). The participants appeared to be thinking along the same lines and acting accordingly, particularly when their lack of trust was grounded in personal experience. As well as the fears about external substances that they might be ingesting or inhaling, many of them also raised concerns about being invaded stealthily from within by processes that were already going on in their bodies. Supplements, it seemed, could also be

mobilised as a protection against these internal risks, which might be lurking passively waiting their time to become active and damage their health and wellbeing.

The quiet invader within

Even if individuals are leading exemplary lives, and following all the recommended advice about taking care of their health there is always the possibility that they may suddenly find themselves 'at risk' of an unexpected disease or condition. There is no doubt that the 'body at risk' is a constant theme in both the general and academic media. Popular publications tend to grasp new studies of risk and highlight the most alarming points out of context, particularly if they are linked to dreaded conditions like cancer or dementia (Behuniak, 2011; McDonald et al., 2016). Medical systems too tend to give the impression that everyone is at risk, highlighting one risk after another followed by a constant stream of advice and warnings to individuals about how they should conduct themselves in the face of these risks (Crawford, 2004). People who are otherwise perfectly well are routinely assessed for cardiovascular risk, checked for diabetes, and urged to participate in cancer screening programmes (Ali et al., 2015; Canadian Task Force on Preventive Health Care, 2012; Goff et al., 2014; Wardle et al., 2016; Weng et al., 2017). Additionally, technical advances in DNA analysis that have resulted from the human genome project, and the popularity of low-cost direct-to-consumer genetic testing has greatly increased the genetic conditions that can be identified far ahead of any symptom development (Manolio et al., 2019; Peterson et al., 2019). Members of the public can send samples of their saliva for testing and may find out they have a genetic makeup which is a risk factor for conditions which may never develop, or diseases which the individuals concerned may never have heard of (Armstrong et al., 2003; Gollust et al., 2003; Heshka et al., 2008; Hogarth et al., 2008; Ransohoff & Khoury, 2010). While these advances have been advantageous in some respects (Wise et al., 2019), they have also exacerbated anxiety about risks that would never have previously been anticipated (Oliveri et al., 2016). As Lupton (2013) has pointed out, the widespread focus on risk rather than making people feel safer may increase their anxiety through highlighting it as something to which they need to direct their attention. It is well documented, for example, that cancer screening programmes generate anxiety in some individuals, simply by inviting them in to be checked even leaving aside the inexactitude of some of the measures used (Byrne et al., 2008; Consedine et al., 2004; Yeh et al., 2015).

A number of participants with arthritis or residual discomfort from sports injuries worried about their conditioning worsening to the point where it would prevent them doing their usual activities. Their fears were not about the present but of chronic illness and disability lurking in

the body and which could flare up and hit them with permanent 'biographical disruption' (Bury, 1982; Morden et al., 2017; Williams, 2000). They had turned to supplements to try to defer the anticipated deterioration in their health as long as they could. Murray explained what it meant to him to have found supplements that helped:

everything...my mobility, independence, not relying on anyone for help ... the procosamine – the glucosamine sulphate – helps joint health and build ...cartilage ... [I have] full mobility ... and without it my hip wouldn't have done, wouldn't have lasted.
(Murray)

Others had no problems as yet but worried about the unknown future if they did not take preventive measures now, based on the history of older family members. Johnny's experience of his mother's poor health at a relatively young age and her distress at being dependent and in pain had made him fear what could be ahead for himself. He said it had been a strong incentive for him to resolve to stop smoking, and generally lead a healthier life in the expectation that he could avoid having his quality of life eroded in the same way:

Seeing what my mother is like, I don't want to actually be like that myself. You know, she feels like she is a burden on people. ... Mum, she's overweight so she finds it harder to exercise and then with her heart problem the way it was, she couldn't actually get up and walk anywhere. ... She has to have a knee replacement but she doesn't get the knee replacement until she loses some weight (Johnny)

He had not smoked for many years now, exercised more, and was taking "all the vitamins and minerals and things" as well as using different alternative therapies to do his best to stay fit and healthy.

A further category of unknown risk raised by participants was the concept of 'subtractives' (Rozin et al., 2009), that is, concern about nutrients that were missing from their ordinary foods. So rather than worrying about chemicals or additives in food that could harm them, their concerns related to what was assumed to be in food but was not:

... the amino acids which are not in our proteins anymore because they put on farms – super phosphates that kills ... microbes, there's no worms on the farms; the minerals can't get into the plants; there's no vitamins in the plants. They sit up; the grass looks green but there is no nutrition in it. Therefore the animals are eating that and everything is on the back foot. (Clara)

The food might look fresh and wholesome, but Clara and several other participants spoke of their concerns about the possibility that the food they consumed was deficient in nutrients and that their health was therefore being gradually undermined. Murray, similarly, raised a point about the properties of plants that had been manipulated for commercial reasons, further reducing their nutrient value. He said he believed that something was wrong with modern cultivation methods though was uncertain of the exact details:

...we are not getting the minerals and vitamins from our foods that we used to, because wheat is stripped of twenty two and then replaced with six or whatever (Murray)

Pat, who had worked in a bakery also talked about the reduction in the quality and nutrient value of bread during his time there because of new methods that were brought in to speed up the process and avoid the long hours needed for 'natural' rising of the dough. This had resulted in *"this crap bread that you get in the supermarkets. It's not good for us"*.

The concern about harm from what has been *taken out* of food is less often voiced than that relating to what has been added. Rozin et al (2009) found that only a tiny minority of the more than 1000 comments they collected from the public about naturalness in foods mentioned what he termed 'subtractives', while almost two thirds mentioned additives. The participants in my (much smaller) study, however, highlighted the issue of foods that lacked nutrients a number of times, suggesting perhaps that there may have been a growing concern about what is lacking in food in the decade that has passed since the Rozin study was published. What has not changed is that, in common with the findings by Rozin et al (2009), turning to supplements, a positive form of 'additive' was a strategy to overcome the unknown shortfall and allay their concerns.

Almost all participants were also worried about the unknown risk of stress on their health. Although stress can have positive as well as negative connotations (Baum, 1990; Bernstein, 1996; Lazarus, 1993; Selye, 1973; Skjong, 2005), the participants tended to see it only in a negative light. The issue of stress was particularly salient at the time the participants were interviewed, as it was only a few years after a series of major earthquakes in Christchurch, when many of them had lost their homes or had them seriously damaged. Some were still fighting to get insurance payouts for their homes and/or business and were uncertain about their future housing and financial position. Even those who had not been materially affected were still suffering from a degree of anxiety and uncertainty that the long running series of earthquakes had provoked. While their comments indicated that they attributed the *cause* of stress to external events and circumstances, they interpreted the *effect* of stress as being an eroding

force from within and one which could have unknown, but potentially far-reaching effects on their health.

...one of the biggest influences on health is stress because I feel like it has a huge impact on your ability to stay healthy and happy in the world. (Bryony)

The natural characteristics of supplements were viewed as a positive buffer against stress and a safeguard against the long-term, quiet undermining of their health without resorting to antidepressants or sleeping tablets, and, as Vonnie remarked, a far better option than “*using more crutchesalcohol, also drugs, smoking*”.

The most acute expression of unknown risk, however, came from one participant whose pessimistic view of the future had been a trigger for a radical revision of her family’s lifestyle to include natural products, supplements and self-sufficiency strategies:

I was into the essential oils - essential oils and natural stress [relief] coming here after the earthquakes ... I think if anything major happens in the world we are going to have to go back to natural stuff. That was one of the reasons we had started back then, us believing in a doomed world – you know, if there was fighting in certain areas then you are not going to be able to access it. So then what are you going to do? What are you going to be able to use? So we have started – we are not great at it – but we have started growing vegetables, trying to do a few more things. (Wendy)

Wendy here draws on the link between the ‘unknown unknowns’ that are part of the risk assemblage and links them with the assemblage of the natural to frame her view of the future and the strategy that she and her family were evolving to cope with it. She did not raise climate change but her comments about a ‘doomed world’ do appear to be connected to the same discourses of the perilous future regarding global planetary health (Hansen et al., 2013; Kendall et al., 2018; Sundström et al., 2014). Her ideas were unusual among the participants at the time, but in the few years since we spoke, they have become part of general discourse.

In contrast, the one risk that appeared to be almost entirely disregarded by all by participants was any notion that they might be at risk from taking self-prescribed supplements and herbal medicines. They saw them as an avenue whereby they could “*do something safely for myself*” (Charles). Their lack of concern about taking products they chose for themselves was in sharp contrast to their concerns about prescribed medicines. It was also in direct contrast to the volume of medical literature which frames supplements as risky, and consumers as vulnerable

and in need of protecting from taking products without professional supervision (Geyer et al., 2008; Lewis, 2019; Stickel et al., 2009; Tsai et al., 2012). Many participants indicated that they were well aware of this disapproval by the medical profession but did not consider it relevant to their decisions about supplements. Most would, however, usually avoid discussing their supplement use with their doctor to avoid any conflict. The juxtaposition of these opposite points of view is taken up again in Chapter 6.

Those who sold supplements, on the other hand, appeared to be keenly aware of the discourse of risk from self-prescribed supplements that emanated from health professionals. Although I was not the one to raise the issue in the interview, almost all of them appeared to be positioning themselves in relation to the criticism that they attract for selling such products to members of the general public. They all outlined in detail the steps they took to ensure the safety of their products and advice. They spoke about the attention they paid to ensure that they stocked good quality products that were accurately labelled and complied with regulations. They reported that they questioned their customers carefully about any prescribed medicines they took so that they could check for potentially dangerous interactions. They drew attention to the importance of being confident themselves in their products and maintaining their reputation for providing professional and reliable advice which did not put their customers 'at risk'. As Kerry noted,

All the brands that we have got down there [in the shop] are good brands. I would feel really safe recommending any of them. (Kerry)

One of them also pointed out that the product manufacturers, too, had their reputation at stake and would lose a great deal if their merchandise was found to be contaminated or of poor quality:

And all the providers through the [name of health store chain] are randomly audited and regularly tested through the Ministry of Health as well and they know... if there was anything in those products – it would just wreck their multi-million dollar business overnight. They are extremely careful to be clean. (Bernie)

At the time of the interviews there had been a flurry of news in the popular media based on a recent study of fish oils that were on sale locally (Albert et al., 2015). The reports described fish oil as being more like 'snake oil', noting that it was often oxidised, in which state it could be harmful to those taking it. One of the pharmacists commented on this controversy:

...from what I saw and what I heard was that it was a storm in a teacup; it was a misinformed article and it wasn't actually relevant to what we use in New Zealand. Primarily it came back to storage conditions. You will get an article that will be quite inflammatory – everyone that is for it [for example, fish oil] says 'pile of rubbish' and everyone against it and doesn't believe it in the first place says 'Oh, I thought so, I had my suspicions, I knew all along'. (Jo)

Subsequent stories about fish oil across various popular websites over the next couple of years cycled back and forth through positive and then negative framings and back again. Fish oil was presented in some items as preventing diabetes, helping heart health and being beneficial for pregnant women. Other headlines pronounced that fish oil products often lacked the ingredients they claimed, were ineffective, a waste of money, or potentially harmful if they had been stored too long. It is well documented that popular and social media tend to provide this kind of contradictory advice on health issues to readers with eye-catching headlines (Ramachandran et al., 2018). The end result of this kind of reporting, as Jo noted, is that people tend to dismiss those that do not coincide with their own views and interpret those they agree with as an endorsement for what they practice.¹⁰

The participants' approach to risk was different again from the way they talked about either naturalness or holistic health. Whereas naturalness was shown to be much richer and more nuanced than the straightforward meaning many participants assumed, and holism was revealed to be evolving towards meaning almost anything, it was the detailed discussions and explanations that participants put forward about the risks that concerned them that stood out. The shifting nature of risk is well recognised in modern everyday life because of the focus of attention that it receives from the media, the orthodox health system, and many other fields. It was interesting that none of the participants contested the idea that they were 'at risk' or found risks to be over-stated. On the contrary, most seemed to accept that there were known and unknown risks everywhere that could affect them and it was up to them to take action to counteract them. However, the risks they singled out from the amorphous assemblage were individualised, reflecting adverse health events experienced or witnessed in their own lives, but also overlaid with interpretations in the light of prominent public discourses that had resonated with them. Participants, in effect deconstructed risk themselves. Their comments showed their recognition that risk was heterogeneous, always evolving and always open to the appearance of

¹⁰ The paper that sparked the controversy was retracted in September 2019, after acknowledging that it contained 'fundamental calculation errors' (Rucklidge et al 2019).

something new and 'other' (Derrida 1997). They also implicitly recognised the rhizomatic nature of risk as something which was connected to a wide variety of actants in the assemblage around supplements, including foods, medicines, the environment, their genetic makeup and familial disposition to disease and to ideas about a 'doomed world'.

The focus on risk in this section may give a somewhat misleading impression of the participants as a group of over-anxious people, the kind that are dismissively referred to as the 'worried well' (Lapsley, 2006; Lentjes, 2019) obsessed with their health status, and constantly on the watch for emerging risks that could strike them from within or without. However, their concerns are not out of line with general popular and academic discourses. An endless stream of studies and reports continues to be published that investigates many of the very issues that the participants raised and these are taken seriously by the scientific community and a considerable proportion of society (Bergé et al., 2013; Chang et al., 2014; Kendall et al., 2018; Meeker, 2012; Mink et al., 2011; Sundström et al., 2014; Weber et al., 2018). Moreover, the shifting boundaries in the classification of disease through the construct of pre-disease states, create categories of people who are in an ambiguous position between normal health and pathology (Swallow, 2019). Being in this uncertain state leads to even greater feelings of risk and uncertainty and the need to respond to it in some way. Ironically, it seems that the climate of risk promulgated, at least in part, by orthodox medicine, may assist the flourishing of the supplement industry as people such as the participants turn to products that they believe will offer protection. So rather than being disproportionately obsessed with risk, it may be that it is their independent decision making that bypasses the need for 'expert' advice that underlies a good deal of the criticism that supplement users attract from health professionals.

Indeed, once the participants recognised a risk, they did not dwell on it obsessively, but used their concerns in a productive way. They made decisions and took action to address those risks they believed were important in the light of their own experiences and context. Supplements offered a strategy to defuse their anxiety, and get on with living their lives, at least for the time being. This was the impression I got from talking to them; that having decided that they could *do* something about their concerns, they could then set their mind at rest. They did, however, appear to view risk as evolving and changing all the time rather than something that they had dealt with permanently and were alert to risks that might develop in the future.

Conclusion

This chapter has endeavoured to examine and unsettle the concepts that are deeply embedded behind the everyday discourse about supplements and herbal medicines. Naturalness, holistic health and keeping safe from risk have been discussed at some length to show the wide variety of understandings that the participants expressed in their comments. The assemblage of ideas and practices generated from the discussion about these three concepts showed that participants expressed views ranging from repeating uncontested assumptions to putting forward thought-provoking insights about competing meanings that they observed in their own or others' practices.

Deconstructing these three discourses in the light of the data from the participants, has revealed a number of new insights about that go beyond the previous understandings of how naturalness, holistic health and risk are related to supplement use. Firstly, the discussion has shown how individualised and fluid the concepts are; that every participant saw them in a slightly different light. Rather than simply being gradations of the one idea, the viewpoints put forward stretched and contested general assumptions in widely different ways, depending on the individual participant's background experiences, their own interpretations of the discourses of the present and their concerns about the future. The variety of perspectives provided by the participants demonstrates how inadequate it is to treat supplement use as a single phenomenon, where both products and their users are "lumped together, indistinguishable from each other" (Lewis, 2019: 840). Secondly, this chapter has highlighted the way that the concepts of naturalness, holistic health, and risk are never static, but always open to something new and different in relation to supplement practices. They are mobilised by users and sellers in an ever-changing scene of ideas, interpretations, therapies and products that draw from the past and are constantly evolving into the future. Thirdly, although the discourses in question have been deconstructed separately here for the purposes of the analysis, all three concepts are deeply interconnected; their entanglement forms a network of random and rich connections that adds to the complexity of the assemblage of actants around supplements and their use. Finally, it is important to recognise that even though the surface assumptions around these common discourses can easily be deconstructed to show that each one is diffuse and contested, yet the ideas of naturalness, holistic health, and risk retain their salience as descriptors around which supplement users and sellers can frame their practices as meaningful to them and others. Within this vast assemblage, it is the material products of the supplements themselves which provide the connecting point in the network and without which there would be no discussion.

The next chapter now turns the spotlight directly on these products and examines the part they play in the assemblage.

Chapter 5: Supplements as lively matter: the importance of material things

Introduction

The previous chapter looked at characteristics that people attribute to supplements. This chapter takes a different angle, examining the capacity of these material products – supplements and herbal medicines – to have their own power and presence that create effects in the lives of contemporary individuals. In my interviews with the participants my attention was drawn to the importance that they seemed to place on the physical presence of their supplements, which many had specially assembled for me to view. This happened in all the settings where I conducted interviews, whether private homes, health stores and pharmacies, or in other places where participants brought them along to show me. These instances were enacted so many times during the interviews that they compelled me to take more notice of the physical matter of the supplements and their containers as things of importance in their own right, not merely inert objects that were a means to an end in the individuals' health practices.

This chapter uses materiality thinking from writers such as Coole and Frost (2010), Maclure (2015), and especially Bennett (2010) to examine the agency of 'things' to change events and create effects in people's lives. Thinking about things in this way contests the "notion of nature as merely the backdrop for the humanist adventure of culture, or of matter as 'dumb' and passive until awakened to meaning by human interest and interpretation" (Maclure, 2015: 96). Materiality thinking views the dualistic idea that considers humans as having agency and matter as inert to be anthropocentric and artificial (Bennett, 2010; Law, 1999: 3). It brings back non-human things into contention, not just as being important in the assemblage of actants, but having their own agency and energy to:

Act as quasi agents or forces with trajectories, propensities, and tendencies of their own....What if they could be considered not simply as a resource, commodity or instrumentality but as an 'actant', something, whether human or non-human, which has efficacy, can *do* things, has sufficient coherence to make a difference, produce effects, alter the course of events (Bennett, 2010: viii)

The renewed interest in materiality in recent decades has been driven, at least in part, by the development of artificial intelligence, advanced biological techniques, and virtual communication technologies which have forced humans to recognise that "objects do not exist

in ontological isolation” (Fraser et al., 2005: 5) but have the power, whether welcome or unwelcome, to create an impact on humans.

The problem with writing about ‘things’ is that any argument put forward is always open to the criticism that things are interpreted by a person, “a self-conscious, language wielding human” (Bennett, 2010: 120). Attributing agency to the non-human, therefore, is elusive and difficult. The traditional tools provided by language seem to be inadequate for the task of understanding non-human agency. Bennett herself, has written about the difficulties she encountered in trying to write about why things matter, describing it as “both necessary and impossible” because language always assigns “activity to people and passivity to things” (Bennett, 2010: 119). One approach, according to Coole and Frost (2010), is to engage in a detailed analysis of the material objects which are part of the daily environment.

This chapter, therefore, treats the containers of supplements and herbal medicines that participants showed me as vital matter, enmeshed with human discourse and activity, but also having their own “emergent, generative powers and agentic capacities” (Coole & Frost, 2010: 9). Supplements, moreover, are a special category of actant that differ from most other types of non-human matter because they are designed to be ingested into the human body. Bennett considers edible matter to be a special category of non- human actant because it enters into what we become as it is metabolised; “the outside and the inside mingle and recombine... it reveals the swarm of activity subsisting below and within formed bodies and recalcitrant things, a vitality obscured by our conceptual habit of dividing the world into inorganic matter and organic life“(2010: 50-51). Like foodstuffs, the taking of supplements results in a process where “human and nonhuman bodies recorporealise in response to each other; both exercise formative power and both offer themselves as matter to be acted on” (Bennett: 2010: 49).

The power of edible substances to do good or ill is not difficult to understand; what to ingest and what not to, has been an enduring motif throughout history and continues to be scrutinised intensely from all points of view today. In religion, folk tales and fairy stories throughout the ages eating or drinking some kind of substance often catalyses forward action (Pinsent, 2002; Reddan, 2016); these non-human things may bring magical powers to the human protagonists, promote healing, give access to new visions of the world and allow personal growth or alternatively they can be a force for evil, corruption, and death. Outside the realm of myth and fairy tale, ingested substances have been the subject of health advice from ancient times (Totelin, 2015) and throughout recorded history right up to the present day. Contemporary scientific literature abounds with a wide range of conflicting advice about the things that should

or should not be eaten or drunk for good health (Archer, 2015; Lifschitz & Lifschitz, 2014). There is a daily “cacophony of voices” (Mayes 2015: 6) across all media, ranging from medical journals citing ‘alarm’ about rising rates of child obesity or diabetes (Cefalu et al., 2014; Wang et al., 2017) to popular websites issuing dramatic warnings about the “16 cancer causing foods you should avoid completely” (Bayard, 2019) or the reassuring “top 10 supplements for preventing and reversing Alzheimers”(Rona, 2018). The intense interest shown by such a diverse range of sources suggests that edible things have a particularly potent influence on human lives that goes beyond their analysable nutritional or medicinal components; that these non-human ‘things’ have their own power and energy to generate effects in people’s lives.

To expand and further develop the concept of the assemblage of actants in which the participants and their supplement ‘things’ were enmeshed I have again turned to Deleuze and Guattari’s (1987) metaphor of the rhizomatic assemblage with its tangled network of nodes, connections and random lines of flight. In the assemblage material things and discourses about them are entangled and interconnected; the containers with their capsules, tablets and liquids, promotion and marketing activities and discourses, retail outlets, and regulatory regimes, together with an individual’s biological make up, their past and present experiences, their interpersonal contacts, their cultural background, spiritual beliefs, personality traits, health practices, the communication and information sources they use, their shopping habits and income. It is necessary and important to tease out some of the threads of the assemblage to gain some partial insights into how they create effects. The challenge is, however, to do so in a way that does not make them appear linear, isolated, at risk of being reduced to merely a list of this component or that, but retains the idea of their inter-relationship in a dynamic and evolving network of connections.

The first half of this chapter focuses on the ‘things’ that made up the supplement displays presented by the participants: the containers of products and the other material things that the participants brought to my attention, as well as the physical surroundings where they were arranged. I move on to analyse what the participants told me about the physical and psychological effects on their wellbeing that they ascribed to these ‘things.’ I revisit the concept of the life force in all things, this time to reflect on what was said and implied about things as enablers to spiritual or transcendent experiences and how this linked with participants’ remarks about their wellbeing, and their purpose in life.

I draw briefly on Bourdieu's (1990) concept of the habitus to look separately and in combination at the cultural histories and social discourses about material things that participants reported they had used in self-care remedies. In general terms, the habitus has been described as:

...a system of schemes of perception and discriminations embodied as disposition reflecting the entire history of the [cultural] group and acquired through the formative experiences of childhood. The structural code of the culture is inscribed as the habitus and generates the production of social practice (Nash, 1999: 177).

For individuals, the notion of the habitus refers to the embedded cultural capital that underlies beliefs and assumption about how to behave (Bourdieu, 1990; King, 2000). The habitus has been seen as deterministic, limiting and constraining, and a means of social control (Garnham & Williams, 1980), that is, entirely contrary to the concept of the tangled rhizomatic assemblage which is always unpredictable, changing and becoming. The two are, however, not necessarily opposed; according to McNay (1999), the habitus should not be read in this way, but as a generative structure which "establishes an active and creative relation" between an individual and the world, giving rise to a wide variety of behaviour patterns, though remaining only "relatively unpredictable" (McNay 1999: 100-101). Dovey (2011) directly links Bourdieu and Deleuze and Guattari's thinking, showing how the two, although they have differences, are conceptually connected:

Both habitus and assemblage are immanent to everyday life rather than transcendent abstractions; the rules of the habitus can be read as codes of the assemblage. the major contrast is that Bourdieu stresses the inertia embedded in the habitus, whereas Deleuze and Guattari stress flow, change and potential (Dovey 2011: 350-51).

While the supplements remain the 'things' of key focus, in the second half of the chapter I look at a range of other actants that were prominent in the evolving assemblage and were connected with the participants and their supplement practices. These include the cell phones and computers that participants used to find what they wanted to know about products and where to get them, or to search for information about the kind of treatments that might be useful for particular health needs they had. They also include the online systems that track what individuals are looking for and amass sets of data that allow companies to target them with promotions for products they are likely to find relevant. I note the way the participants were engaged in different ways with all these actants, but at the same time were actants in the

assemblage themselves, caught up in a dynamic process of evolution that linked the human and non-human.

The power of the material product

By far the majority of my interviews for the study took place in the participants' homes and nearly all of them invited me to view a display of their supplements. Often the person I was interviewing had arranged their bottles and jars on a table or other surface in a relatively public space of their home apparently specially for our meeting (see Figure 1 below). These were often accompanied by offers of hospitality. Others showed me in to more private areas of their kitchen or bedroom to point out their supplements in their usual place in a pantry or on a shelf. A few of the participants who had chosen to meet me in my office or a café also brought their products along to show me. As if following a script known to them all (although none of them knew one another) they pointed to them or picked them up one by one, telling me where they bought each one, which brand they favoured and why.



Figure 1: Supplement products arranged for showing. Author's photo simulation.

A similar phenomenon on a parallel scale occurred in most of the health stores and pharmacies I visited. While these were shop displays for the public rather than a private home, the participants who showed me round demonstrated that they were just as personally invested in their products as the people I had visited at home. The person I was interviewing would invite me on a viewing tour of their 'natural health' section. They walked me through it, explaining why they stocked the particular ranges, the brands they preferred and why, and the emphasis they placed on the quality of the various products they sold. There was the same focus on the supplements' materiality, the packages of 'things'. This was in spite of the information I had sent out to all participants explaining that I was interested in how and why people came to be regular supplement users or sellers, and not in the details of what they took or what they sold. Initially I considered these displays to be a distraction I needed to get past so I could ask the questions I had formulated, but as it happened again and again, I realised I was in danger of overlooking something vitally important about the power and presence of these material 'things' in the participants' lives; that they represented people's "hopes, imaginings and desires... an element in identity construction, moralities, routines, relationships, care, healing and home making" (Hodgetts et al., 2011: 353).

An interesting aspect of the displays was that the supplements and their containers appeared to be one and the same thing. In the entire course of the study, not one of the participants ever opened up a container to show me the contents and no one commented on the respective formats (tablets versus capsules or liquids), the type of coating, or any other characteristic. The physical appearance or the texture of the 'things' that were ingested appeared to be a matter in which no one was interested. Later, when reflecting on this, I found that the same phenomenon held true for the marketing and promotional literature that I collected during the study; there were no images of the tablets, capsules or liquids, either on their own, or being taken by people. The container and its contents appeared to be synonymous – a total package, but one that was loaded with meaning beyond its mundane appearance. The package and the understanding about its contents seemed to symbolise meaningful experiences and events in the individual participant's life that had come together in these material things and which formed an important part of their story that they wanted me to hear. The communicative and symbolic power of packaging is well recognised:

Packaging is tangible in nature, a three dimensional marketing communication vehicle that is integrally tied to the product offering. The package resides in the home [or on

the shelf] potentially becoming part of the consumer's life; a phenomenon that represents a type of lived experience (Underwood, 2003: 62).

Compelling product packaging, however, seemed to be only a partial and largely unsatisfactory explanation for what I had witnessed in my visits to the participants. Their displays of products also brought to mind the incense, flowers, fruits and other everyday objects I had seen displayed on altars in Hindu or Buddhist households, or descriptions I had read of the altars to the household gods of the Romans – the Lares and Penates - where offerings such as wheat, honey, and wine were placed as part of private religious practices (Bodel, 2008). I experienced the same feeling of 'thing power' that Bennett (2010: 4) has described; the containers of supplements "issued a call ... I caught a glimpse of an energetic vitality inside each of these things, things that I generally conceived of as inert".

While these displays were one way that the 'thing power' showed itself in the study, it was not the only one. Quite a different manifestation occurred in a small group of participants, all of whom were involved in a professional capacity with selling products and providing advice or therapy to members of the public. In contrast to the majority of participants who were so clearly positively engaged with their supplements, these few took pains to distance themselves from any personal investment in the 'things'. Their comments seemed to be designed to construct themselves to me as being only peripherally engaged with the supplement side of their workplace. One referred several times to having a hands-off approach to the 'natural health' side of the business, and that the day-to-day activities were left to "*the girls*" (Lyndsay) to manage. Another, rather than giving a personal view, cited the general approach of their workplace in neutral terms:

We operate in what I would say is a traditional pharmacy way that everyone knows most things... so any member of staff has to be able to help with any area, but we do have a member of staff who primarily looks after that area [natural health products]...
(Jo)

The use of 'we' rather than 'I' which was noticeable among this group of participants, seemed to be a way of contributing to the discussion but remaining non-committal. As Morison and MacLeod (2014: 696) point out, words that are used to cover a 'silence' may serve to mask an unwillingness to talk about a potentially sensitive topic, but also give hints about concerns which are unacknowledged. The comments were carefully neutral, acting as means of being cooperative with the study, and saying something, but ensuring that their own attitude as to

what supplements might or might not do was not stated. To me, this silencing of the personal, much in contrast with the behaviour of the other participants, highlighted the tension involved in balancing a proactive health professional role with the commercial drivers of working in a retail business (Thompson & Bidwell, 2015). The viability of such a business depends on being able to sell 'things' and retain customers, but these same things may be an uncomfortable fit with the need to retain the respect of their medical and research colleagues who are generally unenthusiastic about the sale of supplements directly to the general public (Jefferies et al., 2012; Martinez et al., 2012; Slashinski et al., 2012; Ventola, 2010). Their distancing suggested, not that they were indifferent or uninterested, but that the products they sold also had a complementary 'thing' power that potentially threatened their professional identities. Nevertheless, whether participants were deeply engaged with their products like the majority, or took care to 'silence' them like the few, it was clear that the material supplements had the power to cause effects for those who engaged with them. The next section of the chapter looks at the participants' reports of the physical and psychological effects they had experienced from the supplements that they took.

Things for the body and mind

The lived body crosses both the biological and social worlds. People have a body, a physical entity, but their body is also who they are, how they interact with the world, how they feel and experience sensation, how they think, reflect and act (Fox, 2012; Sointu, 2013):

The possession of a physical body, its mediation between the world around us on one hand and our internal world of thoughts, feelings and sensations on the other, is fundamental to the human experience (Fox 2012:1)

When the body is in robust health, it tends to be taken for granted (Corbin, 2003). Only when something goes awry, such as pain or illness, is attention suddenly brought to bear on the body and what it can or cannot do (Fox, 2012; Lawton, 2003). Chronic conditions that cannot be permanently 'fixed' but must be lived with, in particular, bring attention to a body that is reluctant to cooperate with what an individual would like to do (see Fox 2012: 27-30). A number of participants (though far from all of them) were in this category; some had conditions that had been medically diagnosed such as diabetes, arthritis, or hypertension, others had more nebulous concerns like unexplained abdominal pain, sleep issues, pain from old sports injuries or recurring bouts of low mood. Some of these participants had been through medical investigations or treatment while others had not, but all of them appeared to have become aware that their

bodies were imperfect and they would need to cope with living with them as best they could. It was this realisation that seemed to have been the connection with one of the tangled threads of the assemblage surrounding the supplement 'thing'; it offered an avenue to explore in the hope that they might find a way of managing a condition they could not change. Some of them reported considerable success, outlining in our discussion how these 'things' had effected improvements for them once they made the decision to take them.

Murray, for example, had been involved in running and rowing for years when younger and was a keen tennis player. He had developed joint problems over the years and had a 'bad hip' but reported that he had found products through a network marketing company had been able to keep him fully active in spite of his initial scepticism about them:

A friend of mine was interested in alternative health and so on ... he told me. So as I say, the rest's history...I didn't believe in them [supplements] in the 90s but I've got osteoarthritis in the right hip and it was bothering me and so for the last fifteen and a half years I've been on their products and I lead a normal life. It won't cure it but I've got quality and comfort level that is sustainable and not bothersome. (Murray)

Caro had a history of leg cramps, especially at night which had become so bad that they disrupted her sleep and that of her husband as well:

I'd gone into one of those health shops and I heard the lady talking to the shop assistant about this, so I said to the lady, tell me about it. Because people say you've got to take magnesium. whether I'm doing right, I don't know but it's working for me. ... And I don't even have to tell my husband and push him out of bed anymore! So that's how bad I was. I mean, I cramp, but I can feel it and I can manage it. I'm managing it. (Caro)

The material product, as she reported, had created a positive effect, and the interconnection with what she had heard 'people say' appeared to reinforce for her that she was managing something that had previously been troublesome. She does not suggest her problem has disappeared, but only that she can now cope with it better. Some of these reports had elements of the 'transformation narratives' that occur in accounts of religious conversion (Popp-Baier, 2001), or turning one's life around after a criminal past (Liem & Richardson, 2014). In the case of the participants, it was the supplement product which appeared in the right place at the right time, and acted as a catalyst to change (Bennett 2010: 9). As with these reports from other areas of life, the central idea in participants' stories seemed to be the preservation of a core sense of self and the regaining of a sense of control and agency over the future that the 'thing power' of

the supplements had given them. While some of their narratives mentioned particular supplements which they had found helpful, the key point was less about a particular product and more focused on being enabled to overcome a barrier that was in their way and “get on with life” (Cartwright, 2007: 1692). This increased optimism and coping parallels reports in other studies of supplement users (Joos et al., 2012; Oldham et al., 2004; Sointu, 2013).

The physical problems that the participants talked about, however, were far outnumbered by the number of times they focused on stress and their need to have a physical ‘thing’ that would deal with it. Supplements seemed to be particularly valued for stress, partly because of their naturalness, as outlined in the previous chapter, but also because they were a thing that could be grasped to fill a gap where there were few alternatives. Almost every participant raised the issue of stress at some point; most often it was not related to any particular circumstance, illness, or injury, but a low-level, undefined feeling of being worn down from meeting the expectations that they had set for themselves in daily life: They spoke of stress as if it were self-explanatory, taking it for granted that I knew and understood what it was:

...when you're stressed ... when you're rushed you're eating not as good as you normally would ... you're not getting as many nutrients as your body needs but you are also not taking that time out to help it repair ... and that goes on continually ... making bad choices round food, that add to the stress and not feeling well and that's when I have look[ed] at the bottle and it says, this will help you feel more energetic ... you know, balance up everything because you're kind of thinking maybe I'm not balanced in what I'm taking in. (Tracy)

Tracy here draws on ideas of nutritional imbalance and modern life as being too busy, resulting in an unease about ‘bad choices’ that keep happening because she is rushed. However, she finds a suitable ‘thing’ to take as a way of countering the rushed and inadequately nutritious meals and setting at rest the feeling of stress she has about not taking care of herself when she knows that she should be. She verbally sketches out an easily imaginable vignette that portrays her in a shop looking at the bottle - a graspable, material thing – that she hopes will do something to help. It seems that in her mind she already attributes these ‘things’ with the “active power to affect and create effects” (Bennett 2010: 49) and that will take care of the balance in her diet.

Stress has been conceptualised in a range of different ways: as physiological (Rees, 1976; Selye, 1973); as a psychological reaction to negative experiences (Sommerfield & McCrae, 2000); or as a

mind/body interaction that contributes to conditions such as cardiovascular disease, cancer, auto-immune disease and slow wound healing (Chida et al., 2008; Cohen et al., 2007; Reiche et al., 2004; Thaker et al., 2007). A feature of stress is the “strange circular way [it] seems to stand on its own as a plausible, complete, self-contained explanation” (Monroe, 2008: 47) in both scientific and popular literature:

Everybody knows what stress is and nobody knows what it is... although it has become part of our daily vocabulary. Is it effort, fatigue, pain, fear, the need for concentration, the humiliation of censure, loss of blood, or even an unexpected success that requires complete reformulation of one's life? ... Every one of these conditions can produce stress, and yet none of them can be singled out as being 'it' (Selye 1973: 692).

The indeterminate and subjective nature of stress makes it resistant to being 'fixed' particularly when the conditions that produced the stress cannot be changed. However, it seemed that the 'thing power' of supplements is something that can be mobilised to fill this gap. Kerry, who managed a 'natural health' section in a pharmacy, reported that many of her customers found supplements to be an appealing method for addressing concerns about the constant effect of stress on their health:

It doesn't matter whether you think it's stressful and I don't think it's stressful, it's how you perceive it and at what level you cope with it. It's quite a big thing and it does open you up for multivitamins, sleeping, something to help with that... (Kerry)

Kerry's remark here draws attention to the individuality of stress and that it is not up to her to judge what is stressful that matters, but whether the person she is assisting finds supplements to be a useful way of dealing with what is bothering them. Parents of young children in particular often featured in the discussions about stress. The participants who worked in health stores and pharmacies reported that they were often asked for advice by busy parents who appeared to be stressed by the dual demands of being under pressure at their workplaces and not wishing to take time off, but also caring for children who had to be kept away from school or day care when they were sick with coughs and colds especially during winter. Interestingly, although it was the parents who appeared stressed, the supplement products they bought were for their children; 'immunity boosters' to help prevent illness, (homeopathic) 'sleep drops' for babies to try to help the household get some rest, and herbal products for soothing children's coughs and colds. Neither the parents nor the retailers seemed convinced that the products were particularly effective; indeed, several participants noted that for coughs at least, the

traditional lemon and honey drinks were likely to be just as good. However, the ‘thing power’ of the bought product appeared to be more sought after than the ‘thing’ that could be made at home. It appeared that by searching out and finding a product, parents could feel they had done everything possible to keep their child well. For their part, the pharmacists and health store staff also had a concrete product – a material thing – to offer, and one that could be used immediately.

You [the parents] feel better because you have done something. You feel better and that child feeds off that and feels better. I think there is an element of that ...so much of what we [the staff] are dealing with here is reassurance particularly for parents. (Jo)

Providing simple advice, even if the home remedy was potentially as useful as the commercial product, would mean that the people seeking help would be sent away empty handed (without a ‘thing’) and, moreover, add to their stress by having the additional burden of going elsewhere to buy the lemons and honey if they were not already in stock and then making them up when they arrived home. Participants who sold these types of products noted that they provided only those which they were confident would not do any harm, and that the main benefit was likely to be reduced anxiety and eased tension for individuals or households.

The effect of the ‘thing’ they bought could not necessarily be explained in material terms but seemed to ‘work’ all the same, even though the product filled a different role for the parent and child respectively. That is not to discount the possibility that the properties of particular substances remain to be discovered, given the fact that many are poorly researched and that new evidence emerges from time to time about the properties of even the most common of vitamins and minerals (Aghajanian et al., 2015; Carr & McCall, 2017; Lapillonne, 2010; Nowson et al., 2012). As Marchant (2016: 298) points out, “the medicine we end up with depends on the trials that are carried out”, so that if no trials have been done on a substance, then it will *ipso facto* be considered ineffective.

When the mechanism of effect cannot be explained, the placebo response is often invoked. At one time thinking about placebos implied that they were a “treatment for neurotic patients when the clinician has nothing better to offer” (McQueen et al., 2013: 162). Current thinking, however, has moved beyond this dismissive attitude, with more nuanced concepts being put forward. One of them, expectancy theory (McQueen et al., 2013; Schwarz et al., 2016), has been proposed as a way of explaining why a certain proportion of people in the placebo arm of

drug trials will improve in spite of not receiving any active components. However, as several participants pointed out, this does not explain the effect in babies or animals:

We had a dog where we used homeopathics and their psoriasis disappeared. The dog didn't believe it. We had a baby who had some issues and we used homeopathics and the baby improved; the baby didn't believe it. (Jordan)

Recent investigations of the placebo effect have reported that it may be the result of natural opioids that are released from the brain, indicating that people are effectively self-medicating (Wager et al., 2007: 11060). But even these studies have concluded that the full picture is not yet understood and that the placebo effect is likely to be a diverse group of phenomena rather than having a single explanation (Marchant, 2016; Wager & Atlas, 2015).

A number of participants commented on the placebo concept as a possibility for the effects they reported experiencing from their supplements, but went on to remark that, even if that were the case, they considered it to be unimportant. Tessa, for example, was well aware that the homeopathic remedy she used was unsupported by 'evidence', but found it irrelevant, saying that "*I swear rescue remedy works for me*". As one participant remarked,

If people think it works, then it does work for them. If it makes them sleep better and they feel better then that's fantastic. Isn't that what we want? (Kerry)

It could also be argued that reassurance and the handing over of a 'thing' from a pharmacy or health store borrows from the function of the paper prescription for medicines that is handed to the patient by the doctor at the end of a medical consultation and then dispensed by a pharmacist. The paper prescription has been described by Cooper (2011) as a 'boundary object', that is, it has equal salience across the worlds of the prescriber, the patient and the pharmacist. It symbolises the professional authority of the doctor, while also serving to instruct the pharmacist what to dispense and reassure the patient their concerns have been taken seriously and the doctor has 'done something'. Boundary objects act as a 'common coin' that works within the "constraints of the parties employing them but are robust enough to maintain a common identity across all of them" (Star & Griesemer, 1989: 393). In the case of supplements, handing over of 'things' to be taken as capsules, tablets or liquid in a pharmacy or health store, even though there is no doctor or paper prescription involved, may be seen as acting in a similar way, bridging the culturally defined boundary between the spheres of orthodox and alternative health practice (Derkatch, 2008; Fox, 2011: 70; Owens, 2015). The supplement products may be invested with the same expectations that are associated with a

prescribed medicine, particularly if the individual buys their supplies from the same pharmacy where they have their medicines dispensed. Moreover, the people buying supplements in pharmacies may already know the pharmacist who gives them advice about both prescribed and over-the-counter products for their health needs and therefore view them as trustworthy based on previous experience.

A number of participants acknowledged that the reassurance of 'doing something' was at least partly responsible for a sense of improvement. A few of them talked about a special person or business that they trusted - a pharmacist, natural therapist, or health store manager - from whom they took advice that they had always found helpful. However, most others, in contrast, simply shopped around for products they had read or heard about, whether in a walk-in store or online, and were satisfied with being able to have independent and immediate access to the 'thing' without the mediation of any advisor or 'gatekeeper' to recommend it or provide guidance and reassurance. With or without advice, however, it required more than just reassurance alone; a material product appeared to be indispensable for participants to feel that they were 'doing something'. As one participant commented, if simple reassurance that one was 'doing something' worked, then why would supplements work for some people when pharmaceuticals prescribed by a doctor had failed to?

... if the placebo thing was going to have an effect it would have an effect with the doctor and the medical agents, because that's their [my customers'] strong belief. They didn't come to me first. They gave up, walked in the door and said, "what have you got here?"
(Bernie)

Here Bernie constructs himself as being a place of last resort for those who have 'given up' on formal medical intervention. However, rather than suggesting that he too can provide such reassurance, he went on to talk in detail about the specific 'things' he was able to offer that others did not, including particular products, special tests that were sent for analysis and referrals to a medical herbalist who was more qualified than he, and able to prescribe things he could not.

None of the participants appeared to be concerned about finding a definitive explanation for how or why their supplements created the effects they reported. They seemed to be open to supplements being more than simply for physical and mental wellbeing but also having a calming spiritual effect. Being spiritually at ease is acknowledged to be an important part of being truly healthy (Egan, 2010; Goddard, 1995; Holmes, 2010). Spirituality has been described as "the

primordial thing'...the engine that propels the search for connectedness, meaning, purpose and contribution. ...it speaks to what it means to be human" (Benson & Roehlkepartain, 2008). The following section looks at the various ways the participants linked this 'primordial thing' with their material supplement products.

Things for the spirit

Participants commented both directly and by implication that a spiritual aspect was linked to their supplement taking. Cliff, for example, who sent away for the etherium gold product mentioned in the previous chapter as being linked to the Pharoahs, found that taking it was 'a very spiritual thing.' More numerous, however, were those participants who did not overtly speak of spirituality as such but indicated they were searching for something beyond physical or mental health; a longing for a sense of purpose, an existential need to come to terms with their own imperfect condition, to find some 'thing' that would fill an empty space in their lives even though they lived with every material comfort:

We think we should be perfect; we think our life should be perfect. Because, look, we've got everything at our disposal. And then we get really shocked when life isn't quite like that. We have money to spend, we have all this stuff going for us, and yet we're still not happy. ... Inner peace, inner calm ... I think people are searching for that and they're not sure how to embrace it without – maybe going to church. You know, how do I live a spiritual life that isn't based on whether I'm an Anglican or a Methodist, or becoming a Buddhist nun? (Tessa)

Ingested substances have been interwoven with spiritual practices since ancient times (Berlant, 2005; Sayin, 2014); traditions of fasting from foods, offering or sacrificing foods to a higher being, religious rituals to be observed before eating, prohibited foods, and symbolic foods that represent deeper spiritual realities are found in most belief systems (Dietler, 2011). Depriving the physical body by abstaining from foods in order to reach a purer state of spiritual enlightenment is found in a number of religions (Lambert, 2003); ingesting herbal substances accompanied by prayers or incantations are used in others, and sometimes the two approaches are combined (Jones & Olsan, 2015). The idea that greater spiritual insight is achieved by depriving the body of comfort tends to construct the body and soul as opposing forces; the body as a source of sin and a barrier to salvation of the soul (Glucklich, 2001). Contemporary spirituality, in contrast, tends to view the perfect body as a spiritual force in itself, harmonious and serene, rather than being conflicted between the desires of the body and the aspirations of

the spirit (Giordan, 2009). Therefore ingesting things with the aim of perfecting the body becomes an end in itself. In essence, however, the two approaches share the same idea of being on a quest towards perfection, and to overcome the limitations of the body bound by physical illness or psychological dysfunction. Non-human things, often including the taking of substances, have always been implicated in this quest.

The idea that inanimate things have spiritual force is found in many indigenous belief systems (Donald, 2012; James, 2015). For Māori too, whakapapa (genealogy) links animate and inanimate, known and unknown phenomena in the terrestrial and spiritual worlds (Roberts et al., 1995; Taonui, 2014). Entities are not separated into human and non-human but everything in the universe is considered to be connected, with each individual being connected to things in the natural environment:

Belief in God is one reflection of wairua [spirituality] but it is also evident in relationships with the environment. Without a spiritual awareness and a mauri (spirit or vitality, sometimes called the life force) an individual cannot be healthy and is more prone to illness or misfortune. Land, lakes, mountains, reefs, have a spiritual significance ... [access to] the natural environment is considered integral to identity and fundamental to a sense of wellbeing (Durie, 1994: 71).

The non-human environmental features of their birth place are part of identity for all Māori people. Spirituality or wairua is one of the four cornerstones of health in the Māori world view along with physical, mental, and family health (Durie, 1994). All of these are equally important for a healthy individual, family and society as a whole. The substances used in traditional Māori medicine (rongoā) are therefore always considered to have an intrinsically spiritual aspect. Several of the participants spoke about the interconnectedness of medicinal substances, spirituality, and health. Caro, for example, who was familiar with Māori rongoā, spoke about her belief that swallowing any kind of medicine in isolation from other aspects of a person's life was unlikely to 'fix' anyone's problems, whether Māori or non-Māori. She referred to the way rongoā had been used in her family, which had always been "*about the pre-prayer and your whole holistic being.*"

These ideas are connected to the concept of the life-force that unites all things (Erickson, 2007; Ricard, 2011), and which is central to one view of holism, as discussed in the previous chapter. In this view, non-human things can generate healing but cannot be expected to do so unless embedded in a wider context of spiritual awareness about the interconnectedness of all things,

both human and non-human. Lou spoke about his conception of the interconnectedness between the body and spirit that mobilised the power of things to have effects on people ingesting substances:

... if you try to divorce the spiritual side of somebody and put that in a little box and say that's not relevant because we are trying to treat the body here, to my mind that is actually duping yourself really because a person's belief will start spiritually and affects the whole way they're taking the medicine, respond to it. (Lou)

Other participants too, referred to the essential part that spirituality played in health. Tracy likened a person without spirituality to a chair or table with one leg missing so that even if the problems of the physical body were treated with things, there would always be an incompleteness and a lack of balance within that person.

The feeling of incompleteness is also prominent in religious thought, reflecting the idea of the lifelong search for God, or Nirvana, or however a particular religion conceptualises ultimate Being. As the early Christian Saint Augustine wrote, “our heart is restless, until it rests in you, O God” (Kreeft, 2016: 21). Some researchers have argued that material prosperity has created dissatisfaction if there is nothing to fill the vacuum created by the formal religious belief. The wish to experience something beyond the mundane is therefore behind the surge in popular interest in exploring forms of spirituality that derive from ancient belief systems unfamiliar to people in developed countries. These include Ayurvedic, indigenous and traditional Chinese medicines, but can also include ‘New Age’ spirituality, pantheistic religions, and metaphysical traditions (Cobb et al., 2012). The ‘things’ of these religions appear to be part of the appeal, linked to ideas of the exotic, ‘other’ that were outlined in the previous chapter. One participant drew attention to this point, noting that, in his view, a focus on the ‘things’ themselves without the wider context of spirituality was ultimately unsatisfying:

I would say some people want a pot pourri. My meaning is that they will get those traditional medicines if they are going to help a bit; they'll get natural medicines; they'll go to a meditation class; they'll do something else – the aim being some of this must help so I will go for all I can do to get help, excluding the fact that actually maybe a really consistent spiritual side might be the answer to what they need anyway. (Lou)

The attraction of these alternative healing therapies has been interpreted as part of “post-Christian” spirituality in Western countries, presenting an alternative to both Christian faith and secular rationalism, perfecting the body in order to “become better versions of [themselves]

emotionally and spiritually...” (Brownell, 1991; Cederstrom & Spicer, 2015: 12; Marzano-Parisoli, 2001; Sheldon, 2010). Although bodily perfection tends to be viewed as a recent phenomenon, the body as a spiritual project can be traced back to the early Christian era and to classical antiquity (Shilling, 2002). In the late modern age, however, what was once a nearly universal belief in the soul’s progress towards the divine ‘other’ as the purpose of life on earth has come to be replaced by a belief in “the body the starting point for accessing the spiritual dimension of experience” (Giordan, 2009: 230).

Those involved do not pursue meaning and identity from pre-given authoritative sources, located outside the self (e.g., the answers offered by science and the Christian churches), but want to rely on an internal source, located in the self’s deeper layers... the late-modern condition conjures up nagging questions that haunt the late-modern self: What is it that I really want? Is this the sort of life I want to live? What sort of person am I really? (Houtman & Aupers, 2007: 307,309).

A number of participants reflected this idea of a missing dimension in their life, but they were unable to pinpoint it to anything specific that was wrong. Though they did not refer directly to the lack of a spiritual dimension themselves, what they said implied to me that they felt a gap in their lives and were searching for something meaningful to fill it and make their lives feel complete. Turning to material things appeared to be one avenue that they were exploring; finding ‘things’ that might fill the gap and hoping that these ingested substances would address the nebulous feeling that something in their life was lacking or out of place:

... if I feel like I might be lacking in something ...It’s probably just from reading bits and pieces and thinking, oh, that makes sense. You think, well, we are full of minerals and vitamins and all sorts of things, if something’s a bit out of kilter to me it makes sense that if you are lacking in something you may well need a top up of something else. (Frances)

Frances’ comment here has echoes of the idea that Tracy put forward of being ‘out of balance’, that is, missing some kind of important element that is needed to make up the whole person. These ideas are clearly linked to holism and to have an underlying spiritual dimension but Frances here focuses on the physical body. It appears, from her comment, that she has nothing overtly wrong, but she still feels she is ‘lacking’ and a product with vitamin and mineral ‘things’ that she can ingest to ‘top up’, is a way of satisfying this feeling of incompleteness.

Another motif in participants’ comments was the attraction of ingesting ‘things’ that cleansed. The notion of ‘dirt’ within the body that needs cleansing is a profoundly spiritual concept linking

back to ancient ideas of ritual purity and defilement, with 'dirt' being an ancient symbol of ambiguity, disorder and danger (Douglas, 1966), that is, something with negative 'thing' power. Seeking cleansing in a spiritual sense is deeply ingrained in many ancient traditions. Māori tikanga (the correct way of doing things) for example designates all things as either sacred (tapu) or profane/ordinary (noa) and prescribes rituals for the correct way to behave, for example, with body waste or the handling of human tissue, that are still powerful and observed today (Cheung et al., 2007). The Jewish and Christian traditions both feature the need for purification and cleansing from sin; in Christianity the water of baptism washes away original sin, and in the Old Testament of the Bible, the Psalmist proclaims the need to be cleansed:

God in your goodness wash me clean of my guilt, purify me from my sin ...wash me until I am whiter than snow (Psalm 51:2,6).

Some of the participants' comments on cleansing clearly invoked a spiritual dimension, providing additional and complementary insights to those that raised cleansing as a protection against risk which were discussed in the previous chapter. Cleansing in this context had characteristics of a ritual undertaken for its own sake, intrinsically worthwhile, rather than in response to any kind of risk. Cleansing was a special feature of a range of products from a network marketing company that Molly used herself and also sold to others:

They [the company] talk about cleanses a lot... we are of the understanding that our body needs a break from time to time and that is why you have these cleanse days, or they talk about you have a "cleanse for life" once a day, which is just a drink and you drink that. I love the idea of a cleanse ... (Molly)

The appeal of the "cleanse for life" here, though clearly more commercialised and centred around a 'thing', echoes the themes of purity and ritual cleansing that, according to Lupton, live on in modern obsessions about hygiene, and anxiety about viruses and infections which "reveal deeper concerns about the integrity of the body in an age where potential contaminants are invisible" (Lupton 2013: 36). The fear of having others see you as 'dirty' and unable to control your bodily wastes (Lupton 2013: 187) appears to lie behind the promotion of the many products that are sold to reduce body odours, or sanitise parts of the body in contemporary society. Moreover, what is 'dirty' and therefore in need of cleaning/cleansing is socially and culturally constructed across different societies and different epochs in the same society; "what is unclean in relation to one thing may be clean in relation to another, and vice versa" (Douglas, 1966: 9). 'Dirty' as an insult, has a long history in many cultures and its use seldom relates to

being physically dirty, but is more often directed at people who stand out from the social norm by their behaviour, different appearance (Douglas, 1966), or are thought of as inferior, uncivilised or unfit to participate in society (Boullosa & Schnee, 2013; Colloredo-Mansfeld, 1998; Guimares, 2003; Paredes, 2007).

Closely related to cleansing is the idea of 'toxins', another currently popular way of expressing fear of inner dirt and contamination. Rather than ideas of physical risk, as discussed previously, the idea of inner toxins that must be purged appears to relate to spiritual rather than physical unease (Rindfleish, 2005; Russo-Netzer & Mayselless, 2017). Dozens of recipes for detoxing things - pills, or drinks to 'flush your liver' - can be found with the most casual of online searches, (Pelton, 2014). The biomedical explanation is that these ideas stem from misplaced beliefs that toxins in the intestine can enter the circulation and poison the body (Acosta & Cash, 2009; Richards et al., 2006). Kotevko and Nerlich see this as a replacement for the fear of infectious organisms, which has waned in the age of antibiotics, and substituting 'detoxification' as a means of "strengthening the body's internal armour" (2007: 22). However, this seems a limited explanation for the persistence of the phenomenon and the "current of disgust" (Kjær, 2019: 136) that is associated with the fear of bodily imperfections, and inner 'dirt'. It also misses the point of the symbolism and ritual purification that people appear to be seeking in these practices and the need for a physical 'thing' as an enabler.

The spiritual focus to detoxification becomes clear in its association with fasting, a practice long associated with expiation of sin and the search for spiritual cleansing and purity in many forms of religion (Brick, 2010; Morinis, 1985). The Jain religion in India shows its most extreme form in that people who have fasted to death are held up as the most advanced examples of holiness and spirituality (Laidlaw, 2005). It was clear that Molly's cleanses were a form of fasting, though she did not refer to them as such; she went to some lengths to emphasise that she took great care that her young son did not realise that she and her husband were going without meals. They "*always, always have a little bit of toast or something like that just so he sees it because kids are always watching you.*" This kind of food restriction with 'fast days' is advocated in some quarters as an avenue not only to better health, but to the quest for spiritual enlightenment. Nash (2006: 310) describes the fasting body as "...an expanded field of energetic confluences" that seeks to overcome the hunger for material food and replaces it with the "hunger for pure immanence" that is, the desire to achieve a sense of integrated unity with what lies beyond the physical plane.

An alternative and more exotic route to spiritual enlightenment in both ancient and modern traditions is the pilgrimage. Pilgrims in both ancient and modern traditions leave behind their normal lives for a time and travel to a place which is often far away (Barber, 1991; Gesler, 1996; Rountree, 2006). In this state of “liminality” (Gesler, 1996: 96), bracketed between their departure and return, they are open to healing and transformation, “... a journey both outward to new, strange, dangerous places, and inwards to spiritual improvement, whether through increased self-knowledge or through the braving of physical dangers” (Barber, 1991: 1).

One participant had made a pilgrimage to just such a faraway place, drawn by the idea of experiencing a mysterious substance:

I went to Peru to see a shaman. ... I booked myself onto a lodge in the middle of nowhere in the Amazon ... just did ayahuasca to see what it was all about. ... The stories I have read is that potentially a serpent will appear and will talk to you. I didn't have that. I just had this kind of strange experience where I ended up getting sick. It's more of a cleansing than anything – cleansing your body of all these toxins, evil. ...it's referred to in the Amazon as the healing vine maybe more at an emotional level than a physical level, I don't know. (Duncan)

Duncan's account had easily recognisable echoes of the hero's journey (Campbell, 1973) in myth and legend, where the protagonist sets out on a strange and potentially dangerous journey to a remote place, drawn by the idea of being able to find a 'magic' substance or the 'water of life' that will endow them with special powers. Whereas mystics may be able to take the journey inwardly without leaving home, pilgrims need a concrete object or place - an exteriorised, physical 'thing' - as a focus for the spiritual experience (Barber, 1991: 3). It may be a natural phenomenon that has special spiritual significance like the river at Benares for Hindus, the grotto and spring at Lourdes for Christians seeking healing (Gesler, 1996), or a man-made structure of special significance like the Neolithic stones at Stonehenge or the Glastonbury Tor that have become the focus for neo-pagan pilgrimages (Rountree, 2006). Duncan's pilgrimage was not only to an outwardly strange (to him) place that was hard to reach, but focused on obtaining an exotic 'thing' as an enabler to inward cleansing and healing. Although he told me that he had made this journey without much thought, his reference to evil and to the deeply ambivalent symbolism of the serpent makes the underlying spiritual meaning of his journey impossible to overlook. According to Mundkur (1983; Mundkur et al., 1976) the cult of the serpent (also known as ophiolatry) can be traced back into distant antiquity and has always excited the human imagination, inspiring reverence but also a primeval fear. Serpents are woven into myths and

depicted in art from Mesopotamia, to Australia and from Asia to all parts of the Americas. In the Garden of Eden myth of Christian and Jewish tradition, the serpent brings expulsion from paradise but also knowledge, underlining its dual appeal as “the garden of double messages” (Slivniak, 2003: 439). Duncan’s comments during our discussion suggested that, in spite of not encountering the serpent, he had found the ‘thing’ unsettling and possibly more than a little frightening, and now saw his youthful confidence as being somewhat misplaced:

In hindsight I think I should potentially have been a little more cautious. ... Looking at it now, yes, I’m glad I did it but I don’t know if I would necessarily recommend it to people.
(Duncan)

Some participants also implied in their comments that they experienced spiritual effects from other therapies that they had used to complement their health practices with supplements. While these were not the focus of the study, and I did not wish to be drawn into the diverse assemblage of therapies described as CAM (complementary and alternative medicine), two particular modalities – reiki and kinesiology – stood out for the number of times they were mentioned by participants and the mysterious ‘thing’ power they seemed to create for them.

Both reiki (Miles & True, 2003) and kinesiology (Hamilton, 2011) are therapies that share the concept of energy flows which can be released to relieve physical and emotional pain and promote healing. They both involve a therapist as a conduit, but the ‘thing’ enabled through the therapist’s touch appears to be something beyond its surface appearance and not something that can be rationally explained. Reiki is of Japanese origin and is said to “redistribute stagnant energy” within a person to promote emotional and physical healing (Raingruber & Robinson, 2007). Kinesiology originated as a muscle testing therapy developed in Sweden by a physiotherapist (Ottosson, 2010). However, the kinesiology practice that the participants reported attending in Christchurch appeared to be an expanded version of applied kinesiology (Rosner & Cuthbert, 2012). According to the information on this practice’s website the therapists there have their own technique for “evaluation of physical, emotional, psychological and spiritual systems of the body” (Integrated Health, undated). Both reiki and kinesiology resemble the ‘laying on of hands’ that is used in religious ceremonies to transfer conviction and power to the recipient (Carr, 2000). They also draw on the idea of therapeutic touch that itself forms an assemblage encompassing an entanglement of orthodox and alternative healing modalities. As well as reiki and kinesiology, therapeutic touch and its ally, massage, is found in nursing (Bulette Coakley & Duffy, 2010; Hart, 2012), physiotherapy (Weerapong et al., 2005), and Māori traditional massage (mirimiri) where it is accompanied by karakia (prayer) (Ahuriri-Driscoll et al.,

2008). Therapeutic touch has been used to relieve distress and pain in people with cancer (Currin & Meister, 2008), to relieve depression (Field et al., 2012), to ease low back pain (Furlan et al., 2015) and to calm preterm infants (Hernandez-Reif et al., 2007).

The spiritual benefits from the healing touch have been described as “a little understood enigma of a signally human interaction”(Krieger, 1975: 784). However, it is the ‘thing’ beyond explanation in human terms (the enigma), that appears to be the crucial component. All participants who commented on reiki and kinesiology struggled to put into words how they imagined the therapies created the effects they reported. Johnny likened reiki to meditation, saying that it reduced his stress and helped him during times when he had chronic sleeping problems but was unable to be more specific. Duncan had taken a basic training course in reiki but although he reported that “... *you just put your hands on top of [a person] and kind of feel for blockers and stoppages*”, his explanation served only to underline the mysterious nature of the effect. Participants who talked about kinesiology were equally unable to say what happened in their treatments. Jane, Sally, and Rana (who were not known to one another) had all consulted the same kinesiology practice in Christchurch and spoke about their experiences during our discussions. I was interested to know more about kinesiology from them as it was a modality I was unfamiliar with. Each of these participants had sought help for markedly different problems and each of them had found it helped them, but none of them was able to pinpoint why. Jane referred to inflammation in the body that kinesiology had been able to reduce but followed it up by saying “*to be quite honest, half of it I couldn’t [explain]*”. Sally had found resolution for long lasting pain which had not been identified even after a cascade of medical appointments and tests. She mentioned that the kinesiologist pressed her arm down and massaged the site of the pain in her side, and was “*a lovely guy... a nice guy who is effective...not dodgy stuff either*” but followed it up by saying “*I don’t know what it is or what it does.*” Rana, who indicated that her problems were psychological rather than physical distress, was also unable to say in more than the vaguest terms what happened during the treatment:

So he works on - I don’t know what you call it now – but uses those oils and things – sprays them into you and the resistance in your joints, so he did that and I noticed a difference almost immediately in my being, in the way I was thinking , in the way I was feeling, I noticed a difference. (Rana)

It is interesting here that they all attempt to explain the effect in physical terms; Jane draws on constructions of inflammation and both Sally and Rana focus on the outward signs; the touch and the ‘oils and things’ and ‘joint resistance’ in the minimal descriptions they were able to

come up with, but they hardly provide an explanation of why any of them were able to report feeling so much better. The intimacy involved in touch therapies certainly requires a degree of empathetic rapport between the therapist and the client/patient. However, there seemed to be a spiritual 'thing' operating here, which went beyond empathy, an enigma beyond rational explanation which generated effects in those who found the treatment so helpful.

It may seem simplistic or even nonsensical to ascribe the alleviation of bodily and spiritual 'disease' to a particular substance, whether every-day or exotic, a 'cleansing' drink, or an undefinable energy that comes from a particular treatment. Nevertheless, the participants' diverse reports showed their conviction that they had drawn energy from whatever 'thing' they used and had gained in wellbeing. Some reported improved biomedical symptoms; others did not, but still found that the 'things' enabled them to cope better with whatever had been bothering them. As one participant pointed out directly, a biomedical cure is not always the way to find healing. She had witnessed a healing ceremony embedded in Māori traditional medicine where a family member had their partial vision restored to full sight. This had a profound effect on her and she was unworried that the sight improvement had been only temporary:

...it [the improved sight] didn't stay, but it gave us enough of a window into a different world of healing. We were like, O my goodness, there is some really strong energy and effective practice going on here that we don't understand. So that ... started the journey of learning ... (Olivia)

The 'journey' referred to by Olivia is an aptly chosen word. It points ahead to the way that the participants' practices with supplements had been an influence for change and development, enabling them to move forward in their lives. So far, this chapter has highlighted only the participants themselves and their connections with the supplementary and therapeutic 'things' that they engaged in. Their lives, however, were much richer than this suggests. Far from being focused on these 'things' for their health, they were 'ordinary' citizens who were well engaged socially and economically across a diverse range of fields. Drawing from the participants' accounts, the next section looks at the wider context of their lives and traces some of the human and non-human components in the network of actants that interacted with the supplement things in the evolving assemblage.

Things in the evolving assemblage

All participants were part of the study because they had rich experience with supplements and herbal medicines. So it goes without saying that at the time I spoke to them, this connection had

already happened at some time in the past, they considered their health practices with supplements to be important, and they were able to speak about their experiences at some length. When discussing with them how they first started to take supplements, I could see that an apparently simple decision to start using a particular product was the result of a long chain of events within a network of many connections, some deliberate and others quite random. While the immediate situations that precipitated the action may have been a health problem of some kind, it was far from a simple connection. Entangled in the decision were their own views about health and illness that came from their cultural background and life experiences, examples of families, friends and acquaintances who also took supplements, wider social discourses of health and illness, heterogeneous pieces of information from many different kinds of commercial, health, and social media, and previous contacts with the orthodox health system. All these came together at a node in the network when each participant made the decision to take action. They bought and took a particular product which then became ingested matter and part of their being. Moreover, the chain of events did not terminate at that point, but went on to inform subsequent decisions and produce new connections which led to further actions.

Deleuze and Guattari's (1987) rhizome again helps to conceptualise the tangled relationships within such an assemblage. While it is the synthesis between the connections and interactions of the rhizome which creates the forward movement, it is still useful to look at several of the individual actants in more detail to elucidate the range of personal, social, and economic factors that were apparent across the data generated in the study. Of course, a single interview of around an hour could not expect to reveal the multitude of connecting points that had come together for each of the participants and set off their engagement with supplements.

Nevertheless it was possible to distinguish several broader categories that had been influential for all of them, and to trace the connecting threads between the vital matter of the supplements and how they were linked to previous experiences in their lives, contacts with other people that had been influential, and wider social and economic discourses that they had come across.

It was clear from the discussions with the participants that many of them assumed it was both obvious and sensible to find things to treat themselves with whenever possible, and to only consult a health professional as a back-up approach if they needed more than they could do alone. This self-sufficient attitude appeared to be derived from their family and the wider cultural milieu in which they had grown up. It echoed constructions of the 'do-it-yourself' (DIY) New Zealander which places a high value on being a "Kiwi bloke" (Cox, 2016) who takes pride in being able to bring together their own materials and skills and solve most problems

independently. This was even more pronounced in those participants who lived or had lived in rural areas, where self-sufficiency and independence is assumed to be part of the ethos of small communities (Herbert-Cheshire, 2000; Powell et al., 2016; Swaffield & Fairweather, 1998):

We were farmers so we had our own orchard But I think cod liver oil and Vicks were the staple things that my mother had in her first aid bag.... Whenever we went to the sea, my mother would go, just go and put it in the sea, salt water was very healing.
(Caro)

This type of embodied cultural capital that Caro articulated and which forms people's assumptions is accumulated, largely unconsciously, over a lifetime, strongly affecting people's ideas and beliefs (Calhoun et al., 1993). This is Bourdieu's notion of the habitus. A person's habitus results in actions that are "neither fully determined nor fully willed" (McNay 1999: 100) but played out in what Bourdieu termed "*le sens pratique*" generally translated as 'the rules of the game' (King 2000; McNay 1999). This means that the response to particular circumstances is variable and creative within the bounds of what an individual finds to be reasonable behaviour for their family, group or social class (Garnham and Williams 1980: 213). Individuals become skilled at the game, evolving beyond its original limitations and (using an analogy with tennis), develop "... the practical flexibility to know when they should run to the net or into space" (King 2000: 419).

The comments made by participants like Caro and others tended to focus on the household items and patent medicines from which they had acquired their 'sense of the game' and formed their independent attitude towards looking after themselves in most circumstances:

Ok, you've got some sunburn, let's get out some – whatever it is – and put that on. Rawleighs [a patent medicine company] I guess was really big then as well, so that's what you would do. You get a cold, so you get the Vicks Vaporub™ [mentholated cough and cold remedy] on. My older brother used to get croup quite bad so they would get all the stuff they needed to and get the old preserving thing out and make lots of steam with it and have it in a tent sort of. (Johnny)

Here Johnny looks back to his childhood and describes the material things that had been meaningful to him as simple DIY remedies. His description shows that he had observed the adults in his life interacting with them had provided the template for how he went about managing his minor health problems now although the 'things' themselves had moved on. The patent remedies he mentioned in his early years had mostly evolved over time, becoming more

elaborate and less likely to be common household ingredients, but the underlying concept of practical independence using simple material products and applying learned skills had not. Johnny now said he took multivitamins, omega-3 tablets, magnesium, and sleepy tea if he was having “*a few sleep issues*”. Several of the participants who had immigrated to New Zealand from different European countries continued with the alternative products they had been prescribed by doctors there but had learned to be self-reliant and seek them out independently because they were not available in the standard health system in New Zealand. Similarly, participants who had knowledge of Māori traditional medicine from their childhood were also continuing to use adapted forms that fitted around their current circumstances. All of them were using their ‘sense of the game’ to adapt and change in a flexible way, making use of what worked for them at the time I met them. Each had their unique assemblage of actants around their health practices to which their habitus from the past had clearly contributed the ‘codes’ of the assemblage. However, it was constantly changing and evolving with the material things being, adapted, or woven in with new ideas and discourses as time moved on and they themselves were changed.

Rather than simply adapting the codes of the assemblage as times changed, some participants related stories of a dramatic departure from their normal practices that sparked radical change, as ‘lines of flight’ from the usual actants in the rhizomatic assemblage. These transformation stories consistently combined elements of a crisis and a material ‘thing’ which resulted from it, as Derrida would say “something absolutely new and a break” (Derrida 1997:6):

...my father was very, very, very ill and the priest came to basically give him the last rites and his father said... I’m going to this friend of mine who’s got homeopathic stuff, came back, gave it to my father and from that point the fever broke. They firmly believed it was related to the homeopathic medicine and from that point forward Dad always, his parents, always used that in conjunction with mainstream medicine. So it has been part of our culture, our family culture for a long time and our family continues as a whole to use alternative medicine in different forms. (Trudy)

Trudy draws attention to this as a seminal event marking a crucial watershed in her family’s history which she designates as a moment of change “*from that point forward*”. However, as the events took place when her father was a child, and therefore before her own lifetime, it appears it had created a new assemblage around homeopathic ‘things’ which had become part of her own cultural habitus. She went on to note that, as a child, she found her family’s habitus somewhat difficult; her European immigrant family was ‘different’ from the accepted norm, not

just in their use of homeopathy but the things they ate, which marked her out as unusual, especially at school where she was often “*reeking of garlic*”. Her family experiences, however, had been a stronger influence on her subsequent attitudes and practices than the opinions of outsiders and according to her comments, it had strongly influenced her throughout her adult life.

For another participant the ‘rupture’ was also a ‘line of flight’ that took place in a crisis. A crucial moment of decision, in her case, was at a point when she rejected taking a ‘thing’ she believed would have intolerable effects:

..[the doctor] said, well go to the pain specialist and see what he says but I think he will want to put you on morphine. I said, well I am not going. ... I thought well if I’m only going to be told I’ve got to go on morphine I’m not going to take it so I will try other things. So I tried reflexology, [name of therapist] for the kinesiology and chiropractic, and of course I had to give up walking. I could hardly get out of bed at times. I did push myself and go swimming and all that but I found the omega-3 and those people with reflexology and kinesiology – my back’s not any different – I haven’t done anything – I haven’t had an operation, but I do not take one thing. I don’t even take a Panadol for it.
(Jane)

Here the things Jane ended up using appear to have been of lesser importance than the thing she was avoiding. Rather than the positive agency that Trudy attributed to the homeopathic medicines in her family crisis, it was the negative agency of the morphine that was the turning point for Jane. She does not say why she was so determined not to take the morphine, and it appeared to be something within her own assemblage of cultural and background assumptions. These two accounts were each examples of the way that both positive and negative ‘thing power’ had agency that could be seen to generate effects for the participants, acting as a catalyst that was mobilised at a time of crisis in their lives.

Interconnecting things

Naturally, in the course of their everyday lives, participants came across the ideas and stories about supplements in their interactions with other people within and beyond their own circle of friends and acquaintances and reciprocated with their own experiences. So supplements were a topic of discourse in their lives, ‘things’ that started conversations with others. It was apparent from the participants’ accounts that personal recommendations, especially those made face-to-face, were a powerful way of disseminating information about supplements and encouraging

others to adopt them. They gave numerous examples of ideas that they had heard from their family members or other people they came into contact with through shared activities. Hearing recommendations for products from people in their own network appeared to set up a background of common social capital between them and the participants which reinforced the trustworthiness and salience of the advice. Trudy had started taking fish oil on the recommendation of a friend:

... a friend of mine had been telling me about fish oil I looked up online because I always like to know and there didn't seem to be any negative side effects as such, not any serious ones, and most of what I could see it was actually quite beneficial so I thought, yes, I'll start taking it. (Trudy)

Rana, had confided in a work colleague about an emotionally stressful time she was going through and her thoughts about needing to see a doctor for antidepressants. The colleague recommended instead that she consult a kinesiologist first and see if it helped. Rana acted on the advice in spite of her initial skepticism, and found it so helpful that she had since encouraged three others in her family network to do the same. The advice does not necessarily need to come from someone well known to the recipient; it can be important and influential from a mere acquaintance if that person is knowledgeable in an area that is of mutual interest. Sally heard about cranberry for preventing urinary tract infections through the rest home where her mother lived:

It's pretty amazing stuff...(indicating the cranberry) I just hate having urinary tract infections. Having to go to the jolly doctor – [being given] the same old things ... But I don't need it now. (Sally)

Similarly, Bob heard about his supplements from passing acquaintances that he met through different social activities. In all cases the advice was also timely, coming along at a time when these participants were grappling with a specific problem and open to hearing about 'things' that might resolve it. The intersection of the problem to be solved coinciding with the right person offering advice at the right time seemed to be a trigger to act on the advice and take up the 'thing' suggested, particularly as it was readily available from any number of easily accessed sources. Personal recommendations like this tap into the cultural meanings that the endorser brings to the product (Biswas et al., 2006; McCracken, 1989), giving rise to emotional, cognitive and behavioural responses in the recipient that make the advice trustworthy and personally relevant (Lewis and Weigert, 1985).

The personalisation of the advice appears to hold true even if the recommender is not personally known, but familiar through exposure in the media, or if their credentials are meaningful to the person viewing or hearing the advice (Briggs et al., 2002). Celebrity and expert endorsements work in the same way as personal recommendations because they are easily recognised by diverse members of the public who admire their achievements (Walseth, 2008). Murray, for example, was eager to point out to me that the brand of supplements he used were also used by well-known elite sports people:

...they [the company] sponsor the Women's Tennis Association, 16 of the top 20 women's tennis players are on [product brand name] and seven of the top ten. (Murray)

Murray was a former tennis player himself, and the endorsement of these famous tennis players who were familiar to him through the media seemed to be in the same category as if it had come from someone he knew well. His respect for these players, based on his knowledge of their sporting prowess, translated into an affirmation for him that he was taking the right products, even though he was never likely to meet any of these people face-to-face or have a conversation with them.

As well as personal contacts, the rhizomatic assemblage connects human actants through the popular and scientific media with an enormous variety of ideas about things that may help or harm (for example, (Bergé et al., 2013; Crighton et al., 2013; Hatch et al., 2010; Meeker, 2012; Nicolopoulou-Stamati et al., 2015). The perceptions of risk these give rise to were discussed in detail in the previous chapter. However, it is worth drawing attention to these discourses of harmful/helpful things from another angle, that is, to highlight the constant presence of the 'thing' that one either must use or must avoid for their health's sake, which is never far from the headlines. Against this background, the actual 'thing' that is the object of interest comes and goes over time. Bernie, for example, talked about the changes he had seen in the years that he had been in his shop:

Sixteen years ago it used to be multivitamins, Vitamin C and treatments for a bit of congestion but I don't think I've sold a multivitamin now for months. Now it is people coming in looking for answers that they're not getting elsewhere. That would be for things like rheumatoid arthritis, allergies, eczema, ankylosing spondylitis, MS, cancer, a whole variety of illnesses. (Bernie)

A particular 'thing' may become the object of attention in the media that creates a flurry of interest and/or concern only to be replaced by something else a few days or weeks later. Very

often the media items are based on research studies but the limited framings of science journalism create a cycle which oscillates back and forth “from Gee whiz to Shock Horror” (Reed, 2002: 43), omitting the important caveats and nuances that the original study may well have presented. Over the last several years in the Christchurch area, concerns about various bad ‘things’ have come and gone in just such a cycle; studies about the weed killer glyphosphate (Roundup) and the migration of the plastics in food packaging and storage containers into foods (Chang et al., 2014; Guart et al., 2011; Mink et al., 2011; Portier et al., 2016) became headlines in popular and local media during 2018 (Anonymous, 2018b; Hutching, 2018). By 2019 these appeared to be fading and being replaced by concerns about nitrates in drinking water (Clague et al., 2015; Foote et al., 2015) and the effects of climate change exposing old and still toxic landfills (Brand et al., 2018; Northcott, 2019). Though the ‘gee whiz’ (‘amazing thing’) headline is also popular, for example, reports of break through discoveries in cancer or dementia, that hold out hope for a cure where none was previously available (Clopton, 2019; Haridy, 2018), the ‘shock horror’ stories about ‘bad things’ tend to be more powerful. Bad news is held to engage more people and to sell better, leading to the belief that the popular media are generally biased towards highlighting the negative aspects of any issue (not just health) and that the general public also has an asymmetric response that is drawn to reports about bad things rather than good (Arango-Kure et al., 2014; Garz, 2014; Soroka, 2006).

The concept of bad things was aligned to, but different from the social discourses discussed in the previous chapter when participants had been personally affected by a specific bad thing. The bad things that were reported in the media then seemed to act as a reinforcement of their personal experiences. Charles was one participant who held very strong views about prescribed medicines as being ‘bad things.’ He gave an account of a life-threatening adverse drug reaction where he had ended up in intensive care for a lengthy period. He had been intensely disturbed by this event, and, had lost trust in doctors and prescribed medicines. He indicated that other accounts he had read or heard about since had led him to believe that his experiences were widespread and applied much more widely to ‘people’ in general who, like him, were using supplements instead:

... why are people turning to these things? The thing is that they are getting so hacked off what they get from the medical world. They are not getting the results they expect; some of the stuff they are being given is so discomforting that it drives them demented.
(Charles)

Another participant, Wendy, reported that her husband had a similar intense dislike of prescribed medicines which he believed were harmful things promoted by drug companies for their own profit. He would go to great lengths to avoid them:

My husband absolutely hates pharmaceuticals. He thinks it's a racket... he got a really horrendous chest infection ... that morning I was thinking O my God, I am going to have to take him to A&E. But Mister had been upstairs on the internet and he had read these things about silver, so being ready to try anything ... he went and found his silver ring and he went and grated it and put it into hot water and then inhaled it. within 24 hours most of those crackles had subsided and by 72 hours he was practically back to normal.

(Wendy)

This somewhat unusual reaction was not typical of the majority of participants, most of whom comfortably combined prescribed medicines with their supplements. Nevertheless, the 'harmful thing' headline appears to have much capacity to cause confirmation bias (Montibeller & von Winterfeldt, 2015) for those who are looking for it. There are plentiful reports of adverse reactions to prescribed drugs that can be found on even the most casual of searches (for example, (Bellosta & Corsini, 2012; Hoffelt & Gross, 2016; Perucca & Gilliam, 2012), as well as items in both the academic and popular media that show the pharmaceutical industry in a poor light (Davis & Abraham, 2013; MacDonald, 2018).

The channels of communication that spread the discourses about the good or bad things are an additional category of non-human actants with their own agency that are an integral part of the assemblage of supplement things. People use them to access information and opinion, solicit advice, buy products, and connect with one another through a vast network of modern and traditional communication tools that are available across the globe in real time and are constantly changing and evolving. They link across the globe, connecting things with people who may seek them out deliberately or come across them by chance. These communication things, which form immense rhizomatic assemblages in their own right, enable people to have convenient access any time of the day or night to the vast pool of resources that is the world of the modern internet (Siliquini et al., 2011; Suziedelyte, 2012; Tustin, 2010). Moreover, the electronic things through which consumers connect with this assemblage of information continue to evolve in their ease of use, their connection speed and the amount of information they can hold. Even the cheapest devices - the mobile phones, tablets, computers – are now able to connect to online databases of vast capacity (Maggiani, 2009). These tools have not completely replaced older media formats such as radio and print but they have greatly enhanced

the ability of anyone with an internet-enabled device to connect more often and more widely to an immense pool of information. They can find out what products are available anywhere in the world and buy them, given that they have the financial resources, all without leaving home. Moreover, individuals such as the participants are not just passively waiting for reports of things that help or harm to come to them. They are also testing their own ideas and searching for new ones, and adding their own pieces of information to the mix, so that the evolving assemblage of information about these things is always in process.

Almost all participants mentioned using a variety of communication channels to search for, find, and follow up supplement products. They might search online to cross check their own ideas or advice they had received in person or read about in a magazine to discover whether it tallied with what they found online. Alternatively they might follow a link from something they found online and then seek further online and in-person advice from another source they considered reliable. Paul was a particularly adept user of all sorts of communication modes as his story of bee pollen shows:

I started taking bee pollen ... I heard about bee pollen because I was listening to Radio Pacific.... allegedly it boosted your immune system and gave you energy. ... I guess initially I felt that I was getting a boost specially if I felt that I was getting run down or a cold I would up the intake of it for a while and feel a little better (Paul)

As Paul indicated, he was not searching deliberately for a supplement here but came across the information incidentally when listening to the radio. However, he then used his online resources to find a source of supply and order the pollen, firstly for himself, and then in bulk. For a while he and his wife would fill gelatin capsules by hand and sell them as a sideline to the online section of their gardening business or at garden shows they attended. Although it was time-consuming, they did well enough out of it, he said, at a time when the product was little known. The communication actants involved in this small part of the complex network covered both the old (radio) and new (online) communication tools which were variously used to learn information, obtain the 'thing' (the pollen) and then to market and sell it online through his business connections. In turn the communication things were part of a wider web of human actants and social discourses which focused on a particular thing, bee pollen.

Other participants, like Cliff, had developed proficiency in searching the internet as a direct result of wanting to learn more about supplements and obtain them:

I only got computer literate about two years ago – I'm a total newbie in all those, Youtube all that sort of stuff. But if you use it right you can get information and also I buy most of my herbs from I-Herb now in America – I can go on their research sites. (Cliff)

By the time I spoke to Cliff, he was an adept internet user who described a range of products he had bought to try out for himself and recommended websites that he thought I should look at to help with the study. He pointed out that supplements can be ordered from anywhere with the click of a mouse and a credit card and are often cheaper than in a local store. In addition, the non-human devices and websites that enable users to make these transactions never get tired, stop work or go on holiday as a human would, so can be used any time of the day or night in any part of the world. Once the buyer initiates the order, the entire subsequent chain of reaction is handled through technological things, acknowledging the order, charging the credit card, then the packing, dispatching and delivery. Although there are humans involved along the way, the personal interaction between buyer and seller is replaced with the non-human devices, software and connections. Walk-in stores promote the personal service and advice they can offer, but once a person is confident about what they need, the appeal and convenience of online shopping seems hard to resist. Sally described what she liked about the online system:

And they've [the local health shop] been very good ... until I thought, well I'll go on the internet and it's brilliant, absolutely brilliant. Order it and I get it the next morning. It's couriered. It's absolutely amazing. They tell me exactly when they have packaged it. It's just a two second operation now that I know how to use the thing. (Sally)

It is interesting to note that Sally encapsulates this whole process and underlines its anonymity in describing it as “*knowing how to use the thing*”. Her ‘sense of the game’ shows how she has understood that buying things can be adapted from the walk-in shop to use other actants in the assemblage that are now at her disposal. She already knows what ‘things’ she needs, she uses her skills with modern communication things to find an online source where she can buy her products more conveniently - no need to go out to visit the store - and even more cheaply, becomes familiar with how it works, places orders, and receives messages in return, with the result that the package of supplements lands on her doorstep the next morning.

The agency of the material things drives these transactions in a way that humans may use but over which they have only limited control. People bring various levels of skill to seek what they want but what they find is largely determined by the non-human things that are unseen but lie behind the user interface: the systems on which the search engines run, the algorithms that

determine what they see, and the capacity and speed of the internet connections and the phones or laptops which the human users employ as tools. Most participants appeared to be aware of both the advantages and limitations of these technical things and would cross check what they found from several angles and compare prices and sources of supply. They were also continuing to develop expertise in interpreting what they found and recognising which were the more reliable sources of information and which were simply driven by marketing and promotion of particular products. This last point leads on to the economic and commercial actants that are deeply entangled in the sources that generate the information about supplements things. They include the products themselves, the companies that develop and market them (and their shareholders), the buyers and sellers and the channels through which they are disseminated. The next section tackles the implications of these actants, the levers of supply and demand, and how they were manifested in the data generated in the discussions with the participants.

Marketing things

Undoubtedly, commercial interests have played a part in the increasing use and availability of supplements and herbal products across all developed countries in recent decades (McCann, 2005; Van Buul & Brouns, 2015). There is much money invested in their manufacture and marketing (Persistence Market Research, 2017), with companies from large corporates to small independent businesses always aiming for new ways to attract new customers, and retain them by providing a point of difference from other similar products (Sosna et al., 2010; Suleria et al., 2015). The underlying demand, however, does not appear to be driven only by the pull of advertising but the push from consumers who are searching for new products and new ways of managing their health (Khedkar et al., 2017; Shepherd & Bachis, 2014; Wrick, 1995). Whether push or pull, the marketing revolves around 'things' to sell backed up by discourses and images to encourage buyers and communication channels to disseminate the message widely. The 'things' themselves may not necessarily be new, but older products that have been reimagined and repackaged to appeal to the contemporary consumer by combining, formatting or naming them differently. Cod liver oil once spooned out of a bottle to previous generations of children has become the more scientific sounding omega-3 fish oil in easy-to-swallow capsules now promoted as having benefits for people of any age. Garlic, already familiar from its use in everyday recipes or herbal remedies for generations, has been reformulated into tablets that avoid the mess and smell of the natural product and combined with other herbs and vitamins as an immunity booster (Percival, 2016; Ried, 2016; Totelin, 2015). As discussed in the previous chapter, traditional medicines from other societies that are new and exotic to western

consumers have also become increasingly incorporated into mainstream ranges in health stores and pharmacies (Connell, 2006; Loyer & Knight, 2018; May, 1996).

With the market for supplements well established, but highly competitive, participants who sold supplements and herbal products were keenly aware of the pressure on their business to remain viable by keeping abreast of current trends. They described a constantly moving scene at the point of sale, with new products, combinations, and formulations constantly vying for the attention of customers, who, it seems have a constant demand for novelty (Gallagher, 2012). They talked about the need to find a balance between anticipating or responding rapidly to consumer demands for new things, and being wary of investing too much in any particular one thing, as consumer demand was volatile, with interest prone to flare and then wane just as quickly:

There tend to be trends – definitely trends as to what is the ‘in product’ ... for instance turmeric is quite big at the moment so everybody comes out with their turmeric ...things like R3 was on the radio for ages and ages. We couldn’t get it. We didn’t know who supplied it. Huge demand for it. As soon as we got it, it started to back off a little bit. ...it’s not sold so we put it out on special and wait for the next trend. (Kerry)

Rarely, it appeared, a small businessman like Paul, might see a trend coming and capitalise on it early before others caught up. However, the market was always changing and there appeared to be a small window of time before, as Paul found out, “*people were able to find it in health shops and in supermarkets and that sort of thing and our market slowly dried up.*”

Marketing makes good use of communication channels which underpin much of the waxing and waning of trends. Online marketing in particular has a wide reach as it spans geographical distance in a way that other marketing tools cannot. Moreover, online advertising makes use of advanced technological algorithms to remember what people have searched for and automatically display similar but related products that are likely to appeal to them (Alagöz et al., 2010). However, marketing alone cannot make the promotion successful; if consumers do not find some advantage in a particular product, then it is likely to fade away, just as Kerry describes above. Although almost all the participants talked about their use of online sources, more traditional marketing was still a powerful influence on their purchases. Radio has already been mentioned by both Paul and Kerry as connecting potential users with a supplement of interest and many others mentioned reading about products in a magazine or other print publication. One retailer participant advertised his products and services in a full page advertisement in a

local newspaper every two weeks and local pharmacy chains promoted their 'specials' in print publications in their stores, as well as online. A health store chain continued to publish a substantial free magazine every month, with products and advice focusing on a particular theme each time, for example, sleep, stress, immunity or surviving winter illnesses. These magazines provided a rich source of informal data over the course of the study about the mix of typical communication and marketing actants that are used to appeal to the widest possible range of potential customers. While they clearly had human input into their design, they stood out as using the material form to connect with discourses that would maximise the appeal of the things they were promoting.

Well-chosen images are powerful actants that create positive associations with the things they are promoting (Roininen et al., 2006). In these magazines, images of glossy leaves, luscious-looking fruits and berries, scenic landscapes and happy, smiling families accompanied by bland descriptions of products as 'healthy', 'natural' and 'good for you' appeared to confirm the wisdom of the old adage that 'a picture is worth a thousand words'. Supplement users were depicted as young, good looking, often in exercise gear, jumping for joy and full of 'get up and go'. Personalised testimonials complete with signatures and photographs of satisfied users, ordinary citizens, or locally well-known sports or media personalities also featured, adding authentication and conviction to the marketing message (Koteyko & Nerlich, 2007). Older people, a key market for many of the products because of their concerns about aching joints, prostate problems, heart disease, and dementia, were not often depicted, but when they were, they also appeared in full health, engaging in active outdoor pursuits.

Supplements in these sort of media are constructed as things with the power and agency to create desirable effects in people's lives through strategic combinations of linguistics and images. The healthy and active 'lifestylism' they promote (Koteyko and Nerlich, 2007) is commonly reinforced by the imperative voice, seeming to speak directly to the reader in a personal way and instruct them to be active participants in making themselves healthy, for example the exhortation to "Jump start your exercise mojo!!" (Dobson, 2016). There is a relentless positivity about almost all the language used to communicate and market the benefits of supplement things to users in these publications (see Figure 2). They 'cleanse', 'balance', 'renew', 'boost' and 'soothe'; they improve immunity, give 'kids calm' and provide 'tranquil sleep'. Most frequently they 'support': in a single issue of the one magazine I examined, various products were said to 'support' menopause, sleep, stamina, healthy cartilage, joint comfort and mobility, the prostate, digestive balance, the body's response to allergens, and to give extra

who were frank about how costly they found supplements. Most of them knew the exact price they paid for a particular product and how it compared to other brands or sources of supply. Iris, Marama, and Caro all referred to items they would never buy because of the price; Trudy described changing from a pharmacy product to a cheaper supermarket generic brand, and Sally and Cliff now both bought primarily from online outlets because they could save money. Even those who seemed not to worry about the absolute cost, were keen to ensure that if they did spend more than the cheapest price, it should be money well spent. As Penny remarked *“sometimes they are quite expensive and you don’t actually want to spend that money if you don’t think it is actually going to work.”* There is a different set of marketing actants that come into play around price; discounts, ‘two for one deals’, loyalty cards, or ‘free gift with purchase’ offers. Additionally, ‘price plus advice’ combinations do seem to attract regular customers who just want their usual product rather than looking for novelty. Several participants reported that they always went to the same store, even if it meant travelling out of their way because they got regular discounts for their loyalty and also felt they were given good advice. Companies use these sorts of drawcards to build a ‘brand community’ (Gommans et al., 2001; Hur et al., 2011; McAlexander et al., 2002) that creates a link:

...between the customer and the brand, the customer and the firm, the customer and the product in use, and between fellow customers (McAlexander et al 2002: 38)

This so-called ‘community’ is itself an evolving assemblage built around a set of human and non-human actants connected in a network of shifting interactions. Online outlets cannot provide face-to-face advice but offset this by being able to generate ‘e-loyalty’ (Gommans, 2001), connecting users via their website without being bounded by time zones or geographical distance, and encouraging interactive customer-to-customer comments. Additionally, a company ‘expert’ may offer advice through their website. A participant who regularly bought products online from the same outlet reported her experience of requesting their advice:

I’ve just swapped to this one here [indicating new product] ...my arthritis seemed to be just getting worse. ... So I just actually typed on the helpline and told them my situation ... and I pretty well got an instant reply. And they said, you know, probably the arthritis is getting worse because there is no difference in the ingredients. Anyway, it didn’t really help but it’s much better. (Sally)

The experience Sally reports here serves to underline the complex entanglement of ‘things’ in the assemblage around the material substances of the supplements; the technical connection

through the online help service provided by the product retailer and the prompt communication of information in a personal (though disembodied) response. Although the advice appeared to change nothing for her physical problem, Sally appeared reassured, confident she was coping with her condition, felt better anyway and was overall a satisfied customer who was likely to keep using the same outlet for her supplies.

A number of participants in the study were engaged in network marketing, a differently organised set of similar actants connected together in their own rhizomatic assemblage around a specific set of supplement things. These participants were a relatively small group within the study, but the data generated from the discussions with them are worth examining in some detail because of the intensity of their engagement with their 'things'. Network marketing differs from everyday transactions where people buy things from a range of stores or other outlets that sell to the general public; the 'things' are familiar but they are differently organised and sold. The network marketing model is focused around material products and familiar discourses but mobilised through economic enticements, entrepreneurial discourses, personal relationships and the transformation narratives of company heroes. Products are sold through a network of distributors, who sell directly to friends and contacts but are also urged to recruit these contacts and anyone else in their networks to become distributors themselves (Kong, 2001). The emphasis on making money by selling through personal contacts is a key feature differentiating network marketing from other marketing strategies. Distributors generally receive commissions and bonuses on both the amount of product they sell, and the successful recruitment of others as salespersons (Keep & Vander Nat, 2014; Kong, 2001). Supplements have been a key product in network marketing right from the beginning; during the 1940s, an American supplement manufacturing company was the first to use this model of sales (Keep & Vander Nat, 2014; Kong, 2001; Msweli & Sargeant, 2001) and supplements have continued to be a mainstay of this mode of selling.

During the course of the study I heard from participants about a number of different network marketing companies that they had been, or were currently, involved with. Their accounts provided a clear picture of the various strategies that were used to attract users. One of these drew on the same social discourses of harmful things that have already been described in the previous chapter, as Clara's experience showed:

He [the presenter] talked about the nutrition that is not in our food any more, it is all processed out. The foundation food for health is gone, essential fatty acids, is gone, for shelf life. (Clara)

This is not a new strategy; Cardwell (1998) noted more than 20 years ago that network marketing recruits are commonly exposed to an identical scenario, which portrays the food supply as deficient in essential nutrients, and that all health problems are related to these deficiencies, but they can be remedied by taking the particular company's products on offer.

There was a two-way entry into network marketing it seemed. Some participants, like Clara, had used the products and had begun selling them to offset the cost of their own supplies; others like Molly and Murray, became involved as a business opportunity and an entrepreneurial challenge while also 'doing good' for others, but had then begun to take the products themselves. Molly explained how the two-pronged approach had been precisely what had inspired her to give up her previous job to take on network marketing as a distributor:

...there are different levels [of commission] as you keep going and enrol more people ... once you hit executive, you get ten percent of everything everyone else earns as well ... it sounds really cheesy but we are not focusing on the money at the moment because you can't rely on it at this stage of the game it's more about just getting people into it and when I do get paid it's great, it's awesome, and I'm definitely getting way more than I was this time last month but I'm not just sitting there waiting for the pay cheque. I'm sitting there going right, who else can I help. Because I think if you start to focus on the money it just all goes out the window. ... You've got to have dreams and you've got to want the cars and that sort of thing or you won't do anything to get there but I think if your number one goal is to help people, life's going to be better off. (Molly)

However, network marketing is more than a business opportunity that has a mildly idealistic flavour. The distributors are encouraged to identify with the company and show loyalty and commitment to it, becoming emotionally as well as financially invested, so that their personal and business lives are interlinked. The creation of an identity and a group of like-minded contacts built around the material 'things' (the products) draws on an assemblage of entrepreneurialism, social capital (Lin, 2007), brand commitment and loyalty (Hur et al., 2011), while also being inspired by the idea of helping (or saving) others whose health is affected. The implicit promise is not only of health and happiness, but also prosperity for those who are prepared to place their trust in the company and its products. Pratt (2000: 456) interprets this strategy as a necessary one to 'win the hearts and minds' of those who work for a network marketing organisation in the absence of regular hours, work colleagues, a physical location, and the psychological contract of job security provided in the traditional workplace.

Part of the identity creation appears to be the implicit invitation to the distributor to model themselves on the inspirational life story of the company founder which, as Cardwell (1998:17) describes, commonly follows a nearly identical trajectory in all companies:

...the guru as head of the company [who] ...was told by conventional medicine that he ... had only six weeks/months/hours to live. Fortunately they found one or more 'natural' plant based products that cured their cancer ... and now they have a fundamental and evangelistic desire to sell their amazing product to the world.

This was indeed closely paralleled by four stories that were related to me by different participants about four different brands of products. Each time it was presented as a type of hero's journey (Campbell, 1973); the quest of the company founder to overcome a health threat to themselves or a close family member; the breakthrough discovery after a period of isolation or intense study; the struggle to overcome others' disbelief; and their subsequent dedication to sharing their discovery for the betterment of the world and making a fortune in the process. Here is just one of them:

The history behind it was a guy from South Korea [who] was a billionaire. He was an industrialist and the story is that he got stomach cancer. So he went and lived up in the mountains somewhere and started eating an aloe plant, and basically lived off an aloe vera plant for quite a long time and then went back down and got tested and his stomach cancer was gone. So he took all his money and basically sold all his assets from his steel and invested it in this technology for aloe vera plants and then built these big farms and then started a system where you buy in, you sell it to your friends and you get a profit. they would give this big seminar to everyone and tell them how this special herbal – medicine I guess – has changed their life. Everything from people's stomach cramps to all these different types of healing, almost like miracles that they've experienced with this. (Duncan)

These narratives with their tales of the quest, seclusion from the world, and return with "the goods of salvation" (Rey, 2004: 331), had unmistakable overtones that resonated with the myths, legends, and religious figures that were described in the background chapter. Albertson (2011: 127) draws attention to the implicit appeal of religious language in societies where "...religion has old roots in the lives of many ... people carry emotional and cognitive residue from their pasts that are at work in their current political attitudes and choices." Even for those without these religious echoes from their past, the narratives in fairy tales abound with the

same elements of quest and salvation. These generic tales or “ur-narratives ...contain the seeds of many genres” (Berger 2016: 71); in them the heroes are often aided by magic objects or ‘things’ through which they manage to find the inner strength to prevail over difficulties. The universal appeal of the hero(ine) winning the battle against the odds would seem to be not only deeply rooted in the ancient myths of humanity’s distant past but to be always evolving, rearranging itself to any context without losing its intrinsic qualities. Rey (2004: 333) has drawn attention to the way these ur-narratives are echoed in economic success stories of this sort, when the company founder, the ‘charismatic prophet’ produces symbolic goods for benefit of the people. Even in network marketing the reworking of these themes with their origins in the distant past demonstrates that “mythology shows itself to be as amenable as life itself to the obsessions and requirements of the individual, the race, the age” (Campbell 1973: 330).

All the companies named by study participants were based in the United States, where there is a lengthy history of network marketing companies being investigated by the US Food and Drug Administration for deceptive marketing practices or conducting illegal pyramid selling schemes focused around the material products (Anonymous, 2003; Berg, 1994; Herbig & Yelkurm, 1997). One controversial area has been the evangelistic nature of network company distributors in their efforts to recruit others. The fascination and fear associated with such companies has led to them being described as cults (Bhattacharya & Mehta, 2000; Krzywirzeka, 2013) who use “mind control” (Pratt, 2000: 456) to exert overly strong attachments among their adherents. Certainly those participants who were currently distributors for network marketing companies at the time I spoke to them were fulsome and evangelistic in the way they spoke about the products (the ‘things’). They demonstrated high levels of commitment, enthusiasm, and a sense of making a worthwhile contribution by making the company products available to people who needed help. While they at no time appeared to be in the grip of a cult, I gained the impression that too much confidence in the company’s products could lead to potentially overblown claims about what their ‘things’ could achieve. One network marketer gave an account of stepping in to help an acquaintance who was awaiting an amputation in hospital because of diabetic complications:

So it is a very simple programme getting rid of diabetes and our shake just puts your blood sugar right straight away. ... Well! The next day he is sitting up in bed and he is coming to life already. Each day they said, Oh, he’s getting stronger by the day. Well, when they got him back [to hospital], his blood sugar was exactly right ... Everything was coming right after four days and then the surgeon looked at his leg and said, “I must have made a mistake. He doesn’t need his leg off!” (Clara)

Clara here represents the 'shake' that she gave to her acquaintance as being the 'goods of salvation' mentioned above, that saved his leg. Molly, however, was much more reserved about what she claimed to do herself, noting that she would never give more than generic advice but would always refer to other sources in her company:

There's certain things you can and can't do. So if you are not a qualified nutritionist you can't give nutrition advice. You've just got to be really careful and that's fair enough because if you are not qualified I don't feel you should do it anyway. (Molly)

Another major criticism of network marketing has highlighted the high rates of turnover among disillusioned distributors, with some said to be filled with hatred for the companies they formerly belonged to (Pratt, 2000; Mswelli and Sargeant, 2001). There were a few study participants who were ex-network marketers, but they were neutral about the companies they had been involved with. It seemed that they had mostly been drawn in to oblige a friend or relative but and had never fully 'bought in' emotionally to the assemblage of discourses that hinged on the 'thing power' of the products that the companies sold. Moreover, the expense of the products deterred younger people who were not yet well established financially and they found the commitment more than they could maintain on their limited budget:

I think it was about \$60 ... I remember I got a discount I think of 20%. That was still a lot for me anyway. I think they would expect you to get a new one [pack] every one or two months. I can't really afford that. (Iris)

Duncan also had a history of being both a user and distributor and although he had extricated himself from the company without great difficulty, he admitted that the entanglement of personal and business relationships had made it awkward. He too had found it an expensive exercise:

It's a community; you make friends, you get involved and it almost turns into a community group. You know, you go to meetings together and you make friends... And then they would say, well you know, you purchase this. The thing was that a bottle like this [indicating size] was about \$90 so it would last you a month. (Duncan)

Network marketing proved to be an interesting way of examining the assemblage of actants around supplements from a different angle. It encompassed the same levers of supply and demand, and the same discourses of naturalness and risk. However, it differed in that it drew directly on personal commitment to a particular company and appealed more intensely to

emotional engagement with 'things' which not only had value as supplements but also symbolised the underlying narrative of altruism and salvation more overtly entangled with the economic values of entrepreneurialism and personal profit (Berger, 2016: 71), in a way that was absent from those participants who sold products in health stores and pharmacies.

Conclusion

In concluding this chapter, it is useful to return to Bennett's words quoted at the beginning of the chapter, framing non-human matter as:

...an actant inside and alongside intention-forming, morality-(dis)obeying, language using, reflexivity wielding and culture making human beings and as an inducer-producer of salient, public effects (Bennett, 2010: 39).

Assemblages of ingested matter, whether supplements, pharmaceuticals or ordinary foods, whether helpful or harmful, have been analysed from countless medical, public health, commercial, and sociological perspectives but human behaviour has almost always been at the centre of these analyses (Flegal et al., 2012; Gotay et al., 2013; Mayes, 2015; Mitchell, 2001; Wang & Lim, 2012). Here, in contrast, non-human things have been brought into the foreground as vital matter that acted as an important catalyst in the participants' lives. What may have begun as a minor or random decision to take a supplement 'thing' appeared to have had the power to generate physical, mental and spiritual effects in their lives and given them hope for the future, even if their basic conditions were still troublesome. They had developed a personal story around their supplement use that resulted from a maze of connections in which the material products - the things – had a central role in making their story what it was. The meaning was what mattered; the precise mechanism by which the 'thing' mattered, appeared to be irrelevant.

Humans organize their experiences into temporarily meaningful episodes. Narrative is both a mode of reasoning *and* a mode of representation. People can "apprehend" the world narratively and people can "tell" about the world narratively. ... Explanation in the narrative mode is contextually embedded, whereas the logico-scientific explanation is extracted from spatial and temporal events. Both modes are rational ways of making meaning (Richardson, 1990: 118).

Moreover, the meaning they drew from their products was not static but always in process, constantly forming and reforming as it evolved and changed. The participants were part of this

dynamic evolution, contributing to its onward movement through the effects of their actions to research, purchase and consume supplements to look after their health. These activities were also changing the participants themselves as they gained experience and expertise as 'supplement users'. The effect of their interaction with the 'thing power' of the supplements appeared to have given them a sense of control over their health care options and to be an important influence in their decision making not only for themselves but in their interactions with orthodox health care options. The next chapter moves on to tackle the issue of power and expertise over health and to look at the part supplements played in identity building for participants in their ongoing life journey.

Chapter 6: Supplements: through responsibility and expertise to power

Introduction

The previous chapter ended by looking forward to the sense of control that the participants experienced through making independent decisions around supplements and health. This chapter examines the assemblage of ideas that had come together to build that sense of control. Primarily, these focused around two prominent themes that were raised by the participants: being responsible about their health, and developing expertise in doing so. The participants clearly saw themselves as responsible people who were taking every care to look after their health, yet they were quite well aware that supplement use was not endorsed as a responsible practice by health experts. They did not see this as a conflict, however, but viewed their supplements as something extra that they could do over and above following the recommended precepts about living a healthy life. Moreover, they explained, they were becoming their own experts about supplements and their uses, searching out information from a wide range of sources and putting their new knowledge into practice as they learned more about them. For those participants who also sold supplements, this included building expertise in how to advise others in their use.

To examine these issues relating to the tension between authorised advice and independent decisions that deviate from it, this chapter draws from Foucault's concepts of biopower and governmentality as they are manifested in the modern neoliberal state. As Foucault described it, biopower is the guiding and shaping of citizens to be "eminently governable" neoliberal subjects (Lorenzini, 2018: 155). Biopower operates through what Foucault termed the 'conduct of conduct' (Burchell et al., 1991; Foucault, 1988; Lemke, 2002), that is, the provision of guidance by officially authorised experts so that people internalise the approved way to behave and do so freely, but in a way which also serves the interests of the state (Danaher et al., 2000; Petersen & Lupton, 1996). In the sphere of health, governmentality works by encouraging people to take responsibility for looking after themselves according to the advice of medical professionals and public health experts who are credentialed and sanctioned by the state. They are seen as the repository of expert knowledge which is deployed in "shaping the thoughts and actions of subjects in order to make them more useful and 'governable'" (Petersen & Lupton, 1996: 14). Choosing to follow the advice and make 'correct' choices, they reduce their likelihood of becoming unwell and therefore creating a burden for themselves and for the state to look

after. Responsible citizens who have internalised this advice and willingly submit to this ‘conduct of conduct’, have the greatest likelihood of being considered well-ordered and healthy, thereby contributing to the productivity of the state as a whole. While individuals are not forced to conform to these norms, they are encouraged to see them as being in their own interests.

Nevertheless, many people do resist being ‘conducted’ according to recommended advice. They may continue to smoke, drink too much alcohol or keep on with ‘unhealthy eating’ that makes them overweight, even though they know quite well that these are not considered responsible health practices. Yet all these behaviours are quite legal and the products that enable them are easily available, often heavily advertised with special offers and discounting that make them even more attractive. Viewed from an economic perspective, the buying and selling of such things is generally seen as uncontroversial, for they fit with the modern neoliberal state’s focus on ensuring that the freedom of the market is maintained, that consumers keep spending, and that the economy continues to grow. The interests of the market, therefore, frequently run directly counter to expert advice on health and take precedence over policies which would be likely to constrain commercial activity and inhibit growth. Instead, the onus is placed on individuals to be ‘responsible’ and refrain from indulging in behaviours which are not approved (Herrick, 2011). Clearly, supplements are in a different category from these overtly harmful products, but they too are frowned on by health experts, albeit for different reasons. There are continuing calls for more restrictions on their availability or to bring them under the control of health professionals. Yet the importance of the commercial activity these products generate (Grand View Research, 2019) appears to outweigh the voices of health experts when it comes to policy making and regulations.

By resisting authorised health advice and instead turning to the market for their products, however, it may be that individuals who wish to use or sell supplements are merely exchanging one form of being conducted for another, that is, the subtle and less overtly stated form of control that commercial interests exercise over people who buy their products (Kasabov, 2004). Foucault’s concept of governmentality has been taken up and applied to this viewpoint as well, showing that the ever increasing use of digital surveillance is continually and relentlessly gathering and analysing the personal details and habits of those who buy, whether they shop online or in person (Ganesh, 2016). This digital surveillance has been likened to an “electronic super-Panopticon” (Zwick & Knott, 2009: 227) that constructs consumers as passive commodities to be manipulated by personalised advertising (Couldry & Turow, 2014). They are seen as being induced to spend money on products that merely enrich commercial companies

and their shareholders and that do nothing to benefit the people that buy them (Boyd & Crawford, 2012; Brayne, 2017; Ganesh, 2016).

This construction, however, would seem to underestimate the power of ordinary citizens. The tensions between the two competing forces – that is, the conduct of citizens by expert health advice and the machinations of the market to control them – create areas of “fragility and blindspots” where the modern neoliberal state is at cross purposes with itself (Lorenzini, 2018: 157). Individuals such as the participants may engage in what Foucault termed “strategic games between liberties” (Foucault 1988 cited in Lemke 2002: 53), that is, they may use their freedom creatively to exploit those tensions and resist being ‘conducted’ quite so much (Lorenzini, 2018). In effect, this response by individuals is another example of the far reaching interconnections that are possible in the rhizomatic network of actants that are interconnected in a moving assemblage around a particular issue. By exploring and experimenting with ways to benefit from all the options that are available from both orthodox health advice *and* the commercial market, and resisting and avoiding those aspects they dislike, they may develop expertise in using both to maximum advantage for themselves, thereby gaining a sense of control and independence from both.

This chapter has three sections that discuss these issues in the light of the participants’ reports. The first focuses on the participants’ construction of themselves as responsible and morally ‘good’ people who took great care to look after their health. It then follows on to show how their ideas of responsibility had evolved, continuing to be underpinned by basic health advice from orthodox medicine and public health, but developing, in addition, their own individualised approach through their use of supplements. I show how they navigated their way between the contrasting forces of being responsible in terms of official health advice on the one hand, and the societal encouragement to participate avidly in the supplement market on the other. I look at the influence of marketing models on orthodox health itself and how the development of the ‘health consumer’ has encouraged people like the participants to mobilise their ability to buy and sell in any market, including ‘shopping around’ for health care. The second half of the chapter moves on to focus on the participants’ evolving expertise about supplements as their experience with them grew. Drawing again from the concept of the rhizomatic network (Deleuze & Guatarri, 1987), it shows the range of actants that the participants were able to bring together to create individualised assemblages of knowledge, connecting multiple and disparate threads of information and experience to gain confidence and control over choosing appropriate health care options in different circumstances. For those who also sold supplements, their

personal expertise was further enhanced as they took steps to learn more about their products so as to feel confident in advising others. A final section then looks at the way the participants' enhanced skills and confidence had become woven into their life narrative and was contributing to their ongoing identity formation.

Being a responsible citizen

As an overall group, the participants appeared to exemplify the ideal neoliberal citizen who has internalised the importance of monitoring and self-managing their health. They made numerous unprompted comments about the importance they placed on being responsible and took pains to demonstrate that they knew about the basic principles of a healthy lifestyle and were doing their best to put them into practice:

I'm into the whole thing about doing the best you can for your body, looking after yourself. (Frances)

Without exception they indicated that they saw responsibility as a positive thing in their lives. They did not consider it to be a burdensome duty, but something in which they chose freely and in which they could take pride and satisfaction. Bryony, for example, saw being responsible for one's health as a positive aspiration that everyone should work towards:

... my biggest thing is about people taking responsibility – checking in with their body and learning to be able to understand what it needs, when it needs, and be their own director of health. So they are actually the person living in their body and they have chosen to take responsibility for how they are and how well their body is. So to me, that is the ultimate. (Bryony)

Bryony and Frances both indicate here that they see responsibility as being in their own interests and as the 'right' thing to aspire to. They both appear to draw on the idea of the physical body as something that needs tending carefully as a mediator between "the world around us and our internal thoughts, feelings and sensations" (Fox, 2012: 1). Bryony's remarks in particular seem to construct the body as an "eminently governable subject" (Lorenzini, 2018: 155) of the overall person, nicely reflecting in microcosm the concept of the person as a subject of the state. Her comment suggests that the underlying concepts of governmentality have become deeply, if unconsciously, internalised into her world view. All participants represented themselves in much the same way as Bryony and Frances; as 'good subjects', consciously doing their best to keep themselves healthy in the present and using strategies they hoped would maintain and

protect their health into the future. As far as I could tell, none of them smoked and none were obese; if they had indulged in 'bad' health behaviours in the past, which one participant did speak about, they had long left them behind. Moreover, they were not simply refraining from poor health habits, but had also adopted the proactive diet and exercise behaviours that are recommended by authorised experts for a healthy lifestyle (Stephoe et al., 2002). Many mentioned the importance of eating well, especially ensuring they ate enough vegetables, for example, this comment from Bob:

Well I've always been a bit diet conscious. I don't have butter and I don't have margarine. I'm not an absolute fanatic. I don't sit down and have a roast meal now ... I've always eaten a lot of vegetables; I've got a fairly good vege garden now... I consciously think I should drink more water.

A considerable number of participants were actively engaged in various sports, with some of them having been involved for most of their lives. Even those that did not undertake regular sporting activities talked about the importance of ensuring they had some form of exercise. Wendy had "*started exercising, cycling and stuff ... you know, you have to balance exercise with diet and mix that up with vegetables*". It was clear from the way that participants presented themselves that they saw their behaviour as being congruent with the framing of responsibility as a positive and autonomous way to exercise freedom of choice about looking after oneself and ensuring that they lived a healthy life.

Several of the participants had also adopted a distinctly moral tone towards those whose behaviour they perceived as being less responsible than the standards they applied to themselves. Johnny, for example, said he had noticed that he took care of himself "*a little bit more than maybe some people*". Lesley more overtly constructed herself as responsible in contrast to others whom she considered were failing to do the right thing in spite of her efforts as a health store owner to inform and guide them about the correct way to live in a healthy way:

I think it is important that people understand that they actually have to be responsible for their own health in lots of ways. They have to take the bull by the horns themselves. ... I give them information [original emphasis] ... I know usually whether they are ready to run with it ... you can tell, I mean, you know if someone's just after a quick fix ...
(Lesley).

Lesley implies that people who just want a 'quick fix' are too lazy or irresponsible to make any effort themselves even when she has told them what to do. She echoes the judgemental

'othering' of people who are believed to be shirking their responsibility to be healthy (Thompson & Kumar, 2011). There are clear moral meanings in pursuing healthy living that affirm people's self-image as being 'good' and allow them to contrast themselves with others whom they view as having less healthy habits. Those who continue to smoke, take illegal drugs, drink too much alcohol, or are obese tend to be seen as irresponsible, even deviant, if they persist in keeping up their behaviours rather than address them with expert advice (Greener et al., 2010; LeBesco, 2011; Measham & Brain, 2005; Pennay & Moore, 2010; Rideout & Barr, 2009). Such people may be considered personally undeserving of the health care they will need in the future because of their poor choices, as well as an economic drain on the health system and therefore a cost to all of society (Frohlich et al., 2012; Lupton, 1999). As Herrick (2011: 21) succinctly puts it, "health and responsibility rarely venture out unaccompanied by each other because individual lifestyle choices condition the risk of chronic disease." Lesley and Johnny's comments indicate that this attitude does not just emanate from health authorities but also tends to become the norm among those who see themselves as 'good' subjects. Viewing others as bringing ill health on themselves through failing to address their 'irresponsible' lifestyle habits has been interpreted as a modern manifestation of ancient concepts of illness as a retribution for sin (Douglas, 1992; Lupton, 2013). Although modern medicine makes a feature of being scientific, unbiased, and therefore that it stands outside moral considerations, "morals remain deeply embedded in our considerations of health and disease" (Brandt & Rozin, 1997: 2). It is not hard to see how these ideas embedded in religious belief systems from earliest times can easily be transferred into secular society so that:

... 'health' and 'illness' become tools of government. What was once part of a system of control based on a belief in divine retribution is now embedded in a network of power relations which is integral to the notions of freedom of choice (Galvin, 2002: 130).

A few participants, resisted being drawn into the good/bad, responsible/irresponsible citizen discourse. Vonnie talked about the life circumstances that limited many people's capacity to be responsible about their health, indicating that she was speaking from her own experiences as a worker in community health. She recognised that the issue was a great deal more nuanced and complex than telling people what to do and then getting them to 'choose' to do it:

.... sometimes people are just overwhelmed by life – overwhelmed by the lack of choices. In some cases there is some personal responsibility certainly [but] I notice that often in the community, people really, really try very hard but if you are on a really strict budget and you are working two part time jobs and you've got kids to get to school and you've

got your elderly mum living with you or your extended whanau [family] living with you, you try and make ends meet and try and be 'healthy' or try and stay 'well' – it's really difficult. (Vonnie)

Vonnie's comments here draw on the concept of the determinants of health – the resources available to a person in terms of income, food and housing security, cultural background, education and social connectivity – that influence the amount of responsibility that each individual is able to have over managing their health even if they know what they ought to be doing (Marmot, 2005). Vonnie's reflections, based on her working knowledge of others' disadvantage, were unusual among the participants, who generally appeared to take it for granted that being responsible about health was something that everyone could and should be able to do as they themselves were doing.

Reconfiguring responsibility: supplement users

In spite of their 'good' citizen behaviour, participants presented something of a paradox from the perspective of official advice, as they were all keenly engaged with supplements as users, sellers, or both. Although supplements are hardly in the same category as smoking, obesity, and too much alcohol, they were quite well aware of the orthodox view that treating oneself with supplements was both potentially risky and probably futile (Eliason et al., 1999; Hensrud et al., 1999; Walji et al., 2010) and that by using or selling them they had moved outside the sphere of recommended health protecting behaviour. However, rather than seeing themselves as irresponsible, participants seemed to consider that their supplement use was a way to be *even more* proactive about being healthy – a type of 'responsibility plus'. Pam explained, for example, that she had been taking multivitamins for some while but had recently decided to change to a new brand with more components and had added glucosamine as well:

Susan: So did you start taking the glucosamine off your own bat?

Pam: Yes, well pretty much so. Just having problems with muscular problems and things like that... I thought taking that would be an added bonus for me and it seems to have helped. And that there (indicating the container), the multivite. I always have really, been taking multivitamins... It's the first time I've taken it right through, you know – from A to Zinc ... so it will be interesting to see. Seems to be OK. (Pam)

There were many other instances like Pam's where participants reported a particular trigger that had led them to start on supplements, none of which had been on the advice of a health professional. It appeared that having a firm belief in themselves as responsible, autonomous citizens, they were confident in deciding what was appropriate to try for themselves. There was no indication from any of them that their actions were deliberately designed to resist expert advice; none gave the impression that they were on a personal crusade or that they were activists in a social movement with a "politicized collective illness identity" (Brown et al., 2004: 60,64), that had been formed to challenge accepted knowledge and practice. Most often their comments simply indicated that their involvement with supplements had begun as a pragmatic strategy that filled an unmet need for them at the time and was, as Pam said, 'an added bonus' to anything that medical professionals might offer them. As Rana commented, about her decision to take evening primrose oil for her menopausal symptoms, "*I'd read the material, and OK, this is what I want. It won't harm me.*" Nevertheless, even though they did not articulate their decision as such, they were, in effect, challenging the power of expert health authorities to decide what was good or not good for them. It was their own form of counter-conduct, a resistance to being conducted by experts, and making the decision to "conduct ...the domain of [their] own conduct or behaviour" (Foucault 1997 cited in Lorenzini 2018: 194-5) and go straight to the market for what they wanted. In contrast to the interpretation of the disordered body that represents a "moral failing" because it needs to be reordered with prescribed medicines (Dew et al., 2015: 272) , the participants clearly saw their self-chosen ingestion of supplements as quite the opposite; that was an additional way of responsibly 'ordering' themselves and, by implication, also morally good.

This reconfiguring of responsibility into independent, "hybridised medication practices beyond the purview of medicine's centres of calculation" (Dew et al., 2014: 39), however, meets with disapproval from experts; people are not supposed to treat themselves without consulting a health professional (Bond & Hannaford, 2003; Ventola, 2010). Doing so is framed from the orthodox perspective as lay people being over-confident about their own judgement and "at risk of being exploited, losing their money and damaging their health" (Ernst & Singh, 2008: 281). In response, health professionals over the years have continued to call for more regulation over supplement sales citing the same concerns about effectiveness and safety as noted above (Dwyer et al., 2018; Fontanarosa et al., 2003; Starr, 2015). Yet while these statements come from one branch of authorised expertise and appear to be taken seriously, the importance of the supplement industry to commercial activity and economic growth (Grand View Research, 2019)

seems to outweigh the imposition of any further restrictions. In New Zealand, for example, a survey of New Zealand companies engaged in the manufacture and marketing of supplements estimated that the industry had a turnover of \$1.4 billion with projections that there would be between 30-50% growth over the next three years (Crowe Horwath, 2014). Moreover, the export of dietary supplements containing locally grown botanical ingredients is enthusiastically supported by New Zealand Trade and Enterprise, an agency of government (Natural Health Products New Zealand, 2019). From this point of view, it appears, growth in the market that results in an increasing number of people buying supplements is framed as an entirely positive thing.

For responsibility and healthy behaviour are only one aspect of what the modern state needs from its citizens. It also requires them to be 'good' at participating in the market, buying and selling products and services that keep the economy growing. Messages urging people to be responsible and restrain themselves from indulging in 'unhealthy' behaviour compete constantly with counter messages that urge consumers to keep consuming. People are strongly encouraged to spend, no matter if they spend on 'irresponsible' products:

The one thing that would utterly destroy the new capitalism is the serious practice of deferred gratification. (Bell 1976: 78 in Starr, 2007: 214)

Economic growth is seen as not only important, but "morally necessary" (Baumol et al., 2007: 33) and is helped along by commercial interests that encourage a recurring cycle of acquisition, use and disposal of a vast array of products and services for the general public to consume (Gregson et al., 2007; McCollough, 2009). If consumer spending falls in any one quarter, there are immediate concerns about faltering growth and the viability of the economy, underlining the "tensions that mark out neoliberalism as continually at odds with its own ends and means" (Herrick, 2011: 33).

These tensions between expert advice on the one hand and strong encouragement to spend, no matter on what, provide opportunities for people to navigate between the two forces, mobilising their autonomy as responsible citizens to bypass the official 'expert' power of orthodox health care, and decide for themselves how to act independently. The participants' choice to buy (or sell) supplements was a manifestation of the way that the ordinary citizen can carry out independent choices about how to implement their responsibility on their own terms, bypassing orthodoxy and turning to the market. But could their claims of positive and independent action to be extra responsible about their health be taken at face value? Or was

their resistance to expert messages about avoiding supplements simply a sign that they were unwittingly moving into the grasp of yet another manifestation of power, and one which does not pretend to aim at public good, but at profit? The participants' remarks strongly suggested that they were not so easily duped.

All participants, whether they used or sold supplements (or both), talked about cost in our discussions. Many of them, without prompting, explained their methods for navigating their way through the market, assessing products carefully so that they obtained the best buy for the lowest cost. Trudy outlined how she carried out her own investigation, comparing prices and quality of a magnesium supplement from three different sources – a pharmacy, a health store, and a supermarket - to ensure she got value for her money:

.... when I went to the chemist they had exactly the same brand [name] that the supermarket had but slightly more expensive ...So I thought ... I am going to try a generic brand because if it helps, it helps; if it doesn't, I wasted huge amounts of money. So I tried it, found it really good and I went to a health store [name of store] ... and asked them and they said that's fine ...but this particular magnesium is more pure and it is from a different source and so we would probably recommend you take this. ... So I tried it, but if I am totally honest, I couldn't tell the difference. It wasn't significantly better, or significantly worse and anyway it was pretty much the same so I thought, why pay an extra twenty dollars. (Trudy)

Trudy constructs herself here as a sensible consumer, using personal responsibility and informed choice, the “bedrocks of neoliberal health policy” (Herrick, 2011: 17). Her independent decision making shows she does not need a health professional to tell her what to take or advise her on its use, but at the same time, she resists being treated as a ‘commodity’ in the market, carrying out her own tests on what works for her and disregarding the claims that the health store staff make about the advantage of their more expensive product.

Participants cited many instances to demonstrate that they had a well-developed sense of scepticism about overblown advertising claims that were designed to encourage them to buy products they did not want. Far from being cynically manipulated by the wiles of self-interested commercial entities, they tended to approach their supplements purchases or sales much as any other commercial transaction, many mentioning their sensitivity to various brands, prices and services that gave them the best value. As a group, they appeared well able to use their considerable consumer skills to resist being turned into a “commodity item to be utilised for

commercial advantage” (Lewis, 2019; Sturgeon, 2014: 414). They were also conscious that they were fortunate to have the personal and financial resources that allowed them this freedom of choice in the market:

It’s bloody expensive. To actually treat yourself with supplements is extremely expensive so obviously not everybody can do it. So I’m very lucky that I can experiment with these things. When I retire it might be a slightly different thing. (Tessa)

Supplements and alternative therapies are not cheap and the full range of the products in the health ‘supermarket’ is only accessible to those who are well established economically (Vatanparast et al., 2010). Although I chose not to question participants about their income level, education, or other circumstances, it was nevertheless clear from the discussions with them that most were well enough off to have at least some level of discretionary income that gave them the capacity to buy supplements.

In spite of the participants’ apparent success in resisting commercial pressure, it is nevertheless clear that supplement marketing is highly successful on a global scale (Grand View Research, 2019). The promotion of products for personal health is sophisticated and extensive so that they appeal to the widest range of people who might be encouraged to buy them, whether they need them or not. Supplements were the consumer choice for the participants, but they are just one part of the much wider assemblage of health-associated products. These include extensive ranges of exercise and sports equipment, clothing, and special accessories designed to appeal to individuals of any age, personality type, or physical ability whether they are already leading a purist healthy lifestyle or are “merely mainstream people who are attempting to live a little healthier” [sic] (Divine & Lepisto, 2005: 276). These products are continually being developed and refreshed in the same way as supplements to fill the needs of people who are looking for products and services that make the pursuit of the responsible, healthy lifestyle “both pleasurable and possible” (Herrick, 2011: 29).

The success of the techniques that ‘sell health’ in this way (Aschemann-Witzel et al., 2012) is just one of the ways that health and commerce have become entangled. Individuals, such as the participants do appear to view health care as a ‘product’ that they can assess for value against other alternatives in the same way as they would do with any commercial transaction. Jordan, a pharmacist, reported that he frequently became aware of a history of ‘shopping around’ in the people who came to him hoping they might be able to ‘buy’ better health:

“I don’t like my doctor or what he’s doing any more. What else can you give me instead?” “I’m sick and tired of being sick and tired and I’ve gone to the doctor and tells me that I am old and put up with it.” Or “I’m this or I’m that and this is all he can do”, or “I don’t like doctors at all; I’m not going to the doctor at all, I would much rather come to you.” Or, “I’ve been to six specialists, three GPs and a crystal gazer and massage and none of them have helped so I thought I would try you”. (Jordan)

The promotion of supplements may be one factor that has contributed to people taking a commercial approach to health care, but there are others too. Within health care itself, ‘social marketing’ campaigns have widely adopted tactics that “mimick the political rationality of the market ... and reflect the dominance of capitalist logics of production, consumption and organisation” (Crawshaw, 2012: 2000-2201). Social marketing is constructed as being different from ‘ordinary’ marketing because it aims for social good rather than commercial gain (Aschemann-Witzel et al., 2012; Farr et al., 2008). The uncritical adoption of such overtly commercial techniques, however, has been recognised as being an uncomfortable fit with health (Peattie & Peattie, 2003) and credited with causing a “creeping commodification” (Sturgeon, 2014: 405) of public attitudes to health care (Pellegrino, 1999; Wildes, 1999). In parallel, the change in vocabulary whereby the patient has been reframed a ‘health care consumer’ and the doctor as a ‘health care provider’ has also, according to Tomes (2006), led to an undermining of the nature of the one-to-one doctor-patient relationship. Indeed the normalisation of the terminology implies that the health care consumer can simply go elsewhere and ‘shop’ in a different place if they do not feel they are being well served. It is easy to see how the shift to the provider/consumer vocabulary in health care subtly undermines the idea of continuity of care and the personal rapport that is assumed to be present in the doctor-patient relationship.

Certainly many participants seemed to take it for granted that it was part of being a responsible health consumer to weigh up competing care options before deciding the best value for money in a particular situation. For example, they would balance the cost of self-treatment with supplements against the cost of a medical visit when they had an issue that they thought they could treat themselves. Vonnie had been used to a public insurance scheme for health cover in her home country, and considered *“the cost of seeing a GP here is incredible”*. She reported that she found it cheaper to use supplements and herbal therapies as a preventive measure – in her case for her reported tendency to depression – and for minor illnesses in her family. Others weighed up more than the monetary cost, including time and convenience. Pharmacies and

health stores, for example, gave free advice, there was no need to make an appointment and little or any waiting:

... well, it's cheaper. It's probably cheaper to go and buy some supplements than it is to sit down with the doctor. It's also quicker to whip in there and grab something and the pace of life is quick. (Bryony)

Being made more welcome and comfortable with a service was also something to weigh up against other options even if both were costly in monetary terms. Olivia reported that she preferred to consult a herbalist for most health problems to avoid the unpleasant situations which she had encountered with medical services in the past, particularly when she had needed care during weekends:

It's expensive. ... If I have to go in the weekend, maybe I can't afford do that and wait until next pay to eat so I might not pay it immediately. I've had arguments at the counter with After Hours, saying I'm not going to pay before I go in ... you're going to have to invoice me and it's caused a big [fuss]. Well why should that be a drama? I've said, look, I will pay your invoice but I can't pay today. And that's not their policy. It goes completely against their policy. So they had to go and ask the GP manager. I know if I'm doing something like that to get myself seen I know the majority of Pacific¹¹ people in the world are not going to do that. They're just going to go away, go home, they are going to stay in pain all weekend – or they might go to the hospital. But I know that that's a really dumb idea, so I don't want to do that. ...it is so unpleasant and just causes you another headache when you are weighing up the emotional cost, the monetary cost. (Olivia)

These criticisms of orthodox health care did not, however, make participants any more willing to accept poor treatment in the sphere of alternative health products and therapies. They expected equally high standards, perhaps because of the considerable costs, and were able to bring together their ideas of responsibility, their consumer skills and purchasing power to walk away from non-orthodox providers if they felt they had been taken advantage of, as this incident related by Molly demonstrates:

I went to the naturopath and then my brother did as well and we are different people and we got literally the same things.... I think that's what naturopaths should be about

¹¹ That is, of Pasifika ethnicity.

– an individual person. He took a photo of your eye up close and he was a bit of a fear monger because ...he was looking at it and he was “Oh, I don’t know how you ever walk around, man you must be so tired all the time.” And then of course then you go, actually I am quite tired. And then after I walked out I thought, what a sucker. I felt like he was there to make money... But he hasn’t done very well. His business seems to have moved several times and it doesn’t seem to go very well so I’m not really too surprised. (Molly)

These comments and others made it clear that the participants had a well-honed sense of scepticism that they applied to buying any kind of product or service – health related or otherwise - and they were fully able to mobilise their consumer skills when it came to deciding what supplements or alternative therapies they would buy.

Reconfiguring responsibility: as a supplement seller

Almost all of the participants who sold supplements were engaged in balancing different types of responsibility within their business context. Nearly all of them also spoke about their own supplement use, but once they became sellers, their responsibilities had an additional layer of complexity. On the one hand they needed to become well informed about the full range of products they sold so that they could provide accurate guidance to their customers, but on the other, they needed to maintain the viability of their businesses and ensure they kept their customers coming to them rather than going elsewhere. While these two responsibilities were aligned, they required more than simply being knowledgeable about their products and willing to pass on what they knew. One of the pharmacists, for example, noted the importance of considering what their customers could afford and pricing products accordingly so that they were offering good value. She spoke about the benefits of joining with a group of pharmacies who all sourced their products from the same supplier. Through the group’s purchasing power they were able to reduce their own costs and offer discounting on supplements which made the prices more attractive to customers:

Natural health is definitely getting more affordable than it has been. being with a group ... the price comes down significantly. You get some really good prices for things that previously would have been really expensive. ... Fish oil is an interesting example because they are a dime a dozen and basically from a price perspective people chop and change between brands because of whatever’s on special because it is going to do the same thing. (Jo)

Pat, one of the health store managers, openly discussed the commercial imperative needed to maintain sales and therefore the viability of his business. Without any prompting on my part, he spoke about the importance of his staff being both knowledgeable about the products they stocked but also to have commercial flair:

It's not about selling for the sake of selling, it's what will complement what they want. So when they walk in, let's greet them ...don't pounce on them but "Oh how are you going, John? How are you going Sue?" You know, keep them engaged. You've got to be able to sell stuff. Because how do you survive? You survive based on your profit. If you're not making a profit you are not going to survive. So they have to know how to sell. (Pat)

He went on to speak enthusiastically about the extra services he offered to attract customers and give good value for money. He noted that he stocked unique products; he prided himself on his responsiveness to customer requests and inquiries, and the quick turnaround he provided for phone or email orders so that he retained their good will and future business. The network marketers too were quite open about the necessity of their work being financially worthwhile but all of them also emphasised that they aimed to help others while also helping themselves:

So initially my focus was creating a residual income – royalties for life – and then it changed to helping people with health issues, challenges and chronic conditions. (Murray)

Some seller participants largely skirted round the necessity of remaining commercially viable but instead focused on their responsibility to take on the role of being an expert in supplements so that they could care for and guide members of the public. I did not interpret this as being a particularly significant or deliberate omission; I had made it clear that my principal interest was in people's practices in relation to supplements and I did not question any of the providers about the commercial side of their business. The existence of such a variety of well-established sellers and providers suggested that each of them had carved out a place in the market that appealed to and satisfied a particular group of clients and that they had mastered what was needed to remain in business. Moreover, the commercial aspects of all these businesses were entirely consistent with the neoliberal encouragement for economic activity. The fact that they provided a source of products which were generally frowned on by official health care experts was just another example of the different discourses and interests that are loosely tied together under neoliberal policy but interact in different configurations of power and resistance (Herrick, 2011).

From my discussions with the participants, it appeared that the combination of normative consumer behaviour with its emphasis on choice and spending to support the economy, combined with the critical awareness developed through taking responsibility for themselves had brought them to the point where they were confident in their own expertise as knowledgeable consumers or sellers of supplements. They had learnt to make judicious choices, even if, at times, by trial and error, and to navigate their way round the pressures of the supplement and alternative health market. For those who used supplements, it lessened their chances of spending money to no purpose and for those who sold supplements, it provided a feeling of having a more secure and informed footing in the particular niche they occupied in the commercial space. How they had reached this level of self-direction where they were willing and able to challenge authorised wisdom about health was something that I explored directly with the participants. Their perceptions and practices are detailed in the following section.

Becoming your own expert

Almost all the participants were independent and avid seekers and users of health information within a continually evolving network of interconnecting online, print, and interpersonal sources. They drew from it but then in their turn added to it through interacting with others and sharing their experiences. The key area that many focused on in our discussions was their ability to discover what they wanted to know by searching the internet:

You can find information out about anything via the internet, so you know, people are checking things out themselves, feeling like they want to be more – I don't know – more in charge of their own health. That it's not always about an expert. That you are the expert, to a certain extent...Information – that whole "information is power" thing. It's so much bigger now because we've got so much access to a huge range of information that wasn't as easily accessible in the past. (Tessa)

As Tessa points out, there is a vast spectrum of resources that is now available to anyone who takes the time to search for it. She does not specify the kind of information that she was not able to access in the past, but appears to be referring to the advent and exponential growth of the internet and the accompanying changes in technology which have democratised 'expert' material to a large extent since the mid-1990s. The Open Access movement for academic publications (Albert, 2006; Davis, 2011; Xia, 2010) has been a major change, allowing members of the public to find literature that was previously restricted to those in professional circles. Perhaps even more significant have been the links provided by powerful search engines to the

abstracts of expert material from databases such as Medline even if the full documents remain behind paywalls. The result has been that knowledge which was once the exclusive preserve of health professionals is now more accessible for the lay public to access and interpret for themselves. Moreover, thanks to the advantages of global internet coverage and intuitive user interfaces both for publishing and accessing material, many other sources of information have developed that provide commentary and opinion on health issues. These cover a wide variety of perspectives, including those run by consumer health support groups, websites of companies that market products, and unfiltered opinion pieces or personal stories from individual members of the public.

Some participants had well-established skills with online searching through their work or interests elsewhere, while to others it was a novelty that they were still excited about as they discovered more and more. Cliff, for example, had acquired his skills only recently as a direct result of wanting to research the supplements he used and order them online. Others such as Bob appeared to take it for granted that they would look up anything they wanted to know about supplements online and would be able to compare various opinions:

I looked up, when I first went on to glucosamine, that's how I knew it came from the green mussel and I've read articles about it and of course you've got the sceptics who think that it doesn't do any good. There's articles on that. (Bob)

The participants clearly found that locating information and advice on health topics was a simple matter. They could get immediate access on virtually any topic, use what they read to develop ideas of their own and decide whether to seek professional help or to treat themselves independently. Moreover, even recent users, like Cliff, had quickly become aware that the information they found was variable and they need to treat it with caution:

Advertising is huge into all that and a lot of these things, you know, if you can believe even ten percent of what you read, you've got to take it with a grain of salt...you've really got to be careful with the quality. (Cliff)

The participants' positivity and confidence, however, is not generally shared by health professionals, who tend to take an opposite view.

It was recognised early in the era of widespread internet availability that the stream of unregulated and widely variable information presented an unprecedented challenge to medicine's privileged status. As early as 20 years ago, there was a realisation that this increased

availability to health information had, in effect, ended the “exclusive access to expert knowledge and the ability to define areas of expertise and practice” (Hardey, 1999: 823) that had hitherto existed. By the mid-1990s, health professionals were already expressing concerns that losing their exclusive knowledge would see medicine become deprofessionalised as patients turned to online sources of information and made their own decisions about what health care they needed (Coiera, 1996). More than two decades later, ‘Dr Google’ is here to stay (Lee et al., 2014, 2017), a fact which no longer surprises health professionals, even if they only reluctantly accept its reality (Huovila & Saikkonen, 2016; Naghieh & Parvizi, 2016; Robertson et al., 2014).

According to Naghieh & Parvizi (2016:332) the availability of these widespread sources of information creates a “complex medical predicament ...” where consumers form their health knowledge from “non-medically sanctioned online information”. The same arguments about ignorance and over-confidence that put people ‘at risk’ are put forward, as have been previously discussed (Fugh-Berman, 2000; Izzo & Ernst, 2009; Jefferies et al., 2012; Martinez et al., 2012; Mazzanti et al., 2008; Morris & Avorn, 2003; Stoneman et al., 2013). There is also a belief that people who consult online information or seek alternative therapies are more likely to under-report their use to their doctor (Hensrud et al., 1999; Wold et al., 2007), thereby undermining the supposedly better outcomes they might have gained by consulting a health professional, and increasing the risk of something serious being overlooked. The excerpt below is representative of the tone taken by the majority of these commentators:

Arguably, consumers who possess the required operant resources and use e-health tools appropriately can become more engaged in effectively managing their own health. Unfortunately however, the majority of consumers are resource deficient and have difficulty effectively engaging with these online services...[which is likely to] negatively influence consumer wellbeing ... including consumers’ disengagement with health care professionals. (Robertson et al., 2014: 253)

However, in the light of the discussions with the participants, these are simplistic explanations which overlook the nuances that underpin the relationship between patient and doctor. They miss the different frame of reference within which the participants were acting and the wider network of interconnections that underpinned their actions; the complex interconnections between the material things they used, their ideas on naturalness and risk, and their intention to genuinely ‘self- manage’ their health options rather than under the guidance and monitoring of a health professional (Bodenheimer et al., 2002). Developing their own network of expertise was a deliberate strategy that enabled them to resist being made fully and transparently visible as

governed subjects (Hansen & Flyverbom, 2015) within the “surveillant assemblage” of orthodox medicine (Haggerty & Ericson, 2000: 605).

While the impersonal sources of online expertise that they deliberately sought out were a prominent focus for participants, they also mentioned gathering information serendipitously from items they read or heard about, and talking to friends and family who could offer relevant advice about supplements from their own experience. Murray, for example, mentioned a friend and Rana a work colleague who had recommended products to try or people to ask for advice. Although doctors tended to be avoided in their professional capacity, personal contacts with health professionals were valued even if their area of expertise was remote from anything to do with the particular health issue. Bob, for example, made a special point of noting that a doctor acquaintance he knew slightly through his running group had directed him to a particular supplement, but he had not mentioned anything of this to his own doctor. Even those few participants who were not confident in their own judgement still preferred to outsource expertise on supplements to anyone other than their doctor. Jane was one who mentioned that she found too much conflicting advice when she looked online herself and instead trusted the guidance of the alternative therapists she consulted:

...most of the alternate medicines I take are through either naturopaths, reflexologists, chiropractors, or B [her kinesiologist]. (Jane)

The network marketers too, rather than become involved with researching information themselves, tended to rely on the expertise claimed by their international companies, who, they reported, had their own teams of doctors and scientists:

So that's the big thing for us – they do all the science so we don't have to. ... I have met them – they are amazing [original emphasis]. ... they talked about the science behind the products (Molly)

Participants demonstrated, moreover, that they had become skilled at analysing and synthesising the various threads of information on offer in the wide assemblage that was at their disposal. They frequently sought advice from several sources before making a decision. Before trying a new supplement most would conduct their own online research first and then check it with a pharmacist or health store staff member; others would seek advice first from a pharmacy or health store and then cross check themselves with online information:

I would probably look it up on the internet. I would also speak to the pharmacist, but no matter what I was purchasing I would look it up on the internet to see if there was any good evidence, and wouldn't just take that advice. Even though I went in and spoke to the pharmacist about it, I still had to look it up for myself. (Penny)

In the same way as Penny, others mentioned that they assessed each situation on its own merits and considered the level of advice needed. They spoke confidently about judging if and when they needed to call on someone whom they judged more expert than themselves at interpreting conflicting advice that they had found:

... sometimes if it's something that I think I don't really know enough about I'd go to the herbal dispensary and actually talk to a herbalist. ...so in that case, I'd definitely ask for advice. Other things – I read a lot about what works and what doesn't work, so I do read stuff, because there have been more and more trials of supplements, so I definitely look all that up, look all that stuff up, so I try to make an informed choice, I suppose. (Tessa)

Both Tessa and Penny talk about 'trials', and 'evidence', implying, though not directly stating that they have internalised and accepted, at least to some extent, the value of scientific orthodoxy about evidence of effectiveness, (i.e. what works). They both 'look up' and find what they want, constructing themselves as well informed and independent consumers but also speak about getting additional opinions as confirmation if they have any uncertainty about their decision. 'Expert' advice is not necessarily rejected, but is also brought into consideration. Then all of these threads are gathered together to compile their personal assemblage of expertise. Other investigators have also shown that people gather together 'hybrids' of "experiential expertise" (Castro et al., 2019) from multiple sources that they trust to make decisions about their health. These bodies of personal expertise, in the same way as those the participants spoke of, form a challenge to orthodox medicine because they are "not readily visible and therefore not readily disciplined" (Dew et al., 2014: 29).

While very different from one another, an important characteristic that all participants shared was being willing to be "undisciplined patients" (Keshet & Popper-Giveon, 2018) who consciously chose to be active health consumers rather than 'patients'.¹² Being aware that their doctor was likely to disapprove if they did mention the supplements they took was a disincentive to enter into discussion on the topic and there was usually no need to. As Paul remarked, "*I imagine that a long discussion with him [his doctor] would probably produce the result that, no, I*

¹² The word 'patient' is derived from the Latin *passive* verb *patior* meaning I suffer.

wouldn't recommend that." Those who had mentioned their supplement use might be reprimanded as Frances had been:

He said, well you are probably very silly to have done that because you just don't know. You have to be careful. (Frances)

Rather than being told they were 'silly', they were more likely to avoid the issue altogether, actively choosing to obscure some of their practices from becoming questioned and contested. They were then free to decide what to do or not to do without comment from a professional; their purchases did not have to be recorded against dispensing data or their health records and they did not need to be checked on to see if they were 'adherent' as is the case with prescribed medicines (Náfrádi et al., 2016). Moreover, as their experience of supplement use grew and they gained more confidence and expertise about them, the participants reported that they believed their doctor would not necessarily know more than they did, even if they did ask them for advice:

Well, personally I feel that the doctors – not being disrespectful – but to be honest, they don't have any training in nutrition and diet. (Pat)

Other participants too had found that doctors usually prescribed a drug as the first option and were unlikely to give advice on alternatives:

I think drugs have got their place but I just feel it would be nice if alternatives were offered, were pushed as much as medication is. ... I don't particularly want to move the girls and myself to a practice that just does natural medicine because I think that swings completely the other way so yes, I just feel that it's not very well balanced perhaps in terms of the advice you get. (Penny)

The perceptions of the generally poor knowledge of health professionals about the use of alternatives and their unwillingness to enter into discussions about them was not unique to the study participants but is consistent with studies done elsewhere (Chang & Wang, 2009; Eliason et al., 1999; Humpel & Jones, 2006; Peters et al., 2003; Reedy et al., 2005; Vickers et al., 2006). The point is not so much whether any piece of information that consumers come across is right or wrong, scientifically based or not, 'objective' or commercially biased (Schwitzer et al., 2005) but that they all exist and all make use of up-to-date communication strategies to disseminate their particular version of expertise and therefore extend their influence. The sheer variety of the information and the way it is interpreted undermines the idea that there can ever be one

authorised, stable version of expertise held by an all-knowing medical profession (Annas & Elias, 1999; Waxman 2005). Given this plethora of conflicting information about health and medicine, it does not seem surprising that some consumers may 'tune out' official advice and take their own steps to become informed.

Indeed, several participants mentioned that they made use of their personal expertise as another type of counter-conduct to reverse the surveilling gaze (Ganesh, 2016) and scrutinise the experts themselves:

Susan: If you decided to take something would you look it up on the internet first to see?

Frances: Oh, yes I would. Even sometimes if I am given a prescription I will look up sometimes what it is.

A particular trigger which generated 'counter conduct' and the resistance to orthodox expertise among participants was what they referred to as being 'fobbed off'. This expression was used by a number of participants as a way of capturing their frustration about their need for a problem to be taken seriously by their doctor but receiving only a disappointing and dismissive response:

I had irritable bowel and basically got fobbed off by the doctors as you would imagine so I went to a naturopath, changed the way I ate and changed my lifestyle and took on board a lot of the common sense suggestions that she made at the time. Some that you probably already know yourself but you have got too lazy to do any more. (Trudy)

It is interesting here how Trudy comments "*as you would imagine*" underlining her low expectations of the medical profession. Others too expressed frustration at aspects of medical treatment they had received. Wendy felt that she had been disregarded as an individual, being "*thrown statins or whatever the drug of choice is*" and Olivia was even more emphatic, speaking about being "*disempowered*" by the "*extreme, awful experiences with people working in health*".

The participants' independent actions were directly in contrast to the concept of 'patient empowerment' through shared decision making, an approach that is promoted for people with chronic disease so that they become able to better 'self-mange' their conditions (Elwyn et al., 2012; Nolte & Osborne, 2013; Schulman-Green et al., 2012). This approach is presented as handing over power to the patient (not referred to here as a health consumer), who will then achieve 'activation' and 'engagement' in their own care, leading to better outcomes and fewer health care costs (Brady et al., 2013; Nolte & Osborne, 2013; Powers et al., 2015). The discourses around self-management construct the patient as receiving expert advice on the

correct behaviours to adopt and why they will benefit, and therefore being motivated to carry out what is recommended, clearly reflecting that Foucauldian concept of the autonomous subject and the conduct of conduct (Andreassen & Trondsen, 2010; Veitch, 2010). Any reading of the literature, however, demonstrates the underlying assumption that the doctor is in charge but the patient takes on the responsibility of doing what they are told. Salmon and Hall argue that constructing patients in this way allows the doctor to withdraw from the “problematic responsibilities” (2003: 1971) presented by people with chronic illness and that the approach is more likely to disempower patients rather than offer them control. In contrast, the participants’ version of self-management, in which they were highly engaged, needed no authorisation or instruction from an expert.

Nevertheless, none of the participants, no matter what their previous experiences, had turned away entirely from mainstream health care when they believed it was appropriate. The concerns raised in the literature, particularly the idea that consumers who treat themselves with supplements will fail to seek treatment for serious conditions (Robertson et al., 2014) were simply not borne out in this study. All participants were very aware that self-care could only be used up to a point and that there were times when the expertise and professional training of health professionals was essential:

I am very grateful that there is a whole medical environment out there in case of emergency, serious stuff, but I would also have to say that we keep getting letters from the doctor saying “Are you still enrolled, because we haven’t seen you for three years”
(Catherine)

In Foucauldian terms, they were willing to submit to being ‘conducted’ and their bodies opened to the gaze of the health professions in some situations when they considered it appropriate, but it would be their own, active decision to do so. They did not appear to have any difficulty in making the distinction between such cases and the routine, chronic, or simply annoying conditions that they believed they could confidently look after themselves:

I mean, obviously it’s a bit different when you are thinking about diagnosing cancer and all of that stuff, but there are things you can work out for yourself. (Tessa)

It may seem an obvious point that serious or emergency conditions need orthodox medicine, and that self-care or alternatives are suitable only for less serious conditions but it is worth highlighting that this group of participants, at least, believed they were able to make the distinction. Seen in this way, not raising their supplement use with their doctor was also likely to

be driven by the practicality of avoiding unsettling an ongoing and positive relationship which they knew they may need in the future.

The participants not only balanced orthodox care against their own self-care alternative behaviour, but were willing to 'shop around' for a doctor that suited them. They were cognisant that there was a spectrum of views within the ranks of health professionals and were able to use this variation to their own advantage. One enterprising participant reported that in addition to his own self-care practices, he consulted two different doctors in different parts of town to achieve the balance of orthodox and alternative health care he felt was most appropriate depending on the particular circumstances:

I've got one doctor there but I've got a doctor out here as well. The one at [name of integrative practice] will treat me naturally because he knows who I am but it got to the point that something I was dealing with – try this and try that, it's not working. ... I took the antibiotic, I got myself right then I went back to him ... and I have been good ever since. At some point you can't keep saying bean sprouts and garlic juice will fix it because it may not fix it, so you hit it hard. (Pat)

As individuals are not able to be enrolled in two practices at once in the New Zealand system, Pat must have been prepared to pay the extra costs that unenrolled patients attract for some of his consultations, but appears to have felt it was worthwhile. Other participants also spoke about weighing up what they would tolerate and what was unacceptable in a medical provider. Devon, a herbalist, for example, had a neutral approach to selecting a doctor but had a 'bottom line' in that she would not deal with anyone "who openly antagonises the idea of using herbal medicine, which doesn't really happen so much anymore". Moreover, all participants were willing to exercise consumer behaviour and take their 'custom' elsewhere if they were unsatisfied with the service they received:

I changed medical practice because I wasn't satisfied with the doctor that I was seeing. ... I wasn't getting anywhere with the other fellow and I said to [current doctor] I've got this, this and this and he sorted it all out. (Murray)

It was clear here that Murray believed he knew what his diagnosis was and had decided in this particular case, self-care was not appropriate. He was calling on a doctor with an appropriate level of expertise to "sort it out" and was prepared to move from one practice to another to find one. Murray does not say why he believed he was "not getting anywhere" and at the time I spoke to him I did not follow up on the reason. It is unclear whether he had lost confidence in

the “*other fellow’s*” competence, or whether he felt that he was not being listened to and his concerns ‘fobbed of’ as other participants called it. In any case, he, like the participants above, knew what level of expertise he wanted and was prepared to use his resources to engage what he judged was necessary. Being willing to switch between health providers requires a degree of assertiveness to declare oneself a dissatisfied ‘customer’ from that particular practice and being prepared to accept the potential bad feeling and emotional cost it may involve in explaining oneself to get one’s medical records transferred elsewhere. As Rose (1996) writes, the conjunction of individuals seeking to have improved quality of life and professionals claiming to provide objective rational answers, is an alliance:

The mechanism of this alliance is the market, the ‘free’ exchange between those with a service to sell and those who have been brought to want to buy (156-157).

Terminating the relationship with a doctor in a “patient walk out” (Stokes et al., 2004: 512) as happened with Murray, is a signal to the provider that this alliance has broken down. The willingness of participants to assert themselves in this way also demonstrated the confidence that they gained through their growing expertise in deciding what health care options they would use and under what circumstances.

So far the discussion has focused on individual expertise and decisions about selecting personal care options. Considerably more complex is the position of those who offer their expertise as sellers of supplements and advice on how to use them. They comprise a network of ‘alternatives’ that ranges from the pharmacists, on the one hand, who are credentialed as part of the orthodox health system to those whose expertise is based only on their own claims to know more than the general public. This space is busy, even cluttered, and hotly competitive with a diverse collection of providers all claiming various types of expertise that can help individuals. They compete not only with one another but also with orthodox medicine, demonstrating once again the tensions at work in the neoliberal economy which, though it officially endorses the primacy of ‘experts’ in orthodox medicine, also upholds a parallel universe of economic opportunities for marketing alternatives even if they be counter to the orthodox line. A number of the participants in the study were directly engaged as ‘alternative providers’ as well as consumers in this market and therefore had perspectives on expertise from both angles. The next section looks at how being on the other side of the consumer/provider divide affected their practices and the range of conduct and counter-conduct that they too were able to mobilise in their position.

Becoming expert enough to advise others

Among the participants there were pharmacists, pharmacy technicians, health store managers, and those who offered different modalities of alternative therapy. They were a diverse group, but had two noticeable characteristics in common. Firstly, all of them ultimately made their living from marketing their products, expertise, or both. Secondly, that once on the other side of the customer/provider divide, all of them were convinced that the public needed their advice. Each of them offered a different 'assemblage' of orthodox and non-orthodox expertise which they used to justify their claim to the particular section of the public – and the market – that they advised.

The pharmacists were the most 'expert' in biomedical terms, but arguably also the most likely to have difficulty balancing their practice with alternative health products so it did not conflict with their role in dispensing medicines prescribed by a doctor. Pharmacists are considered to be a key part of the primary health care team (Lloyd et al., 2010; Smith, 2012). They rely on the doctors whose prescriptions they dispense having confidence in their expertise and professionalism, but are generally seen as lower in the health hierarchy compared to the doctor in spite of their greater knowledge of pharmaceuticals (Bradley et al., 2018; Hughes & McCann, 2003; Weiss & Sutton, 2009). Their position has been somewhat unflatteringly compared to that of 'sheepdogs' by Waring and Latif (2018) who drew from Foucault's work on pastoral power, to suggest that:

... the docile patient (sheep) [is] herded and checked by the pharmacist (sheepdog) and
... both patient and pharmacist are supervised and directed from a distance by the GP (shepherd) (Waring and Latif, 2017: 8).

All pharmacists in the study referred to their biomedical training and put it forward as the special level of expertise they could offer to the individuals who came to their premises seeking advice. In addition, they noted that they were able to access the records of all medicines that their regular customers had been prescribed by doctors, and therefore they were able to provide an extra level of safety regarding possible interactions. They largely avoided negative depictions of their customers as poorly informed and focused much more on the positive advice they could offer. As the following excerpt shows, however, there were a number of underlying tensions in their role:

If I put my hand on my heart and say I'm a white coat health professional – which I consider myself – that's part of what makes me who I am, then I think we are going to

run the risk of actually not helping patients if we say, I don't actually know about that [supplements/herbal medicines]. ...we do need to know what we are talking about and I do actually think that some of the natural health products do have a lot of validity. ...by using natural health people see that they can do that without the middle man. But at times that's where exactly it is crucial to have a middle man such as a pharmacist because the reality is it is not quite as straightforward – you know – this should work for this or this may work for this so I will take that. (Jo)

Much is implied in this comment. There is an initial alignment by this pharmacist with orthodox expertise, and one that deals with 'patients' rather than consumers. However, because these 'patients' do come directly to the pharmacy, and avoid the 'middle man' (i.e. the doctor), we (now speaking on behalf of pharmacist colleagues in general), cannot opt out of giving informed advice. Instead, they have a responsibility to occupy the position of the expert intermediary, offering advice directly to people who come to them for guidance, not *on behalf of* a doctor (as they do with prescribed medicines), but directly. All the pharmacists interviewed in the study positioned themselves in this way as being responsible and knowledgeable experts needed by members of the public to steer them in the right direction with the correct use of supplements and herbal medicines.

The information is available there but is the person qualified to understand the information? ...this is where I have always believed in pharmacy ...So if somebody wants to go down that track [researching their own information] they actually need someone who's qualified. (Jordan)

Both Jo and Jordan are enacting a form of counter conduct to the 'sheepdog' role who merely chases up the sheep when the shepherd instructs them. As Waring and Latif (2017) note, there are tensions in the relationship between doctors and pharmacists and the latter may resent the way that they are viewed as someone who is merely there to carry out what is delegated to them by a 'superior' profession. These include comments about pharmacists which discount their professional qualifications and refer to them as 'shopkeepers' (Hughes & McCann, 2003), or compare them to "firms that sell computers or mobile phones" (Clarke, 2014: 148). They all reported taking on the role of the shepherd by 'prescribing' directly when they were asked for help, and, in doing so, they were by implication, also distancing themselves from the authorised view that supplements are largely unnecessary and/or ineffective:

What are you going to give the woman who is four weeks pregnant? What are you going to do for the 97 year old frail 47 kilo lady who is on 17 medications? ... Are you just going to say, sorry love, go home and put up with the symptoms because I have nothing to give you. (Jordan)

All these excerpts from pharmacists appeared to be drawing on the concept that pharmacists have a duty to give 'best advice' according to their professional judgement (Roche & Kelliher, 2014). Pharmacists also commented on issues around the sufficiency of evidence, noting that levels of 'evidence' derived from trials were not clear cut and had been challenged in orthodox medicine itself (Ioannidis, 2008; Kennedy-Martin et al., 2015). Lyndsay remarked in particular on the blurriness around how much evidence was needed to be sufficient:

So it's not black and white; it's pretty grey. And so, I mean what's acceptable evidence if you've got something that has a series of positive double blind studies involving a reasonable number of people that have been positive. Is that acceptable evidence? Or do you need a meta-analysis involving 100,000 people. Glucosamine is a classic example of that in that originally there were quite a large number of positive studies and then there is a meta-analysis but then the meta-analysis can be criticised as well. So often evidence is pretty murky on its own. (Lyndsay)

Pharmacists were also aware, however, that their orthodox training had not prepared them for the position that they found themselves in between needing to know enough about supplements to answer the requests for advice they received, yet in doing so they faced the general disapproval of their medical colleagues whose prescriptions they dispensed. Kerry, a pharmacy technician pointed out that the perception of superior expertise of pharmacists about supplements was not necessarily well founded:

They [pharmacists] don't know any more. They know more about the [prescribed] drugs but they have had no training [in other products]. But because they are the pharmacist they are seen to have that – look I am not dissing them – it's their responsibility at the end of the day. (Kerry)

All of the pharmacists had taken steps to learn more but it appeared they got no help from their own professional association and had to turn elsewhere to become more knowledgeable. One of them mentioned he was completing an international qualification in natural medicines and others had found that the product companies were the most readily available source for upskilling themselves:

Well at the beginning I felt quite ignorant about it. I thought, this is silly because I should be able to at least give them [customers/patients] an account or know where to look properly to find some good information for them. ... So we then, with the suppliers that we were dealing with ...they linked me up with seminars that were going on with one of the companies to look at certain aspects of alternative medicines for a particular condition or conditions. (Lou)

So the pharmacists, too, were drawing from an evolving assemblage of expertise, adding to their orthodox training, their many interactions with the public, the feedback they received, the information from product companies, and, for some who were willing to discuss it, their own experience with taking the products. They undertook these educational activities outside their usual realm at the risk of attracting the negative discourse that pharmacists have often received as suppliers of supplements and herbal products.

A different situation existed for those participants who offered alternative therapies in acupuncture, homeopathy, and medical herbalism, all of whom also either provided or recommended supplements to their clients. Each of them had a New Zealand recognised qualification in the modality they practised, but were not eligible to practise within the public health system.¹³ This, however, avoided the tension faced by pharmacists in maintaining working relationships with orthodoxy. They simply presented themselves as well qualified in their modality and able to offer an alternative to the biomedical approach to anyone who wished to consult them and was able to pay for it. They did, however, share the view of the other providers that members of the public could go astray without their guidance:

I believe that people often will have an idea of what might be good for them or what might work for them. I see that as an OK thing to do in the short term. I see that problems start happening when people decide to take something and then they take it for five years— the same supplement for maybe five years – and they've got these really unusual symptoms because they've taken the supplement for such a long time that they've made some kind of disharmony in the body... (Bryony)

The three participants who managed health stores were different again. None was able to call on the same level of officially approved educational or orthodox health expertise as the

¹³ The Accident Compensation Commission (ACC) does fund acupuncture, chiropractic and osteopathy treatments, but these are limited to people who meet the accidental injury criteria (ACC 2019), and have treatment from a therapist that ACC has approved

pharmacists or alternative therapists. However, they all made unprompted comments assuring me of the wealth of resources they drew on for support. They reported that they or someone on their staff had undertaken training either through their parent company, or they employed a staff member who was qualified in one of the alternative modalities, usually herbalism. More than the other 'seller' participants, they went into detail, emphasising their awareness of interactions between supplements and prescription drugs, their protocols for questioning people about the prescribed medicines they took and the references they kept on hand. They stressed their readiness to refer outside the business, for example, to medical herbalists, if they were unsure of what to advise and believed customers should get a second opinion.

We pride ourselves and [name of business] on giving people accurate information based on research. (Pat)

Their seemingly over-emphatic reaction appeared to me to be a way of constructing themselves as running a serious, well-informed, ethically sound, and responsible business, possibly in an unspoken acknowledgement of the unfavourable way health stores are often portrayed in the academic literature as being profit-driven providers of poor advice (Coon et al., 2015; Gotay & Dumitriu, 2000; Sarino et al., 2007; Temple et al., 2009). A particular aspect that the health store providers mentioned was their special niche in providing hope for those who felt let down by the orthodox health system and had 'given up' believing that they would get any help except from sources they explored themselves:

Very, very rarely do people with serious illnesses and long term health problems, very rarely do they come and see us first. (Bernie)

Pat and Lesley also made comments in a similar vein, with Lesley suggesting that people had lost faith in conventional treatment:

They're not actually getting the fix that they initially thought they should get from the doctors. Once upon a time he was God; he knew how to fix it. (Lesley)

This overt use of religious imagery recalled the notion of the doctor as the shepherd or pastor that was noted earlier (Jones, 2018; Waring & Latif, 2018) and the vacuum in guidance that the health stores presented themselves as being able to fill. An interesting feature of the health store managers was their uniformly low opinion of the public's ability to know what was good for them and that they, as health store managers, needed to step in and provide their greater level of expertise:

No health shop likes the internet. We hate it with a passion It's hugely frustratingpeople walk in with bags of stuff they've bought off the internet and they're going for an operation in two days and they say I've been taking this, and this – and it's completely wrong what they've been taking. I wish they could turn it [the internet] off sometimes.

(Bernie)

Even though all those who provided advice on supplements felt that the public needed a degree of guidance from them, the health store managers were by far the most emphatic in their insistence that people would go astray without their help. Their comments appeared to fall back on precisely the same discourse as that used by orthodox medicine; the construction of the general public as an ignorant bloc, who were 'at risk', and needed to be more 'disciplined' and submit to their guidance. I interpreted this an attempt by the health store managers to counter the perceptions of them as being commercially motivated (Temple, 2012), emphasise their altruistic intentions and shore up their own place in the provision of expertise. In contrast, the pharmacists and alternative therapists, who also believed that their customers needed their guidance, were much more positive about them and did not speak about them in such strongly negative terms.

In summing up this section on expertise, its principal characteristic was just how complex and generally 'messy' it was. The participants' accounts showed that the care options they chose were "dispersed, heterogeneous and variegated" (Death, 2010: 235) not a binary opposition of alternative versus orthodox care. All participants readily mixed both, drawing from their own experiences and background knowledge derived over their life to this point. They used diverse sources of information they could call on through online searching, media and advertising, then added in what they learned from people they came across, and combined it all with their first hand experiences of the products they took. The convenient dichotomies of expert versus lay, normative versus non-normative, orthodox versus alternative, or care versus commerce were blurred; all participants bridged and muddled these divides and moved beyond them to a state where each of them had developed their own assemblage of expertise that was relevant to their own unique context. Moreover, the interconnections in the assemblage around their supplement practices that had led to the participants developing their new skills and knowledge had become woven into their process of 'becoming' as they moved through their life journey. 'Becoming' is an active, creative process, driven by the "capacity to form new relations and the desire to do so" (Buchanan, 1997: 83) and it creates the conditions for ongoing identity formation, (Fox and Ward (2008), as the next section explores.

Supplements and evolving identity

When they spoke about supplements, the participants provided many examples of their own processes of 'becoming', the unexpected twists and turns during their lives, the multitude of interconnected but unplanned relations that they had formed with people and things, and that were continually evolving and changing. Their accounts demonstrated the unpredictability of the connections that take place in a person's life and their capacity "...to form new relations and in turn enable other new relations" (Buchanan, 1997:82), as their life progressed. The chance encounters and the variety of incidents that had proved to be influential reflected the randomness of the rhizomatic assemblage with its many connections "always branching and twisting, in flux and reassembling in different ways"(Fox, 2012: 67). Each of the participants' stories as they explained how crucial events in their lives had unfolded contrasted with "the modern fantasy of the body as a stable, unified, bounded entity" (Malins, 2004: 85). Their accounts revealed the constant developments that come about in people's lives, the many connections that they make and the decisions they take to follow one path or another.

Sections of Bob's story showed how this could happen. Bob had been involved in competitive running for more than 50 years, ever since he had been singled out for special running coaching as a schoolboy. At a point in his fifties (he was now almost 70), he started to find running was becoming more difficult:

...your legs start to react especially when you are in your mid 50s and then I gave up running on the track and I was still running and then I was thinking, oh, my running is coming to an end and I don't want it to. I want to keep on going. And for about three months I felt I was going to have to give up. I was so stiff and not feeling too good at all, hobbling when I am running – didn't have a specific injury but my legs were very, very tight. (Bob)

After his decades' long participation in running, it was clearly an important activity for Bob and part of his identity was that he was 'a runner'. Being faced with losing this part of himself set him off on a line of flight when a chance conversation at a church service with a passing acquaintance alerted him to the possibility of taking glucosamine for his joints as his informant was "sure it worked". The random interaction with this person set off a series of actions where he formed new connections with different people, places and things. Some were deliberate and planned; he did his own research online, noting that he read a spectrum of opinions, articles by "sceptics" as well as those that were positive. Through his decision to buy the glucosamine he

found a pharmacy where he believed he received trustworthy advice, and owing to the repeat business he brought, he now received a discount on his products. Other connections were quite random; he chanced to hear from a different acquaintance, a doctor stationed with the US Navy in their base in New Zealand, who told him that fish oil was also *“great for the joints and it lubricates the eyes”*. This was an important connection in another and completely unexpected direction; Bob’s father had gone blind at the end of his life and Bob thought it was likely to be hereditary, so he was drawn to the idea fish oil may help him in both ways. He had added fish oil to the glucosamine, and since then made refinements to his supplement regime, taking more before a competitive event or a planned long run, but otherwise a little less. Through all this he believed he had been able to retain his identity as a runner that he feared he might lose, and keep his body fit for what he wanted to do. He also commented that being able to do so had reduced his stress and *“kept me mentally sound ...That’s the odd thing. You go for a run, instead of being tired, you actually power up”*.

The aptness of the rhizome metaphor is shown here through Bob’s narrative. Its multiple connections with people that passed unexpectedly in and out of his acquaintance, pieces of information they happened to mention by chance that they did not know would be important to him, the non-human actors that were part of the overall story - the information modalities, the material substances he took, and even the loyalty card that he had at his favourite pharmacy. These were all part of the evolving direction of the lines of flight as they twisted and turned; the chance discovery about eye health, and the optimism he reported about his future mental and physical health that had kept him moving in an away direction from the blockage he had come up against in his desire to keep running. Tracy, similarly, described in moving terms how her back pain had become an unwanted presence, dominating her life and stopping her doing what she wanted to:

All I wanted to do was to go for a run. I was feeling so frustrated and I just wanted to cry all the time. I still actually – the thought of it makes me cry again because I was so miserable... (Tracy)

The continuation of her story into better times, like Bob’s, illustrated the role that interconnections with people and things had played for her, reinvigorating her with the desire to take action, keep evolving, or in the language of the rhizome, to continue ‘becoming’. Illness, wrote Deleuze (1997: 228), is not a process but the stopping of the process of becoming. It is a “state into which we fall”. In contrast to this stoppage:

Becoming begins as a desire to escape bodily limitation. Whether the constraint in question is generally characterized as a 'natural' or 'cultural' necessity makes little difference. ... What matters is that the constraint is there, and there is a counterdesire [sic] to leave it behind (Massumi, 1992: 94).

This counter desire was a recurrent theme in all the discussions I had with the participants; their desire to *do* rather than just *be*, to be active, to avoid their lives becoming stuck in a place where they were centred on the limitations imposed by pain or dysfunction. Some of them were just small vignettes that presupposed a long background story which would have taken much time to relate. Interestingly, most participants could recall the precise event that connected them with the supplement assemblage and in most cases it was because of a physical or mental health problem which threatened to create a blockage in their life that would undermine their identity. Jane, for example, recalled the precise moment when, after an unsatisfactory medical encounter, she made the decision to turn away from accepting that she was always going to be a medical problem (Shilling, 2002) and actively seek out other options, noting that "*I am prepared to experiment if there is nothing to lose*". Such situations were presented as a turning point in participants' lives, where they realised that they had an opportunity to assume control over circumstances, explore other avenues that were open to them and find other possibilities on which they could act.

These encounters where there was a chance to grasp an opportunity that offered or allow it to pass by, also featured among those who provided advice to the public. All the pharmacists spoke about being confronted with situations where they felt the tension between remaining strictly within their formal training or branching out beyond the orthodox response. Jo found she was not able to opt out of helping people who asked for advice about alternative products and say "*I don't know anything about that*". Lou similarly reported he was driven to learn more because he felt "*quite ignorant*" and "*silly*" when people asked for his advice. According to their accounts, these opportunities had led down a line of flight that opened up a different world view beyond their professional training, even if they set off down that road as a sceptic:

If you've got someone that is addicted to sleeping pills ... which is better? Either going to the GP and getting prescribed something that may result in a life-time addiction, or get some placebo which might just help them think they are going to get a good night's sleep and actually does. And they help. (Lyndsay)

Many others in the study referred in a similar way to a point where there had taken up an opportunity to learn, to change, to take on a different world view, to become rather than remaining the same. They had experienced:

... a tension between two modes of desire – being and becoming; sameness and difference. At the point of departure from the constraint, there is a ‘bifurcating future’ and a choice whether to fall back into the one or to set out instead on a singular path of becoming, leading into undreamed of horizons (Massumi 1992: 95).

Coming up against a barrier that affects what their body can do ‘deterritorialises’ people (Deleuze and Guattari 1987: 9), figuratively, cutting the ground from under their feet, and moving their sense of self from autonomy to dependency (Fox 2012: 78). Being diagnosed with a chronic disease or becoming disabled even in the medium term through accident or injury threatens to disrupt how they envisaged their future unfolding (Morden et al., 2017; Williams, 2000). They may lose the ability to engage in sport or other activities which are part of their identity and their opportunities for social contact with others are narrowed (Theou et al., 2017). They may no longer be able to get themselves independently to where they want to go, and so their lives become restricted to a smaller circle of contacts and interactions and they become dependent on others. Becoming socially isolated leads to feelings of loss, a decline in feelings of competence and self-worth, a feeling of purposeless and an erosion of identity (Alpass & Neville, 2003; Pinguart & Sorensen, 2001):

Identity is a feature of the clustering of relations around specific aspects of embodiment, such as health, gender, sport and exercise, body medication, disability or growing old. Just as embodiment emerges from activity and practice (what a body can do), so does a sense of self (Fox 2012: 80)

Taking action, on the other hand is an opening up to becoming, and evolving, making the decision to move forward wherever it might lead. It does not presuppose a particular destination or an end goal. Participants’ descriptions captured this idea of openness and emphasis on taking action, as the following excerpt where Bryony describes what being healthy meant to her:

... [it’s] an absence of symptoms, but it’s also just a general state of mind. So it’s my body being able to move freely and do all the things I need to do in a day; and it’s my mind being happy, bright, and alert and me having energy So that’s healthy (Bryony/VB) [underlining added for emphasis]

Numerous studies have documented the importance to overall wellbeing of being able to maintain activities which allow people to participate in society in the way they choose (Mammen & Faulkner, 2013; Teychenne et al., 2008; Warburton et al., 2006). If illness and disability, or even fear of it, can deterritorialise a person's sense of self, then taking action in the way the participants had done was a process of reterritorialisation. This is not to suggest that participants found their health problems magically 'cured' – though certainly some reported improvements - but rather that they gained a sense of control and coping, allowing them to face whatever might lie ahead in the future.

Moving outwards from any blockage and 'reterritorialising' seemed to infuse participants with new energy, determination and a sense of purpose, a feeling of being "creative rather than reactive to meet their real (not symbolic) needs" (Fox & Ward, 2008: 1008). Their accounts focused almost entirely on what they believed the supplements had allowed them to *do*, rather than expecting to find a perfect cure from whatever physical condition they had:

... I've got arthritis, mainly in my thumbs I've been on these for ages – glucosamine with chondroitin and it's the chondroitin that helps. When I'm only on glucosamine I need more. And that has kept it at bay. It's amazing actually, combined with the fish oil.... Well I'm 63 and I feel young and I want to be young for my grandchildren. I've got two grandchildren now, so doing what I'm doing, is allowing that to happen. (Sally)

Sally's comment indicates that she feels she is moving into the future with confidence that she will be able to evolve with her grandchildren. Another participant, Vonnie, similarly spoke about the supplement she took now and again for her low mood had "*helped me through some really rough patches*". The way she phrased it suggests a sense of movement, overcoming a barrier and an increase in confidence that she can move on and cope with what may come. For both Sally and Vonnie, their supplement use seems to have become be part of their identity, incorporated into how they see themselves and how they wish to be seen by others, in the same way that pharmaceuticals may be for those who rely on them as an enabler to participating in everyday activities (Dew et al., 2015). It was clear from talking to these participants that though they were optimistic, they were also realistic. Their focus was much more about keeping their problem "*at bay*", so that it did not cut them off from whatever opportunities they might come across in the future.

Deleuze and Guatarri argued that the root of a person's identity was in the dynamic interaction between the social context and "... the affirming, creative, and embodied

experimentation/engagement of the living body the sum of psychological, emotional and physical connections that a body has (Fox and Ward 2008: 1008). Many of the participants clearly enjoyed being creative in all sorts of ways, experimenting and improvising, not simply in trying out supplements and other alternative health care options, but in other areas of their lives as well. None illustrated this more vividly than Duncan's account of his diverse experiences. He had a thirst for experimentation and although he grew up in a somewhat unconventional family who already used alternative health modalities, as a young adult he wanted to explore horizons beyond what he already knew:

... out of curiosity [I] went into other things ... to see what was out there and how it worked. I wanted to try a bunch of different healers to see which one I liked and see what I would potentially be interested in ...I got hypnotherapy ... I've done all sorts of things.

Duncan's adventures took him to Peru to visit a shaman and take ayahuasca, as I have already described, but that was only one of many lines of flight through diverse modalities, therapies and alternative products that he experimented with. He had briefly been involved with network marketing, and had enrolled in various courses in modalities that interested him. He had touched on Chinese medicine through an acquaintance, experimented with body building supplements as well as herbals, and dabbled in reiki. Tracing Duncan's narrative, was a verbal representation of a rhizomatic network in the process of becoming; a heterogeneous mix of connections with many people, things, sources of information, therapies, world views on health and illness, various countries he had lived in or passed through and jobs he had been engaged in. It traced his deterritorialisation and reterritorialisation both literally in terms of changing modalities, countries and employment, and figuratively in terms of his changing views. At the time I spoke to him he told me that he was tending towards a greater interest in and respect for orthodox medicine but still mixed in a range of other practices, such as using reiki to calm his young son, and was clearly still evolving his ideas and practices as he accumulated more life experiences.

A number of other participants echoed this theme of "experimentation in the world" (Holland, 2013: 34). Far from being the earnest people portrayed in the academic literature as 'worried well', they seemed to find it engaging and fun to explore various products and therapies that they came across. Pat, Tessa and Molly all commented directly that they enjoyed experimenting with a range of alternative options, and many others recounted the different products and therapies, both orthodox and alternative that they had come into contact with and tried. Rana

related her experience with a product that had not worked out for her. It appeared to be from a network marketer rather than bought over the counter from a pharmacy or health store:

...there was somebody that was selling them. I can't remember the name of the product but they were selling supplements and I tried them and what happened was I ended up getting more migraines. So I stopped taking that particular brand and then I went and I bought some evening primrose oil. It would have been from the health food shop. (Rana)

She was undeterred by the failure of the first product and pleased she had learned from the experience. Similarly, Tessa also spoke about experimenting with products, in her case homeopathics, some that she had bought herself and others that she had prescribed by a homeopath. Although she considered them to have been harmless, she believed they had been a waste of money in her case, and not something that she would buy again: *"I don't think homeopathics work very well for me in general...I really don't think it's made much difference. The same with bach flower remedies."* The key factor in these experiences was that the participants continued to learn what suited them and what did not. They seemed unconcerned about 'failures'. In contrast to the ideas of health risk as something to avoid, covered in Chapter 5, these forays into new fields were more like counter-risk discourses (Casas-Cortés et al., 2008; Keshet & Popper-Giveon, 2018; Soane et al., 2010) that pushed boundaries and created new knowledge about products that suited them or not. They clearly viewed whatever element of risk there might have been as something they could control and felt comfortable, even enthusiastic about (Lyng, 2008). They spoke just as if it were a hobby or creative outlet, trying out new cooking styles, attempting new sports, or delving into different forms of art or music. In effect it was the same sort risk taking that Lupton and Tulloch (2002: 117) identify as self-improvement, that gives "movement and progression ... to the trajectory of one's life." Their 'failures' thus were not something that they regretted, but became a further step on the path to greater knowledge and their overall identity development

Conclusion

The sense of self and life-satisfaction that the participants appeared to have gained from their experiences with supplements is where all three aspects of this chapter come together and address the research gap identified in the introduction. At one point each of the participants had made a seemingly small decision to take (or sell) a product for a health concern, a decision which had its origins in the coming together of their internalised ideas of responsibility and the freedom to wield that responsibility. They had set their own terms as to when they would use

orthodox medicine and when they would use that freedom to resist its control and use alternative methods of health care they chose for themselves. Similarly, the same responsibility and freedom could be mobilised to participate in the commercial market to the extent that it suited them but resist being drawn in to its power. Because they were also well connected to other areas of the modern neoliberal economy they had been able to use economic and technical means to experiment with what supplements and alternative therapies they found useful and so were continually developing expertise in the way they chose to care for themselves. This ongoing process was contributing to their sense of self through the bringing together of the many inter-related connections within the assemblage around the activities they enjoyed participating in, which were in turn enriching their feeling of meaning and purpose as they moved on with their life journey.

This chapter draws to a close the analysis of the data generated in the interviews with the study participants. The chapter that follows moves on from the participants and draws from the wider assemblage of ideas developed from all three analysis chapters to discuss what they add to a new understanding of people's engagement with practices around supplement use.

Chapter 7: Concluding discussion

Supplement practices: the intra-action of discourse, materiality and power

This study set out to investigate how people make sense of their supplement use; to explore what they say about the products they take and to develop a greater understanding of how and why they had come to use them. The aim was to focus on supplement use as a practice in its own right, rather than to view it as just another one of the broader range of complementary and alternative (CAM) therapies or to provide an answer to the criticisms of orthodox medicine about supplements and those who use them. However, these issues have been taken into account at times when the data were directly relevant to them. The methods for the study were primarily humanist; that is, the data were generated in interviews with participants. As the study progressed, however, it became clear that the material products of the supplements were also important and that they needed to be recognised as having a force of their own rather than being treated as inert matter of incidental relevance only (Coole & Frost, 2010). The methodology and analysis, therefore, have incorporated a broadly post-humanist approach so as to give due weight to the material presence of the supplements. I have taken the view in this study that non-human ‘things’, are always culturally and socially produced (Coole & Frost, 2010; Jackson & Mazzei, 2012) just as the knowledge and practices of their users are deeply entwined in materiality. Moreover, that the practices that result from this co-production of the human and non-human have the power to influence not only individual lives, but also wider social, cultural, commercial, and regulatory discourses, relationships, and activities.

Assemblage thinking using Deleuze and Guattari’s metaphor of the rhizome (1987) has been used throughout the analysis. The concept of the rhizomatic assemblage reveals the messy tangle of interconnected and competing actants that are involved in supplement use and the way that they constantly form and reform in temporary arrangements: material things, people, discourses, relationships, social, political and economic concerns, technologies, and power. So that the reason why any individual uses supplements is likely to be interwoven with a complex network of actants that come from their background and upbringing, their life experiences and current world view, personal connections, social interactions and discourses, commercial transactions, previous contacts with orthodox health services, and information acquired through the global and local media (Gubbi et al., 2013; Zanella et al., 2014). Supplement users are not outside the assemblage, ‘pulling the strings’ but are themselves actants within the complex and constantly evolving network. They act but are also acted upon by the multiplicity of

components, and while their actions add to its complexity and richness, they themselves are also enriched and changed in an ongoing process, experimenting with what they are now and what they might become (Fox 2012: 99).

Within the overall concept of the evolving rhizomatic assemblage, the three analysis chapters focused in turn on a particular set of actants that addressed the research gaps identified in the introduction. Each chapter drew on different theoretical concepts to examine the multiple connections between them in the light of the data. Chapter 4, focused in depth on popular discourses about supplements. Using Derrida's ideas of deconstruction, naturalness, holistic health, and health risk were examined in turn, shown to be contested and diverse, yet rather than losing their overall salience, the complex nuances of these discourses added exponentially to the interconnections that took place between them and from which the participants drew. Chapter 5 foregrounded the physical matter of the supplement products. Using Bennett's concept of 'thing power' it demonstrated how the non-human and human interacted to create effects that spread out far beyond the actions of individuals. Chapter 6 then looked at issues of power drawing from Foucault's notion of biopower and its manifestation in the modern neoliberal state. It showed how supplement users were bringing together their views on responsibility, the material products of supplements, the freedom of the market, and their access to global information to develop an identity as experts in their own health. All three chapters demonstrated how the ongoing interaction between the various actants in the assemblage gave rise to continual change and development.

Discourse, materiality and power, though examined separately in the analysis chapters, come together in this final chapter. I have found that these three aspects are deeply and inextricably entangled together in the way supplements and supplement practices are manifested in the world. Each of them is necessary but none is sufficient on its own to understand how people make sense of their practices with supplements. By taking all three into account together, I believe a different and potentially more comprehensive understanding of what supplements do for those who use them is produced. This is the principal result of my research and I believe it opens up a new way of thinking about supplements and those who use them. I stop short of calling it a definitive 'finding'; the theoretical framework of the rhizomatic assemblage of actants would appear to preclude any such absolute conclusion. Instead I describe it as revealing new insights into the possibilities that supplements create for those whose lives are entangled with them. Seeing supplements in this way gets beyond the previous approaches which do not appear to have considered these three forces in combination.

To further explain how I believe these three aspects to be co-constituted in the many ways that supplements are used and understood I have turned to the concept of intra-action proposed by Karen Barad (2007). Barad's ideas originated from her work in quantum physics, but she came to apply them more generally to the ordinary events of daily life. Barad's key concept is her insistence that:

Matter and meaning are not separate elements. They are inextricably fused together, and no event, no matter how energetic can tear them asunder (Barad 2007: 3).

Therefore all phenomena, as the results of this fusion are termed, are contextual rather than absolutes, brought about by what Barad terms *intra-action*, that is, the mutual entanglement of both the "human *and* non-human, material *and* discursive, natural *and* cultural factors" (Barad 2007: 26) [original emphasis]. The most crucial point about intra-action is that it is more than simply an inter-connection where the connecting bodies (whether human or non-human) retain their separate identities:

...in contrast to the usual 'interaction', which assumes that there are separate individual agencies that preceded their interaction, the notion of intra-action recognizes that distinct agencies do not precede but rather emerge through, their intra-action (Barad 2007: 33).

So when bodies *intra-act*, they come together to produce something quite new and different that emerges from "within the relationship rather than outside it" (Kerr et al 2014). The phenomena that come into being through intra-action are temporary, existing for that moment only, and each of them is just one of an endless array of possibilities that are always ongoing. They are "forever being reenfolded and reformed" (Barad, 2007: 177), brought into being by "different agential cuts that materialize different phenomena" (Barad, 2007: 178). The 'agency' here is the action or the 'doing' of the process, an enactment that "reworks [or 'cuts' together] what matters and what is excluded from mattering" in that moment (Barad, 2007: 178). The concept of agential cuts is a way of conceptualising how these differences are made or unmade depending on how the various components of matter and meaning, nature and culture, human and non-human are 'cut together' (or entangled) through intra-action to bring about the different events, actions, things, and ideas that go to make up the world as we know it. Interestingly, Barad credits Foucault's concept of the disciplined subject as a co-production of bodies, knowledge and power as prefiguring her ideas of intra-action, but considers that something more than biopower is now needed to account for "contemporary technoscientific

practices which provide for a much more intimate, pervasive and profound reconfigurings of bodies, power, knowledge” (Barad 2007: 200).

I chose to use Barad at this point in addition to Deleuze and Guattari’s overarching concept of the rhizomatic network of actants, because I found that the concepts of intra-action and agential cuts enabled me to better understand the way that discourse, materiality and power come together in a such a variety of combinations to produce the multiple phenomena of supplements and their use. I viewed these concepts from Barad as building further on the idea of the rhizomatic network (at least as I understood it), where the nodes, shoots, and lines of flight, though tangled together, seemed to be *inter-connected* rather than engaged in creating new phenomena. Fox and Alldred (2017: 26) also appear to make this distinction between Barad and Deleuze and Guattari, writing that the latter “consider how the physical and cultural assemble together to produce bodies, social formations and events.” While something akin to intra-action may be *implied* by Deleuze and Guattari (1987), or at least not ruled out, Barad’s ideas appear to be arguing for something beyond simply ‘assembling together’. Assembling, suggests, to take an example from the very practical world of food preparation, a salad of greens, tomatoes, cucumber and capsicum tossed together in a bowl. While they are interconnected – or assembled together to make the salad - the individual pieces retain their identity and can be picked out again, perhaps if someone dislikes the cucumber. A cake or custard, on the hand, is a result of intra-action; an entirely new ‘thing’ which cannot be disassembled into the parts from which it has been co-constituted.

Barad’s concept was also helpful for me in bringing a more practical focus to Deleuze and Guattari’s rather abstract philosophy (Jackson & Mazzei, 2012: 111). She has applied intra-action to specific contemporary issues in technology, science, education, politics, and gender and given useful concrete examples: the material-discursive enactments that produce ultrasound images, for instance, or the ‘the worker’ in a factory (Barad 2007: 243). The concepts of intra-action and agential cuts therefore seemed to illuminate the myriad of diverse phenomena of everyday life which are mostly taken for granted, as described in the food preparation example above. They seemed therefore to be directly relatable to the apparently mundane actions of buying, selling, and ingesting supplements.

Turning to Barad, however, did not mean setting aside the other theoretical concepts I had used but seeing them all as complementing one another. All of them are consistent with the ideas of fluidity, change, the rejection of fixed divisions and categories, and the recognition that

competing elements exist within all unities, even those that appear entirely coherent (see Barad, 2010: 176). Barad and Deleuze and Guattari all understand the world as being in a constant state of continual, but non-linear evolution; Barad uses the term dynamic, whereas Deleuze and Guattari (1987: 27) write about “a stream without beginning or end.” Both include the idea of randomness in the way this evolution happens; Barad describes unexpected happenings as contingent, while for Deleuze and Guattari they are the lines of flight. Derrida does not focus directly on the non-human, but insists that there are no fixed states and bounded entities (1997), and Bennett writes of the dynamic agency of material things that while not intentional, is “bound up with the idea of a trajectory, a directionality, a movement away from somewhere, even if the toward-which it moves is obscure or absent” (Bennett 2010: 32). Foucault’s genealogical approach also sees “history in terms of an ongoing chaotic struggle between different forces and between different levels - or patterns – of time” (Danaher et al., 2000: 101).

These ideas underpin the discussion that follows. In the first section, I show how different agential cuts materialise the multitude of different phenomena that are enacted around supplements and supplement practices. I look not just at the products themselves and the people who use them but also at the phenomena that constitute their manufacture, promotion and sale, regulation, and the counter-discourses about them. The second section then returns to focus on the supplement users and the core aim of the thesis; to provide new insights into why and how supplement users make meaning from their practices. The chapter, and the thesis, concludes with final comments on the contribution of supplement practices to the ongoing life journey, and how they link back to ancient themes of the quest and the substances that strengthen and fortify those who pursue it.

[Supplement practices: entangled phenomena](#)

Drawing from Barad’s concept of intra-action, supplements and supplement practices can be seen as series of never ending temporary phenomena, constituted from the entanglement of elements of materiality, discourse and power in different agential cuts. I start the discussion here with the entangled phenomena of personal supplement purchase and ingestion, as they were the original inspiration for the thesis. These are the spontaneous or deliberate decisions people make, the purchases they conclude, and the products they ingest, all of which emerge from the intra-action of the human and non-human actors. Each individual action may seem unremarkable on the surface, yet every one is the end result of a chain of complexities which has brought together a product (matter), the surrounding context of the individual’s beliefs about

the product (discourse and meaning) and capabilities that allow them to control how and where they obtain and use the material products (power). Moreover each enactment is unique to that moment, depending on the particularities of the individual's needs, the product they are taking at that point, the technologies and sources of supply through which they have learnt about and obtained it, their personal history, relationships, world views, and their expertise and knowledge of options for managing their health. All these and more are entangled together in an agential cut that "reworks what matters and what is excluded from mattering" at that particular moment (Barad 2007: 177). The moment is both in and outside of linear time in a dimension Barad calls "spacetime mattering" (2014: 176). So while it is taking place in the here and now, each agential cut carries within it different memories, habits and meanings of the past as well as expectations and hopes for the future (Neale & Flowerdew, 2003), all bound together in a "thick web of specificities" (Barad 2014: 176) that come together in that momentary enactment.

A different entanglement occurs where personal supplement use merges with commerce in the assemblage around supplement users who also enact an identity as user-sellers. They may embrace this role with enthusiasm if they believe in the material products they sell and see themselves as helping and guiding others or enact it somewhat reluctantly if they see it as peripheral to their core role, for example in a pharmacy. Whatever their underlying attitude, however, they enter a space that brings into being the "marriage of pragmatism and idealism" (Bardaglio, 2005: 18) that goes to make up entrepreneurship. Even those who deal reluctantly with the commercial side of selling and are motivated primarily by idealism and a desire to help others, are pragmatic enough to know that meeting the customer demand for supplements is necessary to maintain the viability of their business in a competitive market. While a certain amount of selectivity may take place among user sellers when talking about their work, with most highlighting the ideological aspects and downplaying the commercial side, it is too simplistic to see them as being driven solely by self-interest (see Lewis, 2019). Rather their activities are a co-production of matter and discourse "laced together in an entrepreneurial entity that maintains its overall integrity" (Jones et al., 2008: 330) in the context of the neoliberal economy that values activities that promote innovation and growth (Herrick; Morrison, 2000: 68), and encourages citizens to be entrepreneurs of the self (Foucault, 1988).

These personal practices, however, are not the only way that elements of discourse, materiality and power come together around supplements. The production and marketing of supplements too, from large corporations to small niche companies can also be seen as a series of material discursive phenomena where the raw materials that make up the products, the technical

processes, data analytics, the human shareholders and staff are all brought together. All these can be cut together with discourses of profit making and commercial power to confirm the company's viability to the share market and wider business world, or alternatively be presented through idealistic discourses of health and wellbeing to market products to the public. While not all of these phenomena will succeed in their aim of profitability and may sometimes fade out, the overall co-production of commerce, technology and discourse is never static but simply moves on to a new iteration (perhaps leaving the retailer to unload those surplus products). Loyalty cards, for instance, are a perfect example of the intra-action of matter and discourse which brings together the material products, a range of discourses about cheaper prices, good value, and rewards for repeat business for the consumers. The same discourses and products are cut together in another way for the product companies and their shareholders that results in power to amass the personal details and buying habits of card holders to track sales and create data to support future promotions and product developments.

The products themselves can also be seen as phenomena emerging through intra-action of meaning and matter. A single material product like echinacea or olive leaf, for example, can perform as a natural-simple-safe 'thing', an ethically produced sustainable thing; it can enact a story of historical use in traditional societies, or a story of modern technology that has found a new way of extracting it in a more concentrated form or combining it with other products for a novel or more powerful effect. Other products offer the reassurance and support of a being a 'helping-hand', calming stress, or 'managing' blood sugar. Equally they can be constituted to offer vitality and energy, or bargain prices and value for money. Nor do these individual phenomena necessarily have inner coherence, but may be co-constituted from contradictory elements. Take for example, the obvious discordance between the heavily promoted 'natural' aspects of the products and their manufactured capsule or powdered formats and packaging. Whichever way that the differences are brought together, however, they keep (be)coming, a constant stream of products that combine matter and meaning in a seemingly endless variety of combinations that fit with the discourses of the moment.

At the same time, however, other phenomena materialise to resist the 'things' that are produced by the commercial supplement producers, and continually push back against their power. These come not only from orthodox health care and regulatory authorities (discussed below) but also from the co-production of discourses about consumer rights, the purchasing power of consumers, and the learned experience of operating in the modern neoliberal economy, which, after all, exists on a much wider scale than the supplement market alone

(Izberk-Bilgin, 2010; Mejri et al., 2012; Ulver-Sneistrup et al., 2011). The supplement companies, on their part, are well aware of scepticism and resistance that exists around their products and take pains to understand and develop strategies to counteract it (Amawate & Deb, 2019; Elving, 2013; Mimouni Chaabane, 2016). In this way, the push-pull of supply and demand, cost and value are constantly moving material-discursive enactments that bring together bodies, discourses, material products and power. None would come into being without the others; if there were no discourses, the products would have no place or meaning, and without the products, there would be nothing to discourse about and nothing over which to assume power.

The policies and regulations around supplements, too, are worthy of attention as an area where discourse, matter and power intra-act to produce supplements as legitimate or not, and therefore freely accessible or not to consumers. Supplements are valuable economically within an economy that promotes growth in the sale of material things even if they are incompatible with the advice recommended by orthodox health experts. They therefore continue to be produced as (mostly) legitimate items in the policy and regulatory world, depending on the particular bodies that hold the power of decision-making about them. Melatonin, is one example of a product that may be freely sold over the counter in the United States for promoting sleep and reducing jet lag, but is restricted to being prescribed by a doctor or pharmacist in New Zealand and for certain ages and conditions only (Medsafe, 2018). The same kind of variable differentiation takes place within orthodox medicine itself in a number of situations. Products may be approved 'evidence-based' entities if prescribed by a health professional exercising the power vested in them (Bjelakovic et al., 2014) but cut apart from legitimacy as 'alternative' and 'risky' if sold or used without medical direction (Geyer et al., 2008; Sarino et al., 2007; Stickel et al., 2009; Werner, 2014). Alternatively, they may be enacted as legitimate or not over time. The status of calcium supplements, for example, which were commonly prescribed as bone strengthening medicinal products for menopausal women at one time, has been called into question, with the risk of engendering adverse cardiac events now said to outweigh any benefits they might have (Li et al., 2013; Reid et al., 2015; Zittermann et al., 2011). On the other hand, a form of glucosamine and some probiotic supplements now appear to be hovering on the cusp of being legitimised treatments rather than their previous status as non-effective supplements (AGA, 2019; Kucharz et al., 2016). Evolution across time in the way particular substances are produced as suitable or unsuitable for the public is nothing new. Throughout the history of medicine from blood-letting and leeches to cocaine, laudanum and tonics (Crellin, 2004) matter and discourse have been cut together in different ways to enact

medicinal treatments as legitimate or not. These examples serve to demonstrate that not only in the world of supplements, but across the entire world of health care, there is constant fluidity in the way medicinal substances are enacted; nothing is fixed and permanent, but always evolving and changing. And, while “intra-actions always involve particular exclusions...possibilities aren’t narrowed in their realisation; new possibilities open up as others are excluded” (Barad, 2007: 177).

This fluidity also applies to the intra-action of matter, discourse, and power in the ongoing critique of supplements and their users by orthodox medicine. While the focus of the study was to explore supplements in depth rather than to answer the objectivist-realist arguments about ineffectiveness and lack of evidence, it would seem incomplete not to raise these issues at all, particularly as it was partly the nature of the oppositional discourses about supplements that sparked my original engagement with the topic. Moreover, these discourses are well rehearsed, frequently appear in the popular media and were raised, unprompted, by many of the study participants themselves. Lewis (2019) has discussed the concerted efforts of a particular group of actors in Australia through the use of media releases and other material-discursive enactments to produce all complementary and alternative practices (CAM) in Australia as illegitimate. Although Lewis (2019) does not overtly take a post-humanist stance, her critique highlights the way these statements about alternatives tend to be presented as a truth that is “altogether natural, self-evident, and indispensable” (Foucault, 1991: 75). Her analysis shows, however, that the arguments have also evolved and changed over time, gradually moving away from discourses about the potential harm and ineffectiveness of supplements to focus on those that see them as being driven by commercially motivated global businesses that are exploiting a naïve public taken in by slick marketing.

By “foregrounding rather than bracketing” (Mauthner, 2015: 327) the concerted campaign of this particular group of Australian actors to issue press releases and other statements that support their viewpoint (Lewis, 2019), the same process of material-discursive intra-action can be seen to be taking place. The material products (supplements), assertions of power through professional knowledge and control over health treatments, and discourses of commercial self-interest and problematisation of lay claims to understand their own health are brought together in a series of agential cuts that materialise supplement use as a baffling and frustrating phenomenon to health professionals (Guallar et al., 2013; Lewis, 2019; Ronda et al., 2009), or, at times, as a purposeful undermining of expertise developed through professional training and practice in the prescribing of medicines (Barnes et al., 2016; Guallar et al., 2013). For even

though groups of health professionals may disagree over inclusion or exclusion of a particular treatment or who should be credentialed in a particular sphere of practice, they are nevertheless all part of an assemblage that has a common philosophy based on the currently accepted form of scientific knowledge that may be mobilised for patient care (Lamont & Molnár, 2002). Supplement users, however, are enacting their own material-discursive practices resulting from different agential cuts in the assemblage of actants. As Jackson and Mazzei (2012: 126) point out, multiple becomings can result from intra-action, not only between different groups of people (for example the health professionals and supplement users described above), but there is a multiplicity of becomings for every individual as well. As Barad puts it (2010: 176) “each moment is alive with different possibilities for the world’s becoming and different reconfigurings of what may yet be possible”.

Many supplement users do ascribe a range of physical, mental, and spiritual effects to the products that they take and relate these to their overall health and wellbeing. While these effects are clearly meaningful to those who report them, others note that they continue to take products even if they have no idea if they ‘work’ or not, suggesting that the meanings that matter lie elsewhere. For supplement users, the question is not about bioavailability or any other physiological explanation of how the products work (Wahlberg, 2008), but rather what they *do* for those who use them, what that means, and why it matters. Thinking about supplements in this way cuts across the rival epistemologies of realism and constructionism and focuses on the “dynamic, generative and rhizomatic production and actualisation of the world in which both matter and meaning play a part” (Fox and Alldred, 2017: 26). The next section, therefore, examines the meanings that may be produced from intra-action in the supplement assemblage and how these become woven in to their users’ continuing quest for a meaningful life.

Meaning, matter, ritual and symbolism

What makes a meaningful life is one of the ‘big questions’, perhaps *the* big question; it has been endlessly explored since antiquity in philosophy, literature, the arts, and science and continues to be the subject of fascination in contemporary times. Tolstoy, Socrates, Camus, among many others considered it to be the ultimate philosophical question (Martela & Steger, 2016: 535-536). If we do not believe our lives are meaningful then we may feel that everything we do is simply displacement activity until we die, or in Shakespeare’s words, “a tale told by an idiot, full of sound and fury, signifying nothing” (Macbeth V:V). Discussions of what makes for a

meaningful life often begin by referring to Aristotle's concept of eudaimonia, a word made up from the Greek *daimon* being the 'true self' and the prefix *eu* meaning 'good' or 'well' (Waterman, 1990). Eudaimonia has been interpreted in a variety of different ways by philosophers and psychologists, but all of them convey the idea of a continual striving after what an individual perceives as being the most desirable and truly worthwhile kind of life (Bauer et al., 2008; Baumeister et al., 2013; Deci & Ryan, 2008; Hardie, 1979; Martela & Steger, 2016; Nagel, 1972; Ryan et al., 2008; Ryan & Martela, 2016; Ryff, 2012; Ryff & Singer, 2008; Waterman, 1990). Qualities that have been proposed as contributing to eudaimonia have included coherence, autonomy, self-understanding, competence, relatedness and existential mattering where mattering is "transcending the trivial" ..., [and feeling] "that one's actions make a difference in the world" (Costin & Vignoles, 2019: 2). As this variety of explanations demonstrates, eudaimonia eludes any precise definition. Perhaps its greatest strength is its openness to be interpreted as Derrida would have it, in different ways (*autrement*) (1997: 77), according to the complexities of the personal, cultural, and societal contexts and relationships which differ for every individual. Nevertheless, there are two consistent ideas that can be drawn from the concept of eudaimonia: firstly, that it involves living in a way that feels personally meaningful and true to oneself, whatever that might be, and secondly, that living meaningfully is continually being enacted, a process of becoming, not a state that can be achieved once and for all.

Religious belief has traditionally provided a way of making meaning from the joys and vicissitudes of human life and reducing uncertainty about our purpose for being in the world (Emmons, 2005; Hogg et al., 2010; Krause & Hayward, 2012; Park, 2005; Park et al., 2013) but religious belief, at least in established religions has declined in the modern age (Gorski & Altınordu, 2008; Houtman & Mascini, 2002). A large number of people in Western countries hold to rationalist beliefs that exclude any notion of life after death (García & Blankholm, 2016; Manning, 2016; O'Brien & Noy, 2015). New Zealand in particular is said to have an identity as a "pre-eminently secular country" (Matheson, 2006: 177). If we are no longer living on earth as preparation for a life in some kind of divine hereafter, we are left with the need to find some other way to come to terms with the existential anxiety that is generated by the awareness of our own mortality (Hoeltherhoff, 2015; Marino & Mountain, 2015; Varki, 2009), and a longing to find an explanation for "our birth, our death, and the pain of the journey in between" (McCormick, 1996: 620).

Alternatively, the absence of a belief in a life after death may instead inspire a determination to make the most of the life we have, exploring all the opportunities that offer to make it

meaningful (Hoeltherhof, 2015). Physical or mental illness, however, can creep up slowly or arrive dramatically and reduce or close off possibilities and hopes for the future (Bury, 1982; Locock et al., 2009; Sanders et al., 2002; Sinding & Wiernikowski, 2008). This dilemma of theoretical freedom to live fulfilling lives but only if we can ward off the bodily constraints of illness or disability, has become more pressing with the extension of longevity since the mid-20th century (Carey & Judge, 2001; Kinsella, 2005; Kraai et al., 2013). Advances in medical care over the past half century have made it possible for people who would otherwise have died in previous eras to live longer and better than at any time in history (Gawande, 2014). Modern medicine has tended to promote the idea that everything can be ‘fixed’ by following guidelines for a healthy life, and submitting oneself to the care and guidance of health professionals who will ensure that health problems are identified, treated and ‘managed’ (Fishman et al., 2008; Lamb, 2014; Mykytyn, 2006). Research studies lend their weight to the same assemblage of optimistic discourses of ‘longeism’ (Dumas & Turner, 2015) by demonstrating incremental gains in survival for particular drugs or interventions (Berger et al., 2011; Prinz & Endres, 2011; Wald & Wald, 2012). There have even been suggestions that the normal life span can be almost indefinitely extended with the assistance of ‘regeneration medicine’ (Lafontaine, 2009, 2015), including strategies such as genetic manipulation and the availability of computer printed organs and other body parts (Dumas & Turner, 2015; Katz & Gish, 2015). As Crawford (2004:505) argues, death itself has been deconstructed into innumerable specific causes against which “a technical war – a spiritual war in fact – must be waged.”

In contrast with these discourses that appear to promote an endlessly positive future, the same medical advances have also created a continually growing number of people who may be alive, but are also chronically ill, unable to carry out daily activities as they would wish, and sometimes also cognitively impaired (Bähler et al., 2015; Lafontaine, 2015; Lehnert et al., 2011). Moreover, those who have lost independence and agency, may become stigmatised as contributors to the ‘silver tsunami’ that is depriving current and future generations of their access to health and social services (Bartels & Naslund, 2013; Bluethmann et al., 2016; Bodker et al., 2019; Dumas & Turner, 2015; Hartt & Biglieri, 2018). It has become clear that simply extending the number of years of life may not be desirable if the quality of that life is more and more limited in scope, leading to social isolation and depression (Blakemore et al., 2014; DeJean et al., 2013; Duggleby et al., 2012; Earnshaw & Quinn, 2012; Liddy et al., 2014). It is this fear, the horror of ending up in a life without the agency to create ongoing meaning that would seem to underlie many of the fundamental urges that give rise to supplement practices.

Supplement users of all ages appear to have a keen feeling of uncertainty about their imagined future. While they do not seem to be fearful of death itself, many have already encountered the shadow of disability and appear to share a horror of being humiliated (Waskul & van der Riet, 2002) by the “precarious dependencies” (Bodker et al., 2019: 1358) that accompany the loss of physical and cognitive function leading to terminal decline and the final end-of-life cascade (Gerstorf et al., 2013; Rajan et al., 2012). They may have the beginnings of a chronic disease and are fearful of it worsening; they may have experienced long-lasting sports injuries, depression, or witnessed someone they love dwindle and deteriorate slowly and have resolved to avoid the same fate. Even if they are in the best of health now, and are proactive about maintaining their healthy status, somewhere in the past, they have become aware that at any time their body has the potential to turn on them and betray them. Minor and “mundane exposures” (Hoelterhof, 2015: 1) can trigger anxiety that the body which they had commanded at will, might turn on them and let them down, or as Kristeva (1982: 4) has so pertinently put it, become “the friend who stabs you.” Kristeva’s concept of the abject (1982) is a useful way of conceptualizing the horror that supplement users seem to sense of ceasing to become, being “excluded from the rhythms of daily life, [experiencing] a pitiable loss of personal control and social agency” (Gilleard & Higgs, 2011: 139). For what use is a longer life if it is merely an existence without the possibility of meaning, purpose and enjoyment? Being abject in this way is repugnant, loathsome, defiling; it is something that needs to be “thrust aside in order to live” (Kristeva, 1982: 3). But once the thought is recognised, it seems that it can never quite be banished:

In the heartlands of non-disability the abject is a cause for concern because it is too close for comfort...Repressed, denied but lurking, hovering, whispering barely audibly from some liminal place in the recesses of the imaginary... it is the stranger that we despise but fear we might become (Hughes, 2009: 405,406).

Moreover, because health and morality are so intertwined (Brandt & Rozin, 1997; Conrad, 1994; Crossley, 2003; Metzl & Kirkland, 2010), there is an implication that ‘virtuous’ people will manage to fight off disease, overcome disability and achieve ‘successful’ ageing (Cosco et al., 2014; Geard et al., 2018; Lamb, 2014), while those who do not manage to do so have failed to take responsibility for themselves and are now paying the price (Agborsangaya et al., 2013; Lakerveld et al., 2013). Nevertheless, just as everyone must face death eventually, no matter how virtuous or responsible they have been about their health, so ultimately, everyone must, sooner or later, fail at the moral task of being healthy, for “there is no escaping the tragedy of life; that we are all aging from the day we are born” (Gawande, 2014: 8).

Rather than doing nothing and simply hoping that this will not happen, supplement practices are an outward and visible enactment each day that confirms for the users their responsibility and vigilance and symbolises their determination to defer disability and the stigma of moral failure. Their practices are a personally constructed and controlled form of ‘conduct of conduct’ through which they resist being drawn into the cul-de-sac of “patienthood” (O’Mahony, 2019: 1799) where they have no agency and decisions about them will be guided by ‘experts’ who will decide what is best. The daily ritual of taking the material products down from the shelf and swallowing them allows their users to continue their narrative in “the voice of the healthy” (Hydén, 1997: 62) who are able to look forward confidently to having power and control over their future. While these rituals may “bypass the frameworks of rationalism and functionalism” (Bell, 1990: 300), they nevertheless create effects. They provide certainty, meaning, and continuity to people’s lives (Horner, 2000; Markson & Fiese, 2000) and cannot be dismissed as irrational or merely placebos (Gale, 2014).

Rituals tend to be associated with religious practices and superstition, and therefore may be considered to have no place in the modern, scientifically-enlightened world (Quack and Sax 2010). Nevertheless, contemporary life is still punctuated with many kinds of normalised rituals, even if they are not recognised or described as such (Islam & Zyphur, 2009). The public rituals of state memorials and the quasi-religious rituals of competitive sport (Brevers et al., 2011; Hutchinson, 2009; Jackson & Baker, 2001; King, 2010; Schippers & Van Lange, 2006), the structured rituals of professional practice, for example, in law and medicine (Arluke, 2018; Parissopoulos et al., 2013; Robinson, 2001; Robinson, 2006) and the many personal and family rituals in the small activities of everyday life (Hammerschlag, 1997; Hannam, 1997; Morris, 2017; Thomson & Hassenkamp, 2008; Verma, 2013). In short, rituals bring structure, continuity and order into people’s lives on both a large and small scale:

Rituals are conscious, intentional and often repetitive bodily actions that attempt to impose meaning on one or other aspect of the worlda body acting out of what sort of situation one is in and what ought to be done about it. (Brody, 2010: 153)

Rituals across the many different areas of human experience can be seen as enactments, in which material things, discourses, and the power of meaning are brought together for those that enact them and those for whose benefit they are enacted. Not only do they involve material things – for example the wreaths of poppies at war memorials or the birthday cake at family celebrations - but they also draw on intuitive connections to modes of thought that are beyond scientific rationality. They have performative, aesthetic, and cultural components that go

beyond their cognitive elements, linking to the imagination, the unique meanings they carry for each individual and their placement both within and outside linear time (Wulf et al., 2010). Rituals connect to another dimension alongside the world of 'reality', where "rites and myths help people face the unspeakable ... to cope with the problematic human predicament" (Armstrong, 2005: 6), that is, the inevitable prospect that life ends in extinction and nothingness.

Supplement rituals can be seen in the same way, as a bringing together of discourse, materiality and power in rituals that enact personal, cultural and symbolic meanings which far exceed their mundane appearance and the simple act of swallowing them each day. The products themselves compel attention as projecting a certain type of power in which "symbolic images and gestures exercise a particularly persuasive effect on the participants' sense of identity and social reality" (Bell, 1990:299). The specially assigned spaces that containers of supplements occupy in people's homes also serve to point up their ritual agency. Almost always stored in the more private areas of the kitchen or bedroom rather than the rooms where guests are admitted and entertained, the supplement space is thus the site of a private daily 'devotion', but rather than the flowers, incense and prayers offered on other altars, the supplement ritual is an offering on the altar of personal responsibility that holds the hope of preserving the future from decline and decay. The ritual act of swallowing them may take place at a moment of linear time but also within the dimension of "spacetime mattering" described by Barad (2014:176). Bound up in the present action are the past events that have been continually evolving towards that point and the hopes and desires for the continuation of possibilities into an expanding future (Neale & Flowerdew, 2003: 193). Maintaining the ritual is a sign of a belief that by continuing to observe it, they will be able to "keep on keeping on" (Lundberg, 2019: unpagged) doing what they want to do and warding off disability and decay for at least another day.

Supplement practices can thus be seen as ongoing ritual enactments that help provide a sense of predictability and independent agency in users' lives as they seek to keep control over their health and avoid disruptions to the future they plan for themselves (Morden et al., 2017: 369). The difference between supplement users and others is that they have chosen supplements as their preferred method of assuming control over the risks they perceive as being the most relevant to their own context. Others may choose a different ritual, for example, the socio-material practice of surgical mask wearing in Japan as a "risk ritual" that acts as a "safety blanket" against the threat of illness and disease for the wearer (Burgess & Horii, 2012: 1193). Health rituals such as these have been interpreted as a symbolic way of ordering and gaining power over the "inherently untidy experience" of illness and disease (Williams, 1998: 449) and

calming “the escalating spiral of control and anxiety” Crawford, 2004: 506) that is generated by a contemporary culture that identifies more and more risks to health.

This is not to suggest that the supplement ritual is the central activity around which those who use them live their lives. It is rather a means to an end, something that allows them to defuse their anxiety about risks with confidence about the future and control anxiety over its uncertainty and to focus on other, more enjoyable and meaningful aspects of their life instead. By undertaking the supplement ritual each day, they can then feel they have ‘done something’ to deal with their concerns and can set them aside so they can get on with the activities and relationships which are meaningful to them as their life journey evolves in its continual ‘becoming’. The supplement enactments become an additional thread that is woven into and enriches their personal narrative as it evolves over time (Jones et al., 2008; Lindgren & Wåhlin, 2001; Morrison, 2000). They come to see themselves as being ‘someone who knows’ about these things (supplements and their effects), and can pass on what they know to others, hence the trajectory for some supplement users into roles where they advise others. McAdams and McLean (2013: 234) give seven examples of “life story constructs” that people use in identity stories. Of these, supplements users’ accounts of their experiences are strongly connected to constructs of agency (control over circumstances) and meaning making (learning something and gaining insight about their life). While the coherent accounts supplement users present may have been honed and smoothed through reflection and reconstruction over months or years by the time they are related to a researcher (McLean, 2008), they nevertheless identify events and experiences which the people telling their story have selected as being important and meaningful to them. Each of these stories, unique narratives by “self-conscious language wielding humans” (Bennett 2010: 120) provides insight into the way supplement users convey “...to the self and others, who they are now, how they came to be there and where they think their lives may be going in the future” (McAdams & McLean, 2013: 233). Supplements primarily appear in these accounts, as the ‘vital matter’ that has given them the power to overcome a hurdle, and thereby set off a chain of events, creating an intra-action between the non-human products, the many other actants in the assemblage and the world views of the individuals themselves. Moreover, the strength of the personal narrative is that it does not have a particular destination or foreseeable end but is always in process, open to the pursuit of many possible future meanings that might be made in the life yet to come.

Even at the most pragmatic and widely understood level of protecting and maintaining health, supplements are infused with meanings that link to ideas about the potential that the future

holds to engage in activities and experiences that an individual desires to pursue. Their supplements are enablers on the life quest, the journey in which individuals are their own 'hero' and through which they find meaning and purpose in their lives and build their identity narrative. For the life quest, whether in Greek mythology or in the 21st century, is a universal story whereby the protagonist gradually moves through life in a process of evolving and changing as they go, "becoming" in the Deleuzian sense. The transformational narratives that came from the discussions, echoed one of the universal themes from the hero's journey; the helping substance which gives the protagonist the power to resist and overcome difficulties, to be or do more than they could unaided (Applegate & Grivetti, 1997: 869S). Supplement users appear to have this sense of quest in their lives, not to reach the 'golden fleece' of Jason and the Argonauts, or the 'water of life' of Polynesian legend by doing extraordinary deeds. It is rather that their daily practices with supplements symbolise their continuing involvement "in the divine game" of existence" (Bearn, 2013:54) without coming up against the barriers of illness and disability that will stop them participating. Whether Odysseus in the ancient world, Alice and her adventures in Wonderland, or the modern day-to-day adventures of the 21st century citizen, the point is not necessarily the destination, but for the journey itself to be meaningful along the way. Supplements, like the magic potions or reviving waters of myth and legend are enablers to this end - the desire to pursue enjoyment, meaning and purpose in life, rather than to merely stay alive.

References

- Acker, C. J. (1995). From all purpose anodyne to marker of deviance: physicians' attitudes towards opiates in the US from 1890 to 1940. In R. Porter & M. Teich (Eds.), *Drugs and narcotics in history* (pp. 114-132). Cambridge: Cambridge University Press.
- Acosta, R. D., & Cash, B. D. (2009). Clinical effects of colonic cleansing for general health promotion: a systematic review. *American Journal of Gastroenterology*, 104(11), 2830-2836.
- Adewuya, A. O., & Makanjuola, R. O. A. (2008). Lay beliefs regarding causes of mental illness in Nigeria: pattern and correlates. *Social Psychiatry and Psychiatric Epidemiology*, 43(4), 336-341.
- AGA. (2019). Probiotics. Retrieved from <https://www.gastro.org/practice-guidance/gi-patient-center/topic/probiotics> Accessed 26.6.2019
- Agborsangaya, C. B., Gee, M. E., Johnson, S. T., Dunbar, P., Langlois, M.-F., Leiter, L. A., et al. (2013). Determinants of lifestyle behavior in type 2 diabetes: results of the 2011 cross-sectional survey on living with chronic diseases in Canada. *BMC Public Health*, 13(1), 451.
- Aghajanian, P., Hall, S., Wongworawat, M. D., & Mohan, S. (2015). The roles and mechanisms of actions of Vitamin C in bone: new developments. *Journal of Bone and Mineral Research*, 30(11), 1945-1955.
- Ahuriri-Driscoll, A. (2014). He kōrero wairua: indigenous spiritual inquiry in rongoā research. *MAI Journal*, 3(1), 33-44.
- Ahuriri-Driscoll, A., Baker, V., Hepi, M., Hudson, M., Mika, C., & Tiakiwai, S.-J. (2008). *The future of rongoā Māori: wellbeing and sustainability. A report for Te Kete Hauora, Ministry of Health*. Wellington: Institute of Environmental and Scientific Research and Ministry of Health.
- Alagöz, F., Valdez, A. C., Wilkowska, W., Ziefle, M., Dorner, S., & Holzinger, A. (2010). *From cloud computing to mobile Internet, from user focus to culture and hedonism: the crucible of mobile health care and wellness applications*. Paper presented at the Fifth International Conference on Pervasive Computing and Applications (ICPCA).
- Albert, B. B., Derraik, J. G. B., Cameron-Smith, D., Hofman, P. L., Tumanov, S., Villas-Boas, S. G., et al. (2015). Fish oil supplements in New Zealand are highly oxidised and do not meet label content of n-3 PUFA. *Scientific Reports*, 5, 7928.

- Albert, K. M. (2006). Open access: implications for scholarly publishing and medical libraries. *Journal of the Medical Library Association : JMLA*, 94(3), 253-262.
- Albertson, B. L. (2011). Religious appeals and implicit attitudes. *Political Psychology*, 32(1), 109-130.
- Ali, N., Lifford, K. J., Carter, B., McRonald, F., Yadegarfar, G., Baldwin, D. R., et al. (2015). Barriers to uptake among high-risk individuals declining participation in lung cancer screening: a mixed methods analysis of the UK Lung Cancer Screening (UKLS) trial. *BMJ Open*, 5(7), e008254.
- Alpass, F. M., & Neville, S. (2003). Loneliness, health and depression in older males. *Aging & Mental Health*, 7(3), 212-216.
- Amawate, V., & Deb, M. (2019). Antecedents and consequences of consumer skepticism toward cause-related marketing: gender as moderator and attitude as mediator. *Journal of Marketing Communications*, 1-22.
- Amos, C. (2014). "Natural" labeling and consumers' sentimental pastoral notion. *Journal of Product and Brand Management*, 23(4/5), 268-281.
- Andersen, H. (1996 [1930]). The Little Mermaid In L. Owens (Ed.), *The Complete Hans Andersen Fairy Tales* (pp. 140-145). New York: Gramercy Books.
- Anderson, J. (2009). Transient convergence and relational sensibility: beyond the modern constitution of nature. *Emotion, Space and Society*, 2(2), 120-127.
- Anderson, S. (Ed.) (2005). *Making medicines: a brief history of pharmacy and pharmaceuticals*. London: Pharmaceutical Press.
- Andreassen, H. K., & Trondsen, M. (2010). The empowered patient and the sociologist. *Social Theory & Health*, 8(3), 280-287.
- Annas, G. J., & Elias, S. (1999). Thalidomide and the Titanic: reconstructing the technology tragedies of the twentieth century. *American Journal of Public Health*, 89(1), 98-101.
- Anonymous. (2003). Deceptive marketing practices for dietary supplements halted. *FDA Consumer*, 37(5), 4.
- Anonymous. (2017). The century old immune booster. *Health 2000*(62), 11.
- Anonymous. (2018a). Detox support: nature's cleanser for your liver, lungs and blood. *Health 2000*(80), 6.

- Anonymous. (2018b). The 'safe' plastic you're microwaving could be just as bad as BPA. Retrieved from <https://www.stuff.co.nz/national/health/107071653/the-safe-plastic-youre-microwaving-could-be-just-as-bad-as-bpa> Accessed 5.7.2019
- Anonymous. (Undated). *Pro Vitality+: Daily nutrition for lifelong health and vitality [pamphlet]*. Fremont, CA: Neolife International.
- Applegate, E. A., & Grivetti, L. E. (1997). Search for the competitive edge: a history of dietary fads and supplements. *Journal of Nutrition*, 127, S869-S873.
- Aprile, M. C., Caputo, V., & Nayga, R. M. (2016). Consumers' preferences and attitudes toward local food products. *Journal of Food Products Marketing*, 22(1), 19-42.
- Arango-Kure, M., Garz, M., & Rott, A. (2014). Bad news sells: the demand for news magazines and the tone of their covers. *Journal of Media Economics*, 27(4), 199-214.
- Archer, E. (2015). The childhood obesity epidemic as a result of nongenetic evolution: the maternal resources hypothesis. *Mayo Clinic Proceedings*, 90(1), 77-92.
- Arluke, A. (2018). Social control rituals in medicine: the case of death rounds. In R. Dingwall, C. Health, M. Reid, & M. Stacey (Eds.), *Health care and health knowledge* (pp. 108-127). London: Routledge.
- Armstrong, K. (2005). *A short history of myth*. New York: Canongate.
- Armstrong, K., Weber, B., FitzGerald, G., Hershey, J. C., Pauly, M. V., Lemaire, J., et al. (2003). Life insurance and breast cancer risk assessment: adverse selection, genetic testing decisions, and discrimination. *American Journal of Medical Genetics Part A*, 120A(3), 359-364.
- Aschemann-Witzel, J., Perez-Cueto, F. J., Niedzwiedzka, B., Verbeke, W., & Bech-Larsen, T. (2012). Lessons for public health campaigns from analysing commercial food marketing success factors: a case study. *BMC Public Health*, 12(1), 139.
- Auger, M., Howell, T., & Gomes, T. (2016). Moving toward holistic wellness, empowerment and self-determination for Indigenous peoples in Canada: can traditional Indigenous health care practices increase ownership over health and health care decisions? *Canadian Journal of Public Health-Revue Canadienne De Sante Publique*, 107(4-5), E393-E398.
- Baarts, C., & Pedersen, I. K. (2009). Derivative benefits: exploring the body through complementary and alternative medicine. *Sociology of Health & Illness*, 31(5), 719-733.

- Bähler, C., Huber, C. A., Brüngger, B., & Reich, O. (2015). Multimorbidity, health care utilization and costs in an elderly community-dwelling population: a claims data based observational study. *BMC Health Services Research*, 15(1), 23.
- Bailey, R. L., Gahche, J. J., Miller, P. E., Thomas, P. R., & Dwyer, J. T. (2013). Why US adults use dietary supplements. *JAMA Internal Medicine*, 173(5), 355-361.
- Balamash, K., Albar, O., Wang, Q., & Ahmed, N. (2012). Effect of Kyolic® aged garlic extract on glycaemia, lipidaemia and oxidative stress in patients with type 2 diabetes mellitus. *Journal of Diabetes Research and Clinical Metabolism*, 1(18).
- Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Durham, NC: Duke University Press.
- Barad, K. (2010). Quantum entanglements and hauntological relations of inheritance: dis/continuities, spacetime enfoldings, and justice-to-come. *Derrida Today*, 3(2), 240-268.
- Barad, K. (2014). Diffracting diffraction: cutting together-apart. *Parallax*, 20(3), 168-187.
- Barber, R. (1991). *Pilgrimages*. Woodbridge, Suffolk: Boydell Press.
- Bardaglio, P. W. (2005). Sustainability thinking and entrepreneurship: a case study. *Peer Review*, 7(3), 18-20.
- Barnes, K., Ball, L., Desbrow, B., Alsharairi, N., & Ahmed, F. (2016). Consumption and reasons for use of dietary supplements in an Australian university population. *Nutrition*, 32(5), 524-530.
- Barrett, B., Marchand, L., Scheder, J., Plane, M. B., Maberry, R., Appelbaum, D., et al. (2003). Themes of holism, empowerment, access, and legitimacy define complementary, alternative, and integrative medicine in relation to conventional biomedicine. *Journal of Alternative and Complementary Medicine*, 9(6), 937-947.
- Barry, C. A. (2006). The role of evidence in alternative medicine: contrasting biomedical and anthropological approaches. *Social Science & Medicine*, 62(11), 2646-2657.
- Bartels, S. J., & Naslund, J. A. (2013). The underside of the silver tsunami - older adults and mental health care. *New England Journal of Medicine*, 368(6), 493-496.
- Bartocci, G., & Littlewood, R. (2004). Modern techniques of the supernatural: a syncretism between miraculous healing and the mass media. *Social Theory & Health*, 2(1), 18-28.

- Batavia, C., & Nelson, M. P. (2017). For goodness sake! What is intrinsic value and why should we care? *Biological Conservation*, 209, 366-376.
- Bates, B., Lennox, A., Prentice, A., Bates, C., & Swan, G. (undated). National Diet and Nutrition Survey: headline results from years 1, 2 and 3 (combined) of the rolling programme (2008/9-2010/11). A survey carried out on behalf of the Department of Health and Food Standards Agency. London: Department of Health and Food Standards Agency. Retrieved from: <http://www.natcen.ac.uk/media/175123/national-diet-and-nutrition-survey-years-1-2-and-3.pdf> Accessed 15.5.14
- Batra, R., Ramaswamy, V., Alden, D. L., Steenkamp, J.-B. E. M., & Ramachander, S. (2000). Effects of brand local and nonlocal origin on consumer attitudes in developing countries. *Journal of Consumer Psychology*, 9(2), 83-95.
- Bauer, J. J., McAdams, D. P., & Pals, J. L. (2008). Narrative identity and eudaimonic well-being. *Journal of Happiness Studies*, 9(1), 81-104.
- Baum, A. (1990). Stress, intrusive imagery, and chronic distress. *Health Psychology*, 9(6), 653-675.
- Baum, M. (1998). What is holism? The view of a well-known critic of alternative medicine. *Contemporary Therapies in Medicine*, 6, 42-44.
- Baumeister, R. F., Vohs, K. D., Aaker, J. L., & Garbinsky, E. N. (2013). Some key differences between a happy life and a meaningful life. *The Journal of Positive Psychology*, 8(6), 505-516.
- Baumol, W. J., Litan, R. E., & Schramm, C. J. (2007). *Good capitalism, bad capitalism, and the economics of growth and prosperity*. New Haven, CT: Yale University Press.
- Bayard, C. (2019). 16 cancer-causing foods you should avoid completely. Retrieved from <https://www.littlethings.com/cancer-causing-foods/> Accessed 11.12.2019
- Bearn, G. C. F. (2000). Differentiating Derrida and Deleuze. *Continental Philosophy Review*, 33(4), 441-465.
- Bearn, G. C. F. (2013). Yes and no. In *Life drawing: a Deleuzian aesthetics of existence* (pp. 18-66). New York: Fordham University Press.
- Beck, U. (1992). *Risk society: towards a new modernity*. London: Sage.

- Beck, U. (2000). Risk society revisited: theory, politics and research programmes. In B. Adam, U. Beck, & J. van Loon (Eds.), *The risk society and beyond: critical issues for social theory* (pp. 211-229). Thousand Oaks, CA: Sage.
- Beckwith, M. (1970). *Hawaiian mythology*. Honolulu: University of Hawaii Press.
- Beebee, H., & Sabbarton-Leary, N. (2010). *The semantics and metaphysics of natural kinds*. New York: Routledge
- Behuniak, S. (2011). The living dead? The construction of people with Alzheimer's disease as zombies. *Ageing and Society*, 31(1), 70-92.
- Bell, C. (1990). The ritual body and the dynamics of ritual power. *Journal of Ritual Studies*, 4(2), 299-313.
- Bell, I. R., Caspi, O., Schwartz, G. E. R., Grant, K. L., Gaudet, T. W., Rychener, D., et al. (2002). Integrative medicine and systemic outcomes research: issues in the emergence of a new model for primary health care. *Archives of Internal Medicine*, 162(2), 133-140.
- Bellosta, S., & Corsini, A. (2012). Statin drug interactions and related adverse reactions. *Expert Opinion on Drug Safety*, 11(6), 933-946.
- Ben-Ari, A., & Enosh, G. (2013). Power relations and reciprocity: dialectics of knowledge construction. *Qualitative Health Research*, 23(3), 422-429.
- Ben-Arye, E., Attias, S., Levy, I., Goldstein, L., & Schiff, E. (2017). Mind the gap: disclosure of dietary supplement use to hospital and family physicians. *Patient Education & Counseling*, 100(1), 98-103.
- Bennett, J. (2010). *Vibrant matter: A political ecology of things*. Durham: Duke University Press.
- Bennett, J. (2012). Systems and things: a response to Graham Harman and Timothy Morton. *New Literary History*, 43(2), 225-233.
- Benson, P. L., & Roehlkepartain, E. C. (2008). Spritual development: a missing priority in youth development. *New Directions for Youth Development* 118, 13-28.
- Berg, F. M. (1994). Herbalife--wealthy life. *Obesity & Health*, 8(2), 35.
- Bergé, A., Cladière, M., Gasperi, J., Coursimault, A., Tassin, B., & Moilleron, R. (2013). Meta-analysis of environmental contamination by phthalates. *Environmental Science and Pollution Research*, 20(11), 8057-8076.

- Berger, A. A. (2016). Narratives: Fairy Tales. In *Applied Discourse Analysis* (pp. 63-75). Cham: Palgrave Macmillan.
- Berger, J. S., Lala, A., Krantz, M. J., Baker, G. S., & Hiatt, W. R. (2011). Aspirin for the prevention of cardiovascular events in patients without clinical cardiovascular disease: a meta-analysis of randomized trials. *American Heart Journal*, 162(1), 115-124.e112.
- Berlant, S. R. (2005). The entheomycological origin of Egyptian crowns and the esoteric underpinnings of Egyptian religion. *Journal of Ethnopharmacology*, 102(2), 275-288.
- Bernstein, P. L. (1996). *Against the gods: the remarkable story of risk*. New York John Wiley and Sons.
- Best, E. (1951). *The Maori. Volume 1. [reissue of the 1924 edition]* Wellington: Polynesian Society.
- Bhattacharya, P., & Mehta, K. K. (2000). Socialization in network marketing organizations: is it cult behavior? *The Journal of Socio-Economics*, 29(4), 361-374.
- Bidwell, S., & Thompson, L. E. (2012). *The changing role of community pharmacy* Christchurch: University of Otago Department of Public Health and General Practice [Internal Report].
- Bidwell, S. R. (2011). *Talking about 1080: risk, trust and protecting our place. Thesis, Master of Public of Health*. Christchurch: University of Otago Christchurch.
- Biehl, J., & Locke, P. (2010). Deleuze and the anthropology of becoming. *Current Anthropology*, 51(3), 317-351.
- Bignante, E., & Tecco, N. (2013). Is indigenous health knowledge converging to herbalism? Healing practices among the Meru and the Maasai of the Ngarenanyuki ward, Northern Tanzania. *Geoforum*, 48, 177-186.
- Binns, C. W., Lee, M. K., & Lee, A. H. (2018). Problems and prospects: public health regulation of dietary supplements. *Annual Review of Public Health*, 39(1), 403-420.
- Biswas, D., Biswas, A., & Das, N. (2006). The differential effects of celebrity and expert endorsements on consumer risk perceptions: the role of consumer knowledge, perceived congruency, and product technology orientation. *Journal of Advertising*, 35(2), 17-31.
- Bivins, R. (2007). *Alternative medicine: a history*. Oxford: Oxford University Press.

- Bjelakovic, G., Glud, L. L., Nikolova, D., Whitfield, K., Wetterslev, J., Simonetti, R. G., et al. (2014). Vitamin D supplementation for prevention of mortality in adults. *Cochrane Database of Systematic Reviews*, 1.
- Blakemore, A., Dickens, C., Guthrie, E., Bower, P., Kontopantelis, E., Afzal, C., et al. (2014). Depression and anxiety predict health-related quality of life in chronic obstructive pulmonary disease: systematic review and meta-analysis. *International Journal of Chronic Obstructive Pulmonary Disease*, 9, 501-512.
- Bluethmann, S. M., Mariotto, A. B., & Rowland, J. H. (2016). Anticipating the "Silver Tsunami": prevalence trajectories and comorbidity burden among older cancer survivors in the United States. *Cancer Epidemiology Biomarkers and Prevention*, 25(7), 1029-1036.
- Bodel, J. (2008). Cicero's Minerva, Penates, and the mother of the Lares: an outline of Roman domestic religion. In J. Bodel & S. M. Olyan (Eds.), *Household and Family Religion in Antiquity* (pp. 248-275). Malden, MA: Blackwell
- Bodenheimer, T., Lorig, K., Holman, H., & Grumbach, K. (2002). Patient self-management of chronic disease in primary care. *JAMA*, 288(19), 2469-2475.
- Bodker, M. N., Christensen, U., & Langstrup, H. (2019). Home care as reablement or enabling arrangements? An exploration of the precarious dependencies in living with functional decline. *Sociology of Health & Illness*, 41(7), 1358-1372.
- Bond, C., & Hannaford, P. (2003). Issues related to monitoring the safety of over-the-counter (OTC) medicines. *Drug Safety*, 26(15), 1065-1074.
- Bonnefont, J., Courade, J.-P., Alloui, A., & Eschaliier, A. (2003). [Antinociceptive mechanism of action of paracetamol]. *Drugs*, 63 Spec No 2, 1-4.
- Boon, H., Hirschhorn, K., Griener, G., & Cali, M. (2009). The ethics of dietary supplements and natural health products in pharmacy practice: a systematic documentary analysis. *International Journal of Pharmacy Practice*, 17(1), 31-38.
- Boullosa, C., & Schnee, S. (2013). The Insult: "Shut up, you dirty greaser." From "Tejas". *BOMB*(123), 82-87.
- Bourdieu, P. (1990). *The logic of practice*. Translated by Richard Nice. First published in French as *Le sens pratique* 1980 in *Les Editions de Minuit*. Cambridge, UK: Polity Press.
- Bourgeault, I., Dingwall, R., & de Vries, R. (Eds.). (2010). *The Sage handbook of qualitative methods in health research*. Los Angeles: Sage.

- Bourke, B. (2014). Positionality: reflecting on the research process. *The Qualitative Report*, 19(33), 1-9.
- Bouville, A., Ron, E., Howe, G., Zablotska, L., & Hatch, M. (2005). The Chernobyl disaster: cancer following the accident at the Chernobyl nuclear power plant. *Epidemiologic Reviews*, 27(1), 56-66.
- Boyd, D., & Crawford, K. (2012). Critical questions for big data. *Information, Communication & Society*, 15(5), 662-679.
- Bradley, F., Ashcroft, D. M., & Crossley, N. (2018). Negotiating inter-professional interaction: Playing the general practitioner-pharmacist game. *Sociology of Health & Illness*, 40(3), 426-444.
- Brady, T. J., Murphy, L., O'Colmain, B. J., Beauchesne, D., Daniels, B., Greenberg, M., et al. (2013). A meta-analysis of health status, health behaviors, and health care utilization outcomes of the the chronic disease self-management program. *Preventing Chronic Disease*, 10, E07.
- Braidotti, R. (2006). Posthuman, all too human: towards a new process ontology. *Theory, Culture & Society*, 23(7-8), 197-208.
- Brand, J. H., Spencer, K. L., O'shea, F. T., & Lindsay, J. E. (2018). Potential pollution risks of historic landfills on low-lying coasts and estuaries. *Wiley Interdisciplinary Reviews: Water*, 5(1), e1264.
- Brandt, A. M., & Rozin, P. (Eds.). (1997). *Morality and health*. New York: Routledge.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101.
- Brayne, S. (2017). Big data surveillance: the case of policing. *American Sociological Review*, 82(5), 977-1008.
- Breton, M., Gray, C. S., Sheridan, N., Shaw, J., Parsons, J., Wankah, P., et al. (2017). Implementing community-based primary healthcare for older adults with complex needs in Quebec, Ontario and New-Zealand: describing nine cases. *International Journal of Integrated Care*, 17(2), 12-12.
- Brevers, D., Dan, B., Noel, X., & Nils, F. (2011). Sport superstition: mediation of psychological tension on non-professional sportsmen's superstitious rituals. *Journal of Sport Behavior*, 34(1), 3-24.

- Brewis, J. (1982). *Colonial fare*. Auckland: Methuen.
- Brick, D. (2010). The court of public opinion and the practice of restorative ordeals in pre-modern India. *Journal of Indian Philosophy*, 38(1), 25-38.
- Brien, S., Dibb, B., & Burch, A. (2011). The use of intuition in homeopathic clinical decision making: an interpretative phenomenological study. *Evidence-Based Complementary and Alternative Medicine*, 1-8.
- Briggs, P., Burford, B., De Angeli, A., & Lynch, P. (2002). Trust in online advice. *Social Science Computer Review*, 20(3), 321-332.
- Brinkmann, S. (2014). Doing without data. *Qualitative Inquiry*, 20(6), 720-725.
- Brody, H. (2010). Ritual medicine and the placebo response. In W. S. Sax, J. Quack, & J. Weinhold (Eds.), *The problem of ritual efficacy* (pp. 151-168). Oxford: Oxford University Press.
- Brosnan, C., Vuolanto, P., & Brodin Danell, J. A. (2018). *Complementary and alternative medicine: knowledge production and social transformation*. Cham, Switzerland: Palgrave Macmillan
- Brown, P., Zavestoski, S., McCormick, S., Mayer, B., Morello-Frosch, R., & Gasior Altman, R. (2004). Embodied health movements: new approaches to social movements in health. *Sociology of Health & Illness*, 26(1), 50-80.
- Brownell, K. D. (1991). Dieting and the search for the perfect body: where physiology and culture collide. *Behavior Therapy*, 22, 1-12.
- Brownie, S., & Rolfe, M. (2004). Health characteristics of older Australian dietary supplement users compared to non-supplement users. *Asia Pacific Journal of Clinical Nutrition*, 13(4), 365-371.
- Buchanan, I. (1997). The problem of the body in Deleuze and Guattari, or, what can a body do? *Body & Society*, 3(3), 73-91.
- Buckner, K. D., Chavez, M. L., Raney, E. C., & Stoehr, J. D. (2005). Health food stores' recommendations for nausea and migraines during pregnancy. *Annals of Pharmacotherapy*, 39(2), 274-279.
- Bulette Coakley, A., & Duffy, M. E. (2010). The effect of therapeutic touch on postoperative patients. *Journal of Holistic Nursing*, 28(3), 193-200.

- Burchell, G., Gordon, C., & Miller, P. (Eds.). (1991). *The Foucault effect: studies in governmentality with two lectures by and an interview with Michel Foucault*. Chicago: University of Chicago Press.
- Burgess, A., & Horii, M. (2012). Risk, ritual and health responsabilisation: Japan's 'safety blanket' of surgical face mask-wearing. *Sociology of Health & Illness*, 34(8), 1184-1198.
- Bury, M. (1982). Chronic illness as biographical disruption. *Sociology of Health & Illness*, 4(2), 167-182.
- Bussing, A., Ostermann, T., Raak, C., & Matthiessen, P. F. (2010). Adaptive coping strategies and attitudes toward health and healing in German homeopathy and acupuncture users. *Explore: The Journal of Science & Healing*, 6(4), 237-245.
- Byrne, M. M., Weissfeld, J., & Roberts, M. S. (2008). Anxiety, fear of cancer, and perceived risk of cancer following lung cancer screening. *Medical Decision Making*, 28(6), 917-925.
- Calhoun, C., LiPuma, E., & Postone, M. (Eds.). (1993). *Bourdieu: critical perspectives*. Blackwell: Polity Press.
- Campbell-Lendrum, D., Manga, L., Bagayoko, M., & Sommerfeld, J. (2015). Climate change and vector-borne diseases: what are the implications for public health research and policy? *Philosophical Transactions of the Royal Society B: Biological Sciences*, 370(1665).
- Campbell, J. (1973). *The hero with a thousand faces* (3rd ed.). Novato, CA: New World Library
- Canadian Task Force on Preventive Health Care. (2012). Recommendations on screening for type 2 diabetes in adults. *Canadian Medical Association Journal*, 184(15), 1687-1696.
- Caputo, J. D. (Ed.) (1997). *Deconstruction in a nutshell: a conversation with Jacques Derrida. Perspectives in continental philosophy No. 1*. New York Fordham University Press
- Cardini, F., Lesi, G., Lombardo, F., van der Sluijs, C., & Group, M. M. S. C. (2010). The use of complementary and alternative medicine by women experiencing menopausal symptoms in Bologna. *BMC Women's Health*, 10, 7.
- Cardwell, G. (1998). Have I got a product for you! *Sport Health*, 16(4), 16-19.
- Carey, J. R., & Judge, D. S. (2001). Life span extension in humans is self-reinforcing: a general theory of longevity. *Population and Development Review*, 27(3), 411-436.

- Carocho, M., Barreiro, M. F., Morales, P., & Ferreira, I. C. F. R. (2014). Adding molecules to food, pros and cons: a review on synthetic and natural food additives. *Comprehensive Reviews in Food Science and Food Safety*, 13(4), 377-399.
- Carr, A. C., & McCall, C. (2017). The role of vitamin C in the treatment of pain: new insights. *Journal of Translational Medicine*, 15(1), 77.
- Carr, W. (2000). Some reflections on spirituality, religion and mental health. *Mental Health, Religion & Culture*, 3(1), 1-12.
- Carroll, L. (1865 [1898]). *Alice's adventures in wonderland*. London: Macmillan.
- Cartwright, T. (2007). 'Getting on with life': The experiences of older people using complementary health care. *Social Science & Medicine*, 64(8), 1692-1703.
- Casas-Cortés, M. I., Osterweil, M., & Powell, D. E. (2008). Blurring boundaries: recognizing knowledge practices in the study of social movements. *Anthropological Quarterly*, 81(1), 17-58.
- Castro, E. M., Van Regenmortel, T., Sermeus, W., & Vanhaecht, K. (2019). Patients' experiential knowledge and expertise in health care: a hybrid concept analysis. *Social Theory & Health*, 17(3), 307-330.
- Cederstrom, C., & Spicer, A. (2015). *The wellness syndrome*. Cambridge: Polity Press.
- Cefalu, W. T., Petersen, M. P., & Ratner, R. E. (2014). The Alarming and Rising Costs of Diabetes and Prediabetes: A Call for Action! *Diabetes Care*, 37(12), 3137-3138.
- Ceuterick, M., & Vandebroek, I. (2017). Identity in a medicine cabinet: Discursive positions of Andean migrants towards their use of herbal remedies in the United Kingdom. *Social Science & Medicine*, 177, 43-51.
- Chan, K. M. A., Balvanera, P., Benessaiah, K., Chapman, M., Díaz, S., Gómez-Baggethun, E., et al. (2016). Opinion: Why protect nature? Rethinking values and the environment. *Proceedings of the National Academy of Sciences*, 113(6), 1462-1465.
- Chang, J. W., Yan, B. R., Chang, M. H., Tseng, S. H., Kao, Y. M., Chen, J. C., et al. (2014). Cumulative risk assessment for plasticizer-contaminated food using the hazard index approach. *Environmental Pollution*, 189, 77-84.
- Chang, L. H., & Wang, J. (2009). Integration of complementary medical treatments with rehabilitation from the perspectives of patients and their caregivers: a qualitative inquiry. *Clinical Rehabilitation*, 23(8), 730-740.

- Chapman, S., Buttler, A., Francez, A.-J., Laggoun-Défarge, F., Vasander, H., Schloter, M., et al. (2003). Exploitation of northern peatlands and biodiversity maintenance: a conflict between economy and ecology. *Frontiers in Ecology and the Environment*, 1(10), 525-532.
- Chaves, S. A. d. M., & Reinhard, K. J. (2006). Critical analysis of coprolite evidence of medicinal plant use, Piauí, Brazil. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 237(1), 110-118.
- Cheung, M. J., Gibbons, H. M., Dragunow, M., & Faull, R. L. (2007). Tikanga in the laboratory. *MAI Review Issue 1*.
- Chida, Y., Hamer, M., Wardle, J., & Steptoe, A. (2008). Do stress-related psychosocial factors contribute to cancer incidence and survival? *Nature Clinical Practice Oncology*, 5, 466.
- Childs, N. M., & Poryzees, G. H. (1998). Foods that help prevent disease: consumer attitudes and public policy implications. *British Food Journal*, 100(9), 419-426.
- Clague, J. C., Stenger, R., & Clough, T. J. (2015). Evaluation of the stable isotope signatures of nitrate to detect denitrification in a shallow groundwater system in New Zealand. *Agriculture, Ecosystems & Environment*, 202, 188-197.
- Clarke, P. (2014). Pharmaceuticals, pharmacists and profits: a health policy perspective. *Australian Prescriber*, 37, 148-149.
- Clopton, J. (2019). *Alzheimer's Diagnosis Breakthrough Hopeful, Expensive*. Retrieved from <https://www.webmd.com/alzheimers/news/20190501/alzheimers-diagnosis-breakthrough-hopeful-expensive> Accessed 23.9.2019
- Cobb, M., Puchalski, C., & Rumbold, B. (2012). *The Oxford Textbook of Spirituality in Healthcare*. Oxford: Oxford University Press.
- Cohen, S., Janicki-Deverts, D., & Miller, G. E. (2007). Psychological stress and disease. *JAMA*, 298(14), 1685-1687.
- Coiera, E. (1996). The Internet's challenge to health care provision. *BMJ Open*, 312(7022), 3-4.
- Coleborne, C., & Godtschalk, O. (2013). Colonial families and cultures of health: glimpses of illness and domestic medicine in private records in New Zealand and Australia, 1850–1910. *Journal of Family History*, 38(4), 403-421.

- College of Naturopathic Medicine. (undated). What is naturopathy? Retrieved from <https://www.naturopathy-uk.com/home/home-what-is-naturopathy/> Accessed 13.7.2020
- Colloredo-Mansfeld, R. (1998). 'Dirty Indians', radical Indígenas, and the political economy of social difference in modern Ecuador. *Bulletin of Latin American Research*, 17(2), 185-205.
- Combes, R. (1981). *Pharmacy in New Zealand: aspects and reminiscences*. Wellington: Pharmaceutical Society of New Zealand.
- Connell, J. (2006). 'The taste of paradise': selling Fiji and Fiji water. 47(3), 342-350.
- Conrad, P. (1994). Wellness as virtue: morality and the pursuit of health. *Culture, Medicine and Psychiatry*, 18(3), 385-401.
- Consedine, N. S., Magai, C., Krivoshekova, Y. S., Ryzewicz, L., & Neugut, A. I. (2004). Fear, anxiety, worry, and breast cancer screening behavior: a critical review. *Cancer Epidemiology Biomarkers & Prevention*, 13(4), 501-510.
- Cook, H. J. (1990). The Rose case reconsidered: physicians, apothecaries, and the law in Augustan England. *Journal of the History of Medicine and Allied Sciences*, 45(4), 527-555.
- Cook, S. J. (2005). Use of traditional Mi'kmaq medicine among patients at a First Nations community health centre. *Canadian Journal of Rural Medicine*, 10(2), 95-99.
- Coole, D., & Frost, S. (Eds.). (2010). *New materialisms: ontology, agency and politics*. Durham, NC: Duke University Press.
- Coon, S. A., Stevens, V. W., Brown, J. E., Wolff, S. E., & Wrobel, M. J. (2015). Comparison of dietary supplement product knowledge and confidence between pharmacists and health food store employees. *Journal of the American Pharmacists Association*, 55(2), 161-168.
- Cooper, R. (2010). Response to "The marketing of dietary supplements in North America". *Journal of Alternative & Complementary Medicine*, 16(12), 1243.
- Cooper, R. (2011). In praise of the prescription: the symbolic and boundary object value of the traditional prescription in the electronic age. *Health Sociology Review*, 20, 462-464.
- Corbin, J. M. (2003). The body in health and illness. *Qualitative Health Research*, 13(2), 256-267.

- Corden, A., & Sainsbury, R. (2006). Exploring 'quality': research participants' perspectives on verbatim quotations. *International Journal of Social Research Methodology*, 9(2), 97-110.
- Cornwall, A. (2007). Buzzwords and fuzzwords: deconstructing development discourse. *Development in Practice*, 17(4-5), 471-484.
- Cosco, T. D., Matthew Prina, A., Perales, J., Stephan, B. C., & Brayne, C. (2014). Whose "successful ageing"? Lay- and researcher-driven conceptualisations of ageing well. *European Journal of Psychiatry*, 28, 124-130.
- Costello, A., Abbas, M., Allen, A., Ball, S., Bell, S., Bellamy, R., et al. (2009). Managing the health effects of climate change. *Lancet*, 373(9676), 1693-1733.
- Costin, V., & Vignoles, V. L. (2019). Meaning Is about mattering: evaluating coherence, purpose, and existential mattering as precursors of meaning in life judgments. *Journal of Personality & Social Psychology*, epub early.
- Couldry, N., & Turow, J. (2014). Advertising, big data and the clearance of the public realm: marketers' new approaches to the content subsidy. *International Journal of Communication*, 8, 1710-1726.
- Court, W. E. (2005). Pharmacy from the ancient world to 1100 AD. In S. Anderson (Ed.), *Making medicines: a brief history of pharmacy and pharmaceuticals* (pp. 21-36). London: Pharmaceutical Press.
- Cox, D. N., Koster, A., & Russell, C. G. (2004). Predicting intentions to consume functional foods and supplements to offset memory loss using an adaptation of protection motivation theory. *Appetite*, 43(1), 55-64.
- Cox, R. (2016). Materials, skills and gender identities: men, women and home improvement practices in New Zealand. *Gender, Place & Culture*, 23(4), 572-588.
- Craig, C. S., & Douglas, S. P. (2006). Beyond national culture: implications of cultural dynamics for consumer research. *International Marketing Review*, 23(3), 322-342.
- Crawford, R. (2004). Risk ritual and the management of control and anxiety in medical culture. *Health*, 8(4), 505-528.
- Crawford, S. Y., & Leventis, C. (2005). Herbal product claims: boundaries of marketing and science. *Journal of Consumer Marketing*, 22(7), 432-436.

- Crawshaw, P. (2012). Governing at a distance: social marketing and the (bio) politics of responsibility. *Social Science & Medicine*, 75(1), 200-207.
- Crellin, J. K. (2004). *A social history of medicines in the Twentieth Century: to be taken three times a day*. New York: Pharmaceutical Products Press (Haworth Press)
- Crighton, E. J., Brown, C., Baxter, J., Lemyre, L., Masuda, J. R., & Ursitti, F. (2013). Perceptions and experiences of environmental health risks among new mothers: a qualitative study in Ontario, Canada. *Health, Risk and Society*, 15(4), 295-312.
- CRN. (2018). 2018 CRN Consumer Survey on Dietary Supplements Retrieved from <https://www.crnusa.org/CRNConsumerSurvey> Accessed 1.10.2019
- Crossley, M. L. (2003). 'Would you consider yourself a healthy person?' Using focus groups to explore health a a moral phenomenon. *Journal of Health Psychology*, 8(5), 501-514.
- Crowe Horwath. (2014). Natural Products NZ Survey 2014. Analysis of results and key findings. Retrieved from <https://www.naturalhealthproducts.nz/wp-content/uploads/2015/02/NPNZ-Sector-Survey-Complete-Report-.pdf> Accessed 29.1.2020
- Cunningham, L. (2001). Marketing alternative medicine. *Marketing Health Services*, 21(4), 37-39.
- Currin, J., & Meister, E. A. (2008). A hospital-based intervention using massage to reduce distress among oncology patients. *Cancer Nursing*, 31(3), 214-221.
- Curth, L. H. (2006). *From physick to pharmacology: five hundred years of British drug retailing*. Aldershot: Ashgate Publishing.
- Daase, C., & Kessler, O. (2007). Knowns and unknowns in the war on terror': uncertainty and the political construction of danger. *Security Dialogue*, 38(4), 411-434.
- Damery, S., Gratus, C., Grieve, R., Warmington, S., Jones, J., Routledge, P., et al. (2011). The use of herbal medicines by people with cancer: a cross-sectional survey. *British Journal of Cancer*, 104(6), 927-933.
- Danaher, G., Schirato, T., & Webb, J. (2000). *Understanding Foucault*. Crows Nest, NSW: Allen and Unwin.
- Davidov, V. (2012). From colonial primitivism to ecoprimitivism: constructing the indigenous "savage" in South America. *Arcadia*, 46(2), 467-487.

- Davis, C., & Abraham, J. (2013). Is there a cure for corporate crime in the drug industry? *BMJ : British Medical Journal*, 346, f755.
- Davis, K. (2008). Intersectionality as buzzword: a sociology of science perspective on what makes a feminist theory successful. *Feminist Theory*, 9(1), 67-85.
- Davis, P. M. (2011). Open access, readership, citations: a randomized controlled trial of scientific journal publishing. *FASEB Journal*, 25(7), 2129-2134.
- Dawes, S. S., Pardo, T. A., & Cresswell, A. M. (2004). Designing electronic government information access programs: a holistic approach. *Government Information Quarterly*, 21(1), 3-23.
- Death, C. (2010). Counter-conducts: a Foucauldian analytics of protest. *Social Movement Studies*, 9(3), 235-251.
- Deci, E. L., & Ryan, R. M. (2008). Hedonia, eudaimonia, and well-being: an introduction. *Journal of Happiness Studies*, 9(1), 1-11.
- DeJean, D., Giacomini, M., Vanstone, M., & Brundisini, F. (2013). Patient experiences of depression and anxiety with chronic disease: a systematic review and qualitative meta-synthesis. *Ontario health technology assessment series*, 13(16), 1-33.
- Deleuze, G. (1997). Literature and life. *Critical Inquiry*, 23(2), 225-230.
- Deleuze, G., & Guatarri, F. (1987). *A thousand plateaus*. London: Bloomsbury Paperback 2013 Reprint.
- Demaitre, L. (2013). *Medieval medicine: the art of healing from top to toe*. Santa Barbara, CA: Praeger.
- Dennehy, C. E., Tsourounis, C., & Miller, A. E. (2005). Evaluation of herbal dietary supplements marketed on the internet for recreational use. *Annals of Pharmacotherapy*, 39(10), 1634-1639.
- Derby, S. L., & Keeney, R. L. (1981). Risk analysis: understanding "how safe is safe enough?" *Risk Analysis*, 1(3), 217-224.
- Derkatch, C. (2008). Method as argument: boundary work in evidence - based medicine. *Social Epistemology*, 22(4), 371-388.
- Derrida, J. (1997). *Deconstruction in a nutshell: a conversation with Jacques Derrida*. Edited with a commentary by John D. Caputo. New York: Fordham University Press.

- Desmarais, F. (2015). Caught in an inconvenient nation-branding promise: the problematic '100% pure New Zealand'. *Interdisciplinary Environmental Review*, 16(1), 1-16.
- Devcich, D. A., Pedersen, I. K., & Petrie, K. J. (2007). You eat what you are: modern health worries and the acceptance of natural and synthetic additives in functional foods. *Appetite*, 48(3), 333-337.
- Dew, K., Chamberlain, K., Hodgetts, D., Norris, P., Radley, A., & Gabe, J. (2014). Home as a hybrid centre of medication practice. *Sociology of Health & Illness*, 36(1), 28-43.
- Dew, K., Norris, P., Gabe, J., Chamberlain, K., & Hodgetts, D. (2015). Moral discourses and pharmaceuticalised governance in households. *Social Science & Medicine*, 131, 272-279.
- Dewsbury, J. D. (2011). The Deleuze-Guattarian assemblage: plastic habits. *Area*, 43(2), 148-153.
- Dickinson, A., Blatman, J., El-Dash, N., & Franco, J. C. (2014). Consumer usage and reasons for using dietary supplements: report of a series of surveys. *Journal of the American College of Nutrition*, 33(2), 176-182.
- Dietler, M. (2011). Feasting and fasting. In T. Insoll (Ed.), *The Oxford Handbook of the Archeology of Ritual and Religion* (pp. 179-194). Oxford: Oxford University Press.
- Divine, R. L., & Lepisto, L. (2005). Analysis of the healthy lifestyle consumer. *Journal of Consumer Marketing*, 22(5), 275-283.
- Dobson, T. (2016). Jump start your exercise mojo! *Health* 2000(58), 9.
- Doel, M. A., & Segrott, J. (2003). Beyond belief? Consumer culture, complementary medicine, and the dis-ease of everyday life. *Environment and Planning D: Society and Space*, 21(6), 739-759.
- Donald, D. (2012). Indigenous Métissage: a decolonizing research sensibility. *International Journal of Qualitative Studies in Education*, 25(5), 533-555.
- Douglas, M. (1966). *Purity and danger: analysis of concepts of pollution and taboo*. London: Routledge and Kegan Paul.
- Douglas, M. (1992). *Risk and blame: essays in cultural theory*. London: Routledge.
- Dovey, K. (2011). Uprooting critical urbanism. *City*, 15(3-4), 347-354.

- Doyle, M. E., & Glass, K. A. (2010). Sodium reduction and its effect on food safety, food quality, and human health. *Comprehensive Reviews in Food Science and Food Safety*, 9(1), 44-56.
- Duggleby, W., Hicks, D., Nekolaichuk, C., Holtslander, L., Williams, A., Chambers, T., et al. (2012). Hope, older adults, and chronic illness: a metasynthesis of qualitative research. *Journal of Advanced Nursing*, 68(6), 1211-1223.
- Dumas, A., & Turner, B. S. (2015). Human longevity, utopia, and solidarity. *The Sociological Quarterly*, 56(1), 1-17.
- Duncan, J. S., & Duncan, N. G. (2004). *Landscapes of privilege: the politics of the aesthetics in an American suburb*. New York.
- Durante, K. M., Whitmore, B., Jones, C. A., & Campbell, N. R. (2001). Use of vitamins, minerals and herbs: a survey of patients attending family practice clinics. *Clinical & Investigative Medicine - Medecine Clinique et Experimentale*, 24(5), 242-249.
- Durie, M. H. (1993). *Traditional Māori healing: a paper prepared for the Core Health Committee*. Palmerston North Te Papa-i-ōia: Te kura Māori o te whare wānanga o Massey,.
- Durie, M. H. (1994). *Whaiora: Māori Health Development*. Oxford: Oxford University Press.
- Dwyer, J. T., Coates, P. M., & Smith, M. J. (2018). Dietary supplements: regulatory challenges and research resources. *Nutrients*, 10(41).
- Earnshaw, V. A., & Quinn, D. M. (2012). The impact of stigma in healthcare on people living with chronic illnesses. *Journal of Health Psychology*, 17(2), 157-168.
- Egan, R. (2010). Health promotion and spirituality: making the implicit explicit. *Keeping Up to Date*, No 34(Summer), 1-4.
- Eliason, B. C., Huebner, J., & Marchand, L. (1999). What physicians can learn from consumers of dietary supplements. *Journal of Family Practice*, 48(6), 459-463.
- Elving, W. J. L. (2013). Scepticism and corporate social responsibility communications: the influence of fit and reputation. *Journal of Marketing Communications*, 19(4), 277-292.
- Elwood, S. A., & Martin, D. G. (2000). "Placing" interviews: location and scales of power in qualitative research. *Professional Geographer*, 52(4), 649-657.

- Elwyn, G., Frosch, D., Thomson, R., Joseph-Williams, N., Lloyd, A., Kinnersley, P., et al. (2012). Shared decision making: a model for clinical practice. *Journal of General Internal Medicine*, 27(10), 1361-1367.
- Emmons, R. A. (2005). Striving for the sacred: personal goals, life meaning, and religion. *Journal of Social Issues*, 61(4), 731-745.
- Erickson, H. L. (2007). Philosophy and theory of holism. *Nursing Clinics of North America*, 42(2), 139-163.
- Ernst, E., & Singh, A. G. (2008). *Trick or treatment: the undeniable facts about alternative medicine*. London: Bantam.
- Eyles, C., Leydon, G. M., & Brien, S. B. (2012). Forming connections in the homeopathic consultation. *Patient Education & Counseling*, 89(3), 501-506.
- Eyles, C., Leydon, G. M., Lewith, G. T., & Brien, S. (2011). A Grounded Theory Study of Homeopathic Practitioners' Perceptions and Experiences of the Homeopathic Consultation. *Evidence-Based Complementary and Alternative Medicine*, 1-12.
- Facco, E., & Zanette, G. (2017). The odyssey of dental anxiety: from prehistory to the present. A narrative review. *Frontiers in Psychology*, 8, 1155-1155.
- Farr, M., Wardlaw, J., & Jones, C. (2008). Tackling health inequalities using geodemographics: A social marketing approach. *International Journal of Marketing Research*, 50(4), 449-467.
- Feller, C. P., & Cottone, R. R. (2003). The importance of empathy in the therapeutic alliance. *Journal of Humanistic Counseling, Education and Development*, 42(1), 53-61.
- Field, T., Diego, M., Hernandez-Reif, M., Medina, L., Delgado, J., & Hernandez, A. (2012). Yoga and massage therapy reduce prenatal depression and prematurity. *Journal of Bodywork and Movement Therapies*, 16(2), 204-209.
- Finegold, J. A., Asaria, P., & Francis, D. P. (2013). Mortality from ischaemic heart disease by country, region, and age: Statistics from World Health Organisation and United Nations. *International Journal of Cardiology*, 168(2), 934-945.
- Fishman, J. R., Binstock, R. H., & Lambrick, M. A. (2008). Anti-aging science: the emergence, maintenance, and enhancement of a discipline. *Journal of Aging Studies*, 22(4), 295-303.
- Flegal, K. M., Carroll, M. D., Kit, B. K., & Ogden, C. L. (2012). Prevalence of obesity and trends in the distribution of body mass index among US adults, 1999-2010. *JAMA*, 307(5), 491-497.

- Fontanarosa, P. B., Rennie, D., & DeAngelis, C. D. (2003). The need for regulation of dietary supplements—lessons from ephedra. *JAMA*, 289(12), 1568-1570.
- Foote, K. J., Joy, M. K., & Death, R. G. (2015). New Zealand dairy farming: milking our environment for all its worth. *Environmental Management*, 56(3), 709-720.
- Forbat, L., & Henderson, J. (2005). Theoretical and practical reflections on sharing transcripts with participants. *Qualitative Health Research*, 15(8), 1114-1128.
- Foucault, M. (1988). Technologies of the self. In L. H. Martin, H. Gutman, & P. H. Hutton (Eds.), *Technologies of the self: a seminar with Michel Foucault* (pp. 16-49). Boston, MA: University of Massachusetts Press.
- Foucault, M. (1991). Questions of method. In G. Burchell, C. Gordon, & P. Miller (Eds.), *The Foucault effect: studies in governmentality with two lectures by and an interview with Michel Foucault* (pp. 73-86). Chicago: University of Chicago Press.
- Fox, N. J. (2011). Boundary objects, social meanings and the success of new technologies. *Sociology*, 45(1), 70-85.
- Fox, N. J. (2012). *The body*. Malden, MA: Polity Press.
- Fox, N. J., & Alldred, P. (2017). *Sociology and the new materialism: theory, research, action*. London: Sage.
- Fox, N. J., & Ward, K. J. (2008). What are health identities and how may we study them? *Sociology of Health & Illness*, 30(7), 1007-1021.
- Franic, D. M., & Kleyman, K. (2012). A qualitative study of herbal medicine use in the Ukraine: implications for US pharmacy practice. *Journal of Pharmacy Practice*, 25(1), 96-100.
- Frank, R. (2002). Homeopath & patient - a dyad of harmony? *Social Science & Medicine*, 55(8), 1285-1296.
- Fraser, M., Kember, S., & Lury, C. (2005). Inventive life: approaches to the new vitalism. *Theory, Culture & Society*, 22(1), 1-14.
- Freeman, J. (2005). Towards a definition of holism. *British Journal of General Practice*, 55(511), 154-155.

- Frohlich, K. L., Mykhalovskiy, E., Poland, B. D., Haines-Saah, R., & Johnson, J. (2012). Creating the socially marginalised youth smoker: the role of tobacco control. *Sociology of Health & Illness*, 34(7), 978-993.
- Fugh-Berman, A. (2000). Herb-drug interactions. *Lancet*, 355(9198), 134-138.
- Furlan, A. D., Giraldo, M., Baskwill, A., Irvin, E., & Imamura, M. (2015). Massage for low - back pain. *Cochrane Database of Systematic Reviews*(9).
- Furnham, A. (2002). Exploring attitudes toward, and knowledge of, homeopathy and CAM through focus groups. *Complementary Therapies in Nursing and Midwifery*, 8(1), 42-47.
- Furnham, A., Vincent, C., & Wood, R. (1995). The health beliefs and behaviors of three groups of complementary medicine and a general practice group of patients. *Journal of Alternative & Complementary Medicine*, 1(4), 347-359.
- Gahche, J. J., Bailey, R. L., & Burt, V. (2011). Dietary supplement use has increased in US adults since NHANES III (1988-1994). NCHS data brief, no 61. Hyattsville, MD: : National Center for Health Statistics. Retrieved from: <http://www.cdc.gov/nchs/data/databriefs/db61.pdf> Accessed 15.5.14
- Gale, N. (2014). The sociology of traditional, complementary and alternative medicine. *Sociology Compass*, 8(6), 805-822.
- Gallagher, W. (2012). *New: understanding our need for novelty and change*. New York, NY: Penguin.
- Galvin, R. (2002). Disturbing notions of chronic illness and individual responsibility: towards a genealogy of morals. *Health*, 6(2), 107-137.
- Ganesh, S. (2016). Managing surveillance: surveillant individualism in an era of relentless visibility. *International Journal of Communication*, 10(16), 164-177.
- García, A., & Blankholm, J. (2016). The social context of organized nonbelief: county-level predictors of nonbeliever organizations in the United States. *Journal for the Scientific Study of Religion*, 55(1), 70-90.
- Gardiner, P., Sadikova, E., Filippelli, A. C., White, L. F., & Jack, B. W. (2015). Medical reconciliation of dietary supplements: don't ask, don't tell. *Patient Education & Counseling*, 98(4), 512-517.
- Garnham, N., & Williams, R. (1980). Pierre Bourdieu and the sociology of culture: an introduction. *Media, Culture & Society*, 2(3), 209-223.

- Garz, M. (2014). Good news and bad news: evidence of media bias in unemployment reports. *Public Choice*, 161(3), 499-515.
- Gawande, A. (2014). *Being mortal: illness, medicine, and what matters in the end*. London: Profile Books.
- Gaynes, R. (2017). The discovery of penicillin—new insights after more than 75 years of clinical use. *Emerging Infectious Diseases*, 23(5), 849-853.
- Geard, D., Rebar, A. L., Reaburn, P., & Dionigi, R. A. (2018). Testing a model of successful aging in a cohort of Masters swimmers *Journal of Aging and Physical Activity*, 26(2), 183.
- Genius, S. J., Schwalfenberg, G., Siy, A.-K. J., & Rodushkin, I. (2012). Toxic element contamination of natural health products and pharmaceutical preparations. *PLoS One*, 7(11), e49676.
- Gerstorf, D., Ram, N., Lindenberger, U., & Smith, J. (2013). Age and time-to-death trajectories of change in indicators of cognitive, sensory, physical, health, social, and self-related functions. *Developmental Psychology*, 49(10), 1805-1821.
- Gesler, W. (1996). Lourdes: healing in a place of pilgrimage. *Health and Place*, 2(2), 95-105.
- Geyer, H., Parr, M. K., Koehler, K., Mareck, U., Schänzer, W., & Thevis, M. (2008). Nutritional supplements cross-contaminated and faked with doping substances. *Journal of Mass Spectrometry*, 43(7), 892-902.
- Giacomini, M. (2010). Theory matters in qualitative health research. In I. Bourgeault, R. Dingwall, & R. De Vries (Eds.), *Sage Handbook of Qualitative Methods in Health Research* (pp. 125-156). London: Sage.
- Giddens, A. (1990). *The consequences of modernity*. Cambridge: Polity.
- Gilleard, C., & Higgs, P. (2011). Ageing abjection and embodiment in the fourth age. *Journal of Aging Studies*, 25(2), 135-142.
- Giordan, G. (2009). The body between religion and spirituality. *Social Compass*, 56(2), 226-236.
- Glücklich, A. (2001). *Sacred pain: hurting the body for the sake of the soul*. Oxford: Oxford University Press.
- Goddard, N. C. (1995). 'Spirituality as integrative energy': a philosophical analysis as requisite precursor to holistic nursing practice. *Journal of Advanced Nursing*, 22(4), 808-815.

- Goff, D. C., Lloyd-Jones, D. M., Bennett, G., Coady, S., D'Agostino, R. B., Gibbons, R., et al. (2014). 2013 ACC/AHA Guideline on the Assessment of Cardiovascular Risk. A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines, 63(25 Part B), 2935-2959.
- Goldman, W. (2003). *The princess bride: S Morgenstern's classic tale of true love and high adventure. The "good parts" version abridged by William Goldman*. Orlando, FL: Harcourt.
- Goldstein, M. S., Sutherland, C., Jaffe, D. T., & Wilson, J. (1988). Holistic physicians and family practitioners: similarities, differences and implications for health policy. *Social Science & Medicine*, 26(8), 853-861.
- Gollust, S. E., Wilfond, B. S., & Hull, S. C. (2003). Direct-to-consumer sales of genetic services on the Internet. *Genetics In Medicine*, 5, 332.
- Gommans, M., Krishnan, K. S., & Scheffold, K. B. (2001). From brand loyalty to e-loyalty: A conceptual framework. *Journal of Economic & Social Research*, 3(1).
- Gorski, P. S., & Altinordu, A. (2008). After secularization? *Annual Review of Sociology*, 34(1), 55-85.
- Gosciny, T., & Uderzo, A. (1974). *Asterix and the Goths. Translated by Anthea Bell and Derek Hockridge* London: Hodder Dargaud.
- Gotay, C. C., & Dumitriu, D. (2000). Health food store recommendations for breast cancer patients. *Archives of Family Medicine*, 9(8), 692-699.
- Gotay, C. C., Katzmarzyk, P. T., Janssen, I., Dawson, M. Y., Aminoltejari, K., & Bartley, N. L. (2013). Updating the Canadian obesity maps: an epidemic in progress. *Canadian Journal of Public Health. Revue Canadienne de Sante Publique*, 104(1), e64-68.
- Graham, G. G., Davies, M. J., Day, R. O., Mohamudally, A., & Scott, K. F. (2013). The modern pharmacology of paracetamol: therapeutic actions, mechanism of action, metabolism, toxicity and recent pharmacological findings. *Inflammopharmacology*, 21(3), 201-232.
- Graham, G. G., & Scott, K. F. (2005). Mechanism of action of paracetamol. *American Journal of Therapeutics*, 12(1), 46-55.
- Grand View Research. (2018). Dietary Supplements Market Size Worth \$278.02 Billion By 2024. Retrieved from <https://www.grandviewresearch.com/press-release/global-dietary-supplements-market> Accessed 29. 4.2019

- Grand View Research. (2019). Dietary supplements market worth \$194.63 billion by 2025 Retrieved from <https://www.grandviewresearch.com/press-release/global-dietary-supplements-market> Accessed 27.11.2019
- Graves, R. (1977). Jason and the Argonauts. In R. Graves (Ed.), *The Greek myths* (Vol. 2, pp. 238). Harmondsworth, Middlesex: Penguin.
- Green, J., & Thorogood, N. (2009). *Qualitative methods for health research* (2nd ed.). London: Sage.
- Greener, J., Douglas, F., & van Teijlingen, E. (2010). More of the same? Conflicting perspectives of obesity causation and intervention amongst overweight people, health professionals and policy makers. *Social Science & Medicine*, 70(7), 1042-1049.
- Gregson, N., Metcalfe, A., & Crewe, L. (2007). Identity, mobility, and the throwaway society. *Environment and Planning D: Society and Space*, 25(4), 682-700.
- Guallar, E., Stranges, S., Mulrow, C., Appel, L. J., & Miller, E. R., III. (2013). Enough is enough: stop wasting money on vitamin and mineral supplements. *Annals of Internal Medicine*, 159(12), 850-851.
- Guart, A., Bono-Blay, F., Borrell, A., & Lacorte, S. (2011). Migration of plasticizersphthalates, bisphenol A and alkylphenols from plastic containers and evaluation of risk. *Food Additives & Contaminants: Part A*, 28(5), 676-685.
- Gubbi, J., Buyya, R., Marusic, S., & Palaniswami, M. (2013). Internet of Things (IoT): a vision, architectural elements, and future directions. *Future Generation Computer Systems*, 29(7), 1645-1660.
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59-82.
- Guimares, A. S. (2003). Racial insult in Brazil. *Discourse & Society*, 14(2), 133-151.
- Haddon, G. L. (2001). *Cognitive determinants of treatment choice among cancer patients*. [PhD Thesis] Palmerston North: Massey University.
- Hagaman, A. K., & Wutich, A. (2017). How many interviews are enough to identify metathemes in multisited and cross-cultural research? Another perspective on Guest, Bunce, and Johnson's (2006) landmark study. *Field Methods*, 29(1), 23-41.

- Haggerty, K. D., & Ericson, R. V. (2000). The surveillant assemblage. *The British Journal of Sociology*, 51(4), 605-622.
- Hamilton, N. P. (Ed.) (2011). *Kinesiology: the scientific basis of human motion* (12th ed.). Dubuque, Iowa: Brown and Benchmark.
- Hammerschlag, C. (1997). *Healing ceremonies: creating personal rituals for spiritual, emotional, physical and mental health*. New York, NY: Berkley.
- Han, G. S. (2001). The provision of hanbang herbal medicine in the Korean community in Australia: entrepreneurial or caring for fellow Koreans? *Australian Health Review*, 24(4), 146-155.
- Hands, T. (2018). Drinking for health: proprietary tonic wines. In *Drinking in Victorian and Edwardian Britain: Beyond the Spectre of the Drunkard* (pp. 113-127). Cham: Springer International Publishing.
- Hannam, D. (1997). More than a cup of tea: meaning construction in an everyday occupation. *Journal of Occupational Science*, 4(2), 69-73.
- Hansen, H. K., & Flyverbom, M. (2015). The politics of transparency and the calibration of knowledge in the digital age. *Organization*, 22(6), 872-889.
- Hansen, J., Kharecha P, Sato M, Masson-Delmotte V, Ackerman F, Beerling D.J, et al. (2013). Assessing “dangerous climate change”: required reduction of carbon emissions to protect young people, future generations and nature. *PLoS One*, 8(12), e81648.
- Haque, M. M., & Maheshwari, N. (2015). Consumer ethnocentrism and influence of role model on generational cohorts’ purchase intentions towards herbal products. *Asia-Pacific Journal of Management Research and Innovation*, 11(4), 305-312.
- Hardey, M. (1999). Doctor in the house: the Internet as a source of lay health knowledge and the challenge to medical expertise. *Sociology of Health and Illness*, 21(6), 820-835.
- Hardie, W. F. R. (1979). Aristotle on the best life for a man. *Philosophy*, 54(207), 35-50.
- Haridy, R. (2018). Breakthrough ultrasound treatment to reverse dementia moves to human trials Retrieved from <https://newatlas.com/ultrasound-dementia-alzheimers-human-trials/57725/> Accessed 23.9.2019
- Hart, J. (2012). Healing touch, therapeutic touch, and reiki. *Alternative and Complementary Therapies*, 18(6), 309-313.

- Hartt, M. D., & Biglieri, S. (2018). Prepared for the silver tsunami? An examination of municipal old-age dependency and age-friendly policy in Ontario, Canada. *Journal of Urban Affairs*, 40(5), 625-638.
- Harvey, W. S. (2010). Methodological approaches for interviewing elites. *Geography Compass*, 4(3), 193-205.
- Hatch, E. E., Nelson, J. W., Stahlhut, R. W., & Webster, T. F. (2010). Association of endocrine disruptors and obesity: perspectives from epidemiological studies. *International Journal of Andrology*, 33(2), 324-332.
- Hecklau, F., Galeitzke, M., Flachs, S., & Kohl, H. (2016). Holistic approach for human resource management in industry 4.0. *Procedia CIRP*, 54, 1-6.
- Hedderson, M. M., Patterson, R. E., Neuhouser, M. L., Schwartz, S. M., Bowen, D. J., Standish, L. J., et al. (2004). Sex differences in motives for use of complementary and alternative medicine among cancer patients. *Alternative Therapies in Health & Medicine*, 10(5), 58-64.
- Heintzman, P. (2009). Nature-based recreation and spirituality: a complex relationship. *Leisure Sciences*, 32(1), 72-89.
- Helios Health. (Undated). Helios Integrative Medical Centre. Retrieved from <https://www.helios.co.nz/> Accessed: 8.4.2019
- Hennink, M. M., Kaiser, B. N., & Marconi, V. C. (2017). Code saturation versus meaning saturation: how many interviews are enough? *Qualitative Health Research*, 27(4), 591-608.
- Hensrud, D. D., Engle, D. D., & Scheitel, S. M. (1999). Underreporting the use of dietary supplements and nonprescription medications among patients undergoing a periodic health examination. *Mayo Clinic Proceedings*, 74(5), 443-447.
- Herbert-Cheshire, L. (2000). Contemporary strategies for rural community development in Australia: a governmentality perspective. *Journal of Rural Studies*, 16(2), 203-215.
- Herbig, P., & Yelkurm, R. (1997). A review of the multilevel marketing phenomenon. *Journal of Marketing Channels*, 6(1), 17-33.
- Hernandez-Reif, M., Diego, M., & Field, T. (2007). Preterm infants show reduced stress behaviors and activity after 5 days of massage therapy. *Infant Behavior and Development*, 30(4), 557-561.

- Herrick, C. (2011). *Governing health and consumption: sensible citizens, behaviour and the city*. Bristol: Policy Press.
- Heshka, J. T., Palleschi, C., Howley, H., Wilson, B., & Wells, P. S. (2008). A systematic review of perceived risks, psychological and behavioral impacts of genetic testing. *Genetics In Medicine*, 10, 19.
- Hirayama, F., Lee, A. H., Binns, C. W., Watanabe, F., & Ogawa, T. (2008). Dietary supplementation by older adults in Japan. *Asia Pacific Journal of Clinical Nutrition*, 17(2), 280-284.
- Hodgetts, D., Chamberlain, K., Gabe, J., Dew, K., Radley, A., Madden, H., et al. (2011). Emplacement and everyday use of medications in domestic dwellings. *Health & Place*, 17(1), 353-360.
- Hoelterhoff, M. (2015). A theoretical exploration of death anxiety. *Journal of Applied Psychology and Social Science*, 1(2), 1-17.
- Hoffelt, C., & Gross, T. (2016). A review of significant pharmacokinetic drug interactions with antidepressants and their management. *Mental Health Clinician*, 6(1), 35-41.
- Hoffmann, D. (1988). *The herbal handbook: a user's guide to medical herbalism*. Rochester, VT: Healing Arts Press.
- Hogarth, S., Javitt, G., & Melzer, D. (2008). The current landscape for direct-to-consumer genetic testing: legal, ethical, and policy Issues. *Annual Review of Genomics and Human Genetics*, 9(1), 161-182.
- Hogg, M. A., Adelman, J. R., & Blagg, R. D. (2010). Religion in the face of uncertainty: an uncertainty-identity theory account of religiousness. *Personality and Social Psychology Review*, 14(1), 72-83.
- Hok, J., Falkenberg, T., & Tishelman, C. (2011). Lay perspectives on the use of biologically based therapies in the context of cancer: a qualitative study from Sweden. *Journal of Clinical Pharmacy and Therapeutics*, 36(3), 367-375.
- Holbrook, M. B., & Schindler, R. M. (2003). Nostalgic bonding: exploring the role of nostalgia in the consumption experience. *Journal of Consumer Behaviour*, 3(2), 107-127.
- Holden, E., Linnerud, K., & Banister, D. (2014). Sustainable development: our common future revisited. *Global Environmental Change*, 26, 130-139.

- Hole, D. G., Perkins, A. J., Wilson, J. D., Alexander, I. H., Grice, P. V., & Evans, A. D. (2005). Does organic farming benefit biodiversity? *Biological Conservation*, 122(1), 113-130.
- Holland, E. W. (2013). *Deleuze and Guatarri's A Thousand Plateaus: a reader's guide* London: Bloomsbury.
- Holloway, S. W. F. (1995). The regulation of the supply of drugs in Britain before 1868. In R. Porter & M. Teich (Eds.), *Drugs and narcotics in history* (pp. 77-96). Cambridge: Cambridge University Press.
- Holmes, A. D. (2010). *Embracing the paradox: spiritual issues in general practice. PhD Thesis*. University of Otago, Dunedin. Retrieved from <http://hdl.handle.net/10523/1763>
Accessed 11.12.2019
- Holt, S., & MacDonald, I. (2008). *Natural remedies that really work: a New Zealand guide*. Nelson, New Zealand: Craig Potton.
- Holzappel, W. H., Geisen, R., & Schillinger, U. (1995). Biological preservation of foods with reference to protective cultures, bacteriocins and food-grade enzymes. *International Journal of Food Microbiology*, 24(3), 343-362.
- Homan, P. G. (2005). The development of community pharmacy. In S. Anderson (Ed.), *Making medicines: a brief history of pharmacy and pharmaceuticals* (pp. 115-134). London: Pharmaceutical Press.
- Horden, P. (1988). A discipline of relevance: historiography of the later medieval hospital. *Social History of Medicine* 1(3), 359-374.
- Horner, J. R. (2000). Betty Crocker's Picture Cookbook: a gendered ritual response to social crises of the postwar era. *Journal of Communication Inquiry*, 24(3), 332-345.
- Horsley, R. A. (1979). Who were the witches? The social roles of the accused in the European witch trials. *The Journal of Interdisciplinary History*, 9(4), 689-715.
- Horton, J. (2008). Producing Postman Pat: the popular cultural construction of idyllic rurality. *Journal of Rural Studies*, 24(4), 389-398.
- Houston, J. C. (1959). Tonics. *British Medical Journal*, 1(5131), 1236-1237.
- Houtman, D., & Aupers, S. (2007). The spiritual turn and the decline of tradition: the spread of post-Christian spirituality in 14 western countries, 1981-2000. *Journal for the Scientific Study of Religion*, 46(3), 305-320.

- Houtman, D., & Mascini, P. (2002). Why do churches become empty, while new age grows? Secularization and religious change in the Netherlands. *Journal for the Scientific Study of Religion*, 41(3), 455-473.
- Howard, N., Tsourounis, C., & Kapusnik-Uner, J. (2001). Dietary supplement survey of pharmacists: personal and professional practices. *Journal of Alternative & Complementary Medicine*, 7(6), 667-680.
- Hubbell, L. (1990). The relevance of the heroic myths to public servants. *The American Review of Public Administration*, 20(3), 139-154.
- Hughes, B. (2009). Wounded/monstrous/abject: a critique of the disabled body in the sociological imaginary. *Disability & Society*, 24(4), 399-410.
- Hughes, C. M., & McCann, S. (2003). Perceived interprofessional barriers between community pharmacists and general practitioners: a qualitative assessment. *British Journal of General Practice*, 53(493), 600-606.
- Humpel, N., & Jones, S. C. (2006). Gaining insight into the what, why and where of complementary and alternative medicine use by cancer patients and survivors. *European Journal of Cancer Care*, 15(4), 362-368.
- Hunt, J. A. (2005). Pharmacy in the modern world: 1841-1986. In S. Anderson (Ed.), *Making medicines: a brief history of pharmacy and pharmaceuticals* (pp. 77-93). London: Pharmaceutical Press
- Hunter, L. M., Logan, J., Goulet, J.-G., & Barton, S. (2006). Aboriginal healing: regaining balance and culture. *Journal of Transcultural Nursing*, 17(1), 13-22.
- Huovila, J., & Saikkonen, S. (2016). Establishing credibility, constructing understanding: the epistemic struggle over healthy eating in the Finnish dietetic blogosphere. *Health*, 20(4), 383-400.
- Hur, W.-M., Ahn, K.-H., & Kim, M. (2011). Building brand loyalty through managing brand community commitment. *Management Decision*, 49(7), 1194-1213.
- Hutching, C. (2018). Sage to ask EPA to look at Roundup after jury award. Retrieved from <https://www.stuff.co.nz/business/106203168/sage-to-ask-epa-to-look-at-roundup-after-jury-award?rm=a> Accessed 5.7.2019
- Hutchinson, J. (2009). Warfare and the sacralisation of nations: the meanings, rituals and politics of national remembrance. *Millennium*, 38(2), 401-417.

- Hydén, L.-C. (1997). Illness and narrative. *Sociology of Health & Illness*, 19(1), 48-69.
- Integrated Health. (undated). Integrated Health Care. Retrieved from <https://www.integratedhealthcare.co.nz/> Accessed 11.12.2019
- Ioannidis, J. P. A. (2008). Effectiveness of antidepressants: an evidence myth constructed from a thousand randomized trials? *Philosophy, Ethics, and Humanities in Medicine*, 3(1), 14.
- IPCC. (2019). Intergovernmental Panel on Climate Change Reports. Retrieved from <https://www.ipcc.ch/about/> Accessed 9.8.2019
- Islam, G., & Zyphur, M. J. (2009). Rituals in organizations: a review and expansion of current theory. *Group & Organization Management*, 34(1), 114-139.
- Izberk - Bilgin, E. (2010). An interdisciplinary review of resistance to consumption, some marketing interpretations, and future research suggestions. *Consumption Markets & Culture*, 13(3), 299-323.
- Izquierdo, C. (2005). When "health" is not enough: societal, individual and biomedical assessments of well-being among the Matsigenka of the Peruvian Amazon. *Social Science & Medicine*, 61(4), 767-783.
- Izzo, A. A. (2004). Drug interactions with St. John's Wort (*Hypericum perforatum*): a review of the clinical evidence. *International Journal of Clinical Pharmacology and Therapeutics*, 42(3), 139-148.
- Izzo, A. A., & Ernst, E. (2009). Interactions between herbal medicines and prescribed drugs. *Drugs*, 69(13), 1777-1798.
- Jackson, A. Y., & Mazzei, L. A. (2012). *Thinking with theory in qualitative research*. New York: Routledge.
- Jackson, R. C., & Baker, J. S. (2001). Routines, rituals, and rugby: case study of a world class goal kicker. *The Sport Psychologist*, 15(1), 48-65.
- Jacobs, J. (1994). *The horned women*. London: Senate Studio Editions.
- Jaffee, D. (2010). Fair Trade standards, corporate participation, and social movement responses in the United States. *Journal of Business Ethics*, 92(2), 267-285.
- Jaffee, D., & Howard, P. H. (2010). Corporate cooptation of organic and fair trade standards. *Agriculture and Human Values*, 27(4), 387-399.

- Jagtenberg, T., & Evans, S. (2003). Global herbal medicine: a critique. *Journal of Alternative and Complementary Medicine*, 9(2), 321-329.
- James, L. A. (2015). Indigenous spirituality: insights for a life-affirming and life-sustaining economy of life. *The Ecumenical Review*, 67(2), 203-207.
- Jefferies, S., Healy, B., Weatherall, M., Beasley, R., & Shirtcliffe, P. (2012). What risks do women face when seeking advice during pregnancy from pharmacies and natural health retailers? *New Zealand Medical Journal*, 125(1367), 61-69.
- Jensen, T. L. (2014). A holistic person perspective in measuring entrepreneurship education impact – social entrepreneurship education at the Humanities. *The International Journal of Management Education*, 12(3), 349-364.
- Johar, J. S., & Siergy, M. J. (1991). Value-expressive versus utilitarian advertising appeals: when and why to use which appeal. *Journal of Advertising*, 20(3), 23-33.
- Johnson, H., South, N., & Walters, R. (2016). The commodification and exploitation of fresh water: property, human rights and green criminology. *International Journal of Law, Crime and Justice*, 44, 146-162.
- Jones, L. (2018). Pastoral power and the promotion of self-care. *Sociology of Health & Illness*, 40(6), 988-1004.
- Jones, P. M., & Olsan, L. T. (2015). Performative rituals for conception and childbirth in England, 900-1500. *Bulletin of the History of Medicine*, 89(3), 406-433.
- Jones, R., Latham, J., & Betta, M. (2008). Narrative construction of the social entrepreneurial identity. *International Journal of Entrepreneurial Behavior & Research*, 14(5), 330-345.
- Joos, S., Glassen, K., & Musselmann, B. (2012). Herbal medicine in primary healthcare in Germany: the patient's perspective. *Evidence-Based Complementary and Alternative Medicine*, Article 294638, 1-10.
- Jordan, M. A., & Haywood, T. (2007). Evaluation of internet websites marketing herbal weight-loss supplements to consumers. *Journal of Alternative & Complementary Medicine*, 13(9), 1035-1043.
- Joshanloo, M. (2014). Eastern conceptualizations of happiness: fundamental differences with western views. *Journal of Happiness Studies*, 15(2), 475-493.

- Kaptchuk, T. J., Kelley, J. M., Conboy, L. A., Davis, R. B., Kerr, C. E., Jacobson, E. E., et al. (2008). Components of placebo effect: randomised controlled trial in patients with irritable bowel syndrome. *BMJ*, 336(7651), 999-1003.
- Karnieli-Miller, O., Strier, R., & Pessach, L. (2009). Power relations in qualitative research. *Qualitative Health Research*, 19(2), 279-289.
- Kasabov, E. (2004). Power and disciplining: bringing Foucault to marketing. *Irish Marketing Review*, 17(1), 3-12.
- Katz, S., & Gish, J. (2015). Aging in the biosocial order: repairing time and cosmetic rejuvenation in a medical spa clinic. *The Sociological Quarterly*, 56(1), 40-61.
- Kearns, R. S., & Gesler, W. M. (1998). *Putting health into place: landscape, identity and well-being*. Syracuse, NY: Syracuse University Press.
- Keep, W. W., & Vander Nat, P. J. (2014). Multilevel marketing and pyramid schemes in the United States: an historical analysis. *Journal of Historical Research in Marketing*, 6(2), 188-210.
- Kellert, S. R. (1993). The biological basis for human values of nature. In S. R. Kellert & E. O. Wilson (Eds.), *The biophilia hypothesis* (pp. 42-69). Washington, DC: Island Press.
- Kelley, J. M., Lembo, A. J., Ablon, J. S., Villanueva, J. J., Conboy, L. A., Levy, R., et al. (2009). Patient and practitioner influences on the placebo effect in irritable bowel syndrome. *Psychosomatic Medicine*, 71(7), 789-797.
- Kelly, S. E. (2010). Qualitative interviewing techniques and styles. In I. Bourgeault, R. Dingwall, & R. de Vries (Eds.), *Sage Handbook of Qualitative Methods in Health Research* (pp. 307-326). London Sage.
- Kemper, K. J., Amata-Kynvi, A., Dvorkin, L., Whelan, J. S., Woolf, A., Samuels, R. C., et al. (2003). Herbs and other dietary supplements: healthcare professionals' knowledge, attitudes, and practices. *Alternative Therapies in Health & Medicine*, 9(3), 42-49.
- Kemper, K. J., Gardiner, P., Gobble, J., & Woods, C. (2006). Expertise about herbs and dietary supplements among diverse health professionals. *BMC Complementary and Alternative Medicine*, 6(1), 15.
- Kendall, H., Kaptan, G., Stewart, G., Grainger, M., Kuznesof, S., Naughton, P., et al. (2018). Drivers of existing and emerging food safety risks: expert opinion regarding multiple impacts. *Food Control*, 90, 440-458.

- Kennedy-Martin, T., Curtis, S., Faries, D., Robinson, S., & Johnston, J. (2015). A literature review on the representativeness of randomized controlled trial samples and implications for the external validity of trial results. *Trials*, 16(1), 495.
- Keshet, Y., & Popper-Giveon, A. (2018). The undisciplined patient in neoliberal society: conscious, informed and intuitive health behaviours. *Health, Risk & Society*, 1-18.
- Khedkar, S., Carraresi, L., & Bröring, S. (2017). Food or pharmaceuticals? Consumers' perception of health-related borderline products. *PharmaNutrition*, 5(4), 133-140.
- King, A. (2000). Thinking with Bourdieu against Bourdieu: a 'practical' critique of the Habitus. *Sociological Theory*, 18(3), 417-433.
- King, A. (2010). The Afghan War and 'postmodern' memory: commemoration and the dead of Helmand. *The British Journal of Sociology*, 61(1), 1-25.
- Kinsella, K. G. (2005). Future longevity: demographic concerns and consequences. *Journal of the American Geriatrics Society*, 53(9s), S299-S303.
- Kjær, K. M. (2019). Detoxing feels good: dieting and affect in 22Days Nutrition and Goop detoxes. *Feminist Media Studies*, 19(5), 702-716.
- Klein, J. D., Wilson, K. M., Sesselberg, T. S., Gray, N. J., Yussman, S., & West, J. (2005). Adolescents' knowledge of and beliefs about herbs and dietary supplements: a qualitative study. *Journal of Adolescent Health*, 37(5), 409.
- Kong, K. C. (2001). Marketing of belief: intertextual construction of network marketers' identities. *Discourse and Society*, 12(4), 473-503.
- Koteyko, N., & Nerlich, B. (2007). Multimodal discourse analysis of probiotic web advertising. *The International Journal of Language, Society and Culture*, 23, 20-31.
- Kraai, I. H., Vermeulen, K. M., Luttik, M. L. A., Hoekstra, T., Jaarsma, T., & Hillege, H. L. (2013). Preferences of heart failure patients in daily clinical practice: quality of life or longevity? *European Journal of Heart Failure*, 15(10), 1113-1121.
- Krause, N., & Hayward, R. D. (2012). Religion, meaning in life, and change in physical functioning during late adulthood. *Journal of Adult Development*, 19(3), 158-169.
- Kreeft, P. (2016). *I burned for your peace: Augustine's Confessions unpacked*. San Francisco: Ignatius Press.
- Kretchmar, S. (2013). Mind-body holism, paradigm shifts, and education. *Fair Play*, 1(1), 28-43.

- Krieger, D. (1975). Therapeutic touch: the imprimatur of nursing. *The American Journal of Nursing*, 75(5), 784-787.
- Kristeva, J. (1982). *Powers of horror: an essay on abjection*. New York: Columbia University Press.
- Krochmal, L. (2009). Considerations before choosing (extemporaneously) compounded products. *Dermatologic Therapy*, 22(3), 225-228.
- Krzywirzeka, P. (2013). *Negative impact of emotional labor on a corporate image: the case of Amway Poland. Kozminsky Working Papers No. 01-2013*. Warsaw: Kozminski University.
- Kucharz, E. J., Kovalenko, V., Szántó, S., Bruyère, O., Cooper, C., & Reginster, J.-Y. (2016). A review of glucosamine for knee osteoarthritis: why patented crystalline glucosamine sulfate should be differentiated from other glucosamines to maximize clinical outcomes. *Current Medical Research and Opinion*, 32(6), 997-1004.
- Kumar, V. S., & Navaratnam, V. (2013). Neem (*Azadirachta indica*): prehistory to contemporary medicinal uses to humankind. *Asian Pacific Journal of Tropical Biomedicine*, 3(7), 505-514.
- Kunwar, R. M., Mahat, L., Acharya, R. P., & Bussmann, R. W. (2013). Medicinal plants, traditional medicine, markets and management in far-west Nepal. *Journal of Ethnobiology and Ethnomedicine*, 9(1), 1-24.
- Kwan, D., Hirschhorn, K., & Boon, H. (2006). U.S. and Canadian pharmacists' attitudes, knowledge, and professional practice behaviors toward dietary supplements: a systematic review. *BMC Complementary & Alternative Medicine*, 6, 31.
- Laeque, H., Boon, H., Kachan, N., Cohen, J. C., & D'Cruz, J. (2006). The Canadian Natural Health Products (NHP) regulations: industry perceptions and compliance factors. *BMC Health Services Research*, 6, 63.
- Lafontaine, C. (2009). Regenerative medicine's immortal body: from the fight against ageing to the extension of longevity. *Body & Society*, 15(4), 53-71.
- Lafontaine, C. (2015). Aging in the era of regenerative medicine: analysis of aging-related representations among Canadian researchers. *The Sociological Quarterly*, 56(1), 62-79.
- Lähteenmäki, L. (2013). Claiming health in food products. *Food Quality and Preference*, 27(2), 196-201.

- Laidlaw, J. (2005). A life worth leaving: fasting to death as telos of a Jain religious life. *Economy and Society*, 34(2), 178-199.
- Lakerveld, J., Bot, S. D., Chinapaw, M. J., van Tulder, M. W., Kostense, P. J., Dekker, J. M., et al. (2013). Motivational interviewing and problem solving treatment to reduce type 2 diabetes and cardiovascular disease risk in real life: a randomized controlled trial. *International Journal of Behavioral Nutrition and Physical Activity*, 10(1), 47.
- Lamb, S. (2014). Permanent personhood or meaningful decline? Toward a critical anthropology of successful aging. *Journal of Aging Studies*, 29, 41-52.
- Lambert, D. (2003). Fasting as a penitential rite: a biblical phenomenon? *Harvard Theological Review*, 96(4), 477-512.
- Lamont, M., & Molnár, V. (2002). The study of boundaries in the social sciences. *Annual Review of Sociology*, 28(1), 167-195.
- Landstrom, E., Hursti, U. K., Becker, W., & Magnusson, M. (2007). Use of functional foods among Swedish consumers is related to health-consciousness and perceived effect.[Erratum appears in *Br J Nutr*. 2008 Jan;99(1):215]. *British Journal of Nutrition*, 98(5), 1058-1069.
- LaPenna, A. M. (2010). "Alternative" healthcare: access as a revenue source in a consumer-driven market. *Journal of Healthcare Management*, 55(1), 7-10.
- Lapillonne, A. (2010). Vitamin D deficiency during pregnancy may impair maternal and fetal outcomes. *Medical Hypotheses*, 74(1), 71-75.
- Lapsley, P. (2006). The magic roundabout. *BMJ*, 332(7532), 43-44.
- Larsen, H. O., & Olsen, C. S. (2007). Unsustainable collection and unfair trade? Uncovering and assessing assumptions regarding Central Himalayan medicinal plant conservation. *Biodiversity and Conservation*, 16(6), 1679-1697.
- Larson, E. B., & Yao, X. (2005). Clinical empathy as emotional labor in the patient-physician relationship. *JAMA*, 293(9), 1100-1106.
- Latour, B. (2005). *Reassembling the social: an introduction to Actor-Network theory*. Oxford: Oxford University Press.
- Law, J. (1999). After ANT: complexity, naming and topology. *The Sociological Review*, 47(1 Suppl), 1-14.

- Law, R. G. (1970). The introduction of the kumara into New Zealand. *Archaeology and Physical Anthropology in Oceania*, 5(2), 114-127.
- Lawson, E. (2019). Averagarians and individuals. *British Journal of General Practice*, 69(686), 441.
- Lawton, J. (2003). Lay experiences of health and illness: past research and future agendas. *Sociology of Health & Illness*, 25(3), 23-40.
- Lazarus, R. S. (1993). From psychological stress to the emotions: a history of changing outlooks. *Annual Review of Psychology*, 44, 1-21.
- LeBesco, K. (2011). Neoliberalism, public health, and the moral perils of fatness. *Critical Public Health*, 21(2), 153-164.
- Lee, K. (2010). Awe and humility: intrinsic value in nature. *Beyond an earthbound environmental ethics*. *Royal Institute of Philosophy Supplement*, 36, 89-101.
- Lee, K., Hoti, K., Hughes, J. D., & Emmerton, L. (2014). Dr Google and the consumer: a qualitative study exploring the navigational needs and online health information-seeking behaviors of consumers with chronic health conditions. *Journal of Medical Internet Research*, 16(12), e262.
- Lee, K., Hoti, K., Hughes, J. D., & Emmerton, L. (2017). Dr Google is here to stay but health care professionals are still valued: an analysis of health care consumers' internet navigation support preferences. *Journal of Medical Internet Research*, 19(6), e210.
- Legenne, M., Chirac, A., Ruer, M., Reix, F., & Filbet, M. (2015). Perception of naturopathy for female patients with metastatic gynecological cancer: A qualitative study. *Palliative & Supportive Care*, 13(6), 1663-1668.
- Lehnert, T., Heider, D., Leicht, H., Heinrich, S., Corrieri, S., Lupp, M., et al. (2011). Health care utilization and costs of elderly persons with multiple chronic conditions. *Medical Care Research and Review*, 68(4), 387-420.
- Lemke, T. (2002). Foucault, governmentality and critique. *Rethinking Marxism*, 14(3), 49-64.
- Lentjes, M. A. H. (2019). The balance between food and dietary supplements in the general population. *Proceedings of the Nutrition Society*, 78(1), 97-109.
- Lewis, M. (2019). De-legitimising complementary medicine: framings of the Friends of Science in Medicine-CAM debate in Australian media reports. *Sociology of Health & Illness*, 41(5), 831-851.

- Leys, T. W. (1883). *Brett's colonists' guide and cyclopaedia of useful knowledge*. Auckland: Evening Star. Reprinted 1980 by the Capper Press, Christchurch.
- Li, M., & Chapman, G. B. (2012). Why do people like natural? Instrumental and ideational bases for the naturalness preference. *Journal of Applied Social Psychology*, 42(12), 2859-2878.
- Li, S., Na, L., Li, Y., Gong, L., Yuan, F., Niu, Y., et al. (2013). Long-term calcium supplementation may have adverse effects on serum cholesterol and carotid intima-media thickness in postmenopausal women: a double-blind, randomized, placebo-controlled trial. *The American Journal of Clinical Nutrition*, 98(5), 1353-1359.
- Liamputtong, P. (2013). *Qualitative research methods* (4th ed.). Melbourne: Oxford University Press
- Liddy, C., Blazkho, V., & Mill, K. (2014). Challenges of self-management when living with multiple chronic conditions: systematic review of the qualitative literature. *Canadian Family Physician*, 60(12), 1123-1133.
- Liem, M., & Richardson, N. J. (2014). The role of transformational narratives in desistance among released lifers. *Criminal Justice and Behavior*, 41(6), 692-712.
- Lifschitz, F., & Lifschitz, J. Z. (2014). Gobesity: the root causes of the obesity epidemic in the USA and now worldwide. *Pediatric Endocrinology Reviews*, 12(1), 17-34.
- Lin, X. (2007). Chinese entrepreneurs in network marketing organizations: a culture-moderated social capital perspective. *Journal of Small Business & Entrepreneurship*, 20(3), 273-288.
- Lindgren, M., & Wåhlin, N. (2001). Identity construction among boundary-crossing individuals. *Scandinavian Journal of Management*, 17(3), 357-377.
- Little, C. V. (2009). Simply because it works better: exploring motives for the use of medical herbalism in contemporary U.K. health care. *Complementary Therapies in Medicine*, 17(5), 300-308.
- Lloyd, F., Parsons, C., & Hughes, C. M. (2010). 'It's showed me the skills that he has': pharmacists' and mentors' views on pharmacist supplementary prescribing. *International Journal of Pharmacy Practice*, 18(1), 29-36.
- Locock, L., Ziebland, S., & Dumelow, C. (2009). Biographical disruption, abruption and repair in the context of Motor Neurone Disease. *Sociology of Health & Illness*, 31(7), 1043-1058.
- Lorenzini, D. (2018). Governmentality, subjectivity, and the neoliberal form of life. *Journal for Cultural Research*, 22(2), 154-166.

- Lowenberg, J. S., & Davis, F. (1994). Beyond medicalisation - demedicalisation: the case of holistic health. *Sociology of Health & Illness*, 16(5), 579-599.
- Lowenthal, D. (2015). *The past is a foreign country: revisited*. Cambridge: Cambridge University Press.
- Loyer, J., & Knight, C. (2018). Selling the "Inca superfood": nutritional primitivism in superfoods books and maca marketing. *Food, Culture & Society*, 21(4), 449-467.
- Lundberg, G. D. (2019). How to be elderly and not frail. Commentary for At Large Medscape. Retrieved from https://www.medscape.com/viewarticle/912106_print Accessed 8.5.2019
- Lupton, D. (1999). *Risk*. London Routledge.
- Lupton, D. (2013). *Risk* (2nd ed.). Abingdon: Routledge.
- Lupton, D., & Tulloch, J. (2002). 'Life would be pretty dull without risk': Voluntary risk-taking and its pleasures. *Health, Risk & Society*, 4(2), 113-124.
- Lyng, S. (2008). Edgework, risk and uncertainty. In J. O. Zinn (Ed.), *Social theories of risk and uncertainty: an introduction* (pp. 106-137). Malden, MA: Blackwell.
- Ma, H., Carpenter, C. L., Sullivan-Halley, J., & Bernstein, L. (2011). The roles of herbal remedies in survival and quality of life among long-term breast cancer survivors--results of a prospective study. *BMC Cancer*, 11, 222.
- MacDonald, F. (2018). This is the sickening amount pharmaceutical companies pay top journal editors. *ScienceAlert*, April 12.
- MacLure, M. (2015). The "new materialisms": a thorn in the flesh of critical qualitative inquiry? In G. Cannella, M. S. Perez, & P. A. Pasque (Eds.), *Critical qualitative inquiry: foundations and futures* (pp. 93-112). Walnut Creek, CA: West Coast Press.
- Madden, H. (2012). *Integrative medicine: a contested practice*. PhD Thesis. (PhD), Massey University, Albany, Auckland.
- Maggiani, R. (2009). *Cloud computing is changing how we communicate*. Paper presented at the Professional Communication Conference, 2009. IPCC 2009. IEEE International.

- Mahomoodally, M. F. (2013). Traditional medicines in Africa: an appraisal of ten potent African medicinal plants. *Evidence Based Complementary and Alternative Medicine*, Article 617459.
- Malins, P. (2004). Machinic assemblages: Deleuze, Guattari and an ethico-aesthetics of drug use. *Janus Head*, 7(1), 84-104.
- Malterud, K. (2001). Qualitative research: standards, challenges, and guidelines. *Lancet*, 358(9280), 483-488.
- Mammen, G., & Faulkner, G. (2013). Physical activity and the prevention of depression: a systematic review of prospective studies. *American Journal of Preventive Medicine*, 45(5), 649-657.
- Mann, M. E., Rahmstorf, S., Kornhuber, K., Steinman, B. A., Miller, S. K., & Coumou, D. (2017). Influence of anthropogenic climate change on planetary wave resonance and extreme weather events. *Scientific Reports*, 7, 45242.
- Manning, C. (2016). *Losing our religion: how unaffiliated parents are raising their children*. New York: New York University Press.
- Manolio, T. A., Rowley, R., Williams, M. S., Roden, D., Ginsburg, G. S., Bult, C., et al. (2019). Opportunities, resources, and techniques for implementing genomics in clinical care. *Lancet*, 394(10197), 511-520.
- Marchant, J. (2016). *Cure: a journey into the science of mind over body*. Melbourne: Text Publishing.
- Marcus, D. M. (2016). Dietary supplements: What's in a name? What's in the bottle? *Drug Testing and Analysis*, 8(3-4), 410-412.
- Marino, L., & Mountain, M. (2015). Denial of death and the relationship between humans and other animals. *Anthrozoös*, 28(1), 5-21.
- Mark, G. T., & Lyons, A. C. (2010). Maori healers' views on wellbeing: the importance of mind, body, spirit, family and land. *Social Science & Medicine*, 70(11), 1756-1764.
- Markson, S., & Fiese, B. H. (2000). Family rituals as a protective factor for children with asthma. *Journal of Pediatric Psychology*, 25(7), 471-480.
- Marmot, M. (2005). Social determinants of health inequalities. *Lancet* 365, 1099-1104.

- Martela, F., & Steger, M. F. (2016). The three meanings of meaning in life: distinguishing coherence, purpose, and significance. *The Journal of Positive Psychology*, 11(5), 531-545.
- Martinez, M. E., Jacobs, E. T., Baron, J. A., Marshall, J. R., & Byers, T. (2012). Dietary supplements and cancer prevention: balancing potential benefits against proven harms. *Journal of the National Cancer Institute*, 104(10), 732-739.
- Marzano-Parisoli, M. M. (2001). The contemporary construction of a perfect body image: bodybuilding, exercise addiction, and eating disorders. *Quest*, 53, 216-230.
- Massumi, B. (1992). *A user's guide to Capitalism and Schizophrenia: deviations from Deleuze and Guattari*. Boston, MA: Massachusetts Institute of Technology
- Matheson, P. (2006). The myth of secular New Zealand. *Pacifica*, 19(2), 177-192.
- Maughan, R. J. (2005). Contamination of dietary supplements and positive drug tests in sport. *Journal of Sports Sciences*, 23(9), 883-889.
- Mauthner, N. (2015). 'The past was never simply there to begin with and the future is not simply what will unfold': a posthumanist performative approach to qualitative longitudinal research. *International Journal of Social Research Methodology*, 18(3), 321-336.
- May, J. (1996). 'A little taste of something more exotic': the imaginative geographies of everyday life. *Geography*, 81(1), 57-64.
- Mayes, C. (2015). *The biopolitics of lifestyle*. London: Routledge.
- Mazzanti, G., Battinelli, L., Daniele, C., Costantini, S., Ciaralli, L., & Evandri, M. G. (2008). Purity control of some Chinese crude herbal drugs marketed in Italy. *Food & Chemical Toxicology*, 46(9), 3043-3047.
- McAdams, D. P., & McLean, K. C. (2013). Narrative identity. *Current Directions in Psychological Science*, 22(3), 233-238.
- McAlexander, J. H., Schouten, J. W., & Koenig, H. F. (2002). Building brand community. *Journal of Marketing*, 66(1), 38-54.
- McCann, M. A. (2005). Dietary supplement labeling: cognitive biases, market manipulation & consumer choice. *American Journal of Law & Medicine*, 31(2-3), 215-268.
- McColl, M. A. (1994). Holistic occupational therapy: historical meaning and contemporary implications. *Canadian Journal of Occupational Therapy*, 61(2), 72-77.

- McCullough, J. (2009). Factors impacting the demand for repair services of household products: the disappearing repair trades and the throwaway society. *International Journal of Consumer Studies*, 33(6), 619-626.
- McCormick, J. (1996). Medical hubris and the public health: the ethical dimension. *Journal of Clinical Epidemiology*, 49(6), 619-621.
- McCracken, G. (1989). Who is the celebrity endorser? Cultural foundations of the endorsement process. *Journal of Consumer Research*, 16(3), 310-321.
- McDonald, R. L., Chilton, S. M., Jones-Lee, M. W., & Metcalf, H. R. T. (2016). Dread and latency impacts on a VSL for cancer risk reductions. *Journal of Risk and Uncertainty*, 52(2), 137-161.
- McEvoy, L., & Duffy, A. (2008). Holistic practice – a concept analysis. *Nurse Education in Practice*, 8(6), 412-419.
- McLean, K. C. (2008). Stories of the young and the old: personal continuity and narrative identity. *Developmental Psychology*, 44(1), 254-264.
- McNay, L. (1999). Gender, habitus and the field: Pierre Bourdieu and the limits of reflexivity. *Theory, Culture & Society*, 16(1), 95-117.
- McQueen, D., Cohen, S., St John-Smith, P., & Rampes, H. (2013). Rethinking placebo in psychiatry: how and why placebo effects occur. *Advances in Psychiatric Treatment*, 19(3), 171-180.
- Mead, M. (1965). From black and white magic to modern medicine. *Medical Society in the City of New York*, 22, 130-131.
- Measham, F., & Brain, K. (2005). 'Binge' drinking, British alcohol policy and the new culture of intoxication. *Crime, Media, Culture*, 1(3), 262-283.
- Medsafe. (2018). Regulation of dietary supplements. Retrieved from <https://www.medsafe.govt.nz/regulatory/DietarySupplements/Regulation.asp> Accessed 21.6.2019
- Meeker, J. D. (2012). Exposure to environmental endocrine disruptors and child development. *Archives of Pediatrics & Adolescent Medicine*, 166(10), 952-958.
- Meffe, G. K. (1992). Techno-arrogance and halfway technologies: salmon hatcheries on the Pacific Coast of North America. *Conservation Biology*, 6(3), 350-354.

- Mejri, C. A., Bhatli, D., & Benhallam, M. (2012). Why art thou resisting? consumer resistance to the 'citizen argument' of retailers. *International Journal of Market Research*, 54(5), 707-723.
- Messerer, M., Johansson, S. E., & Wolk, A. (2001). Sociodemographic and health behaviour factors among dietary supplement and natural remedy users. *European Journal of Clinical Nutrition*, 55(12), 1104-1110.
- Metzl, J. M., & Kirkland, A. (2010). *Against health: how health became the new morality*. New York: New York University Press.
- Miles, P., & True, G. (2003). Reiki--review of a biofield therapy history, theory, practice, and research. *Alternative Therapies in Health and Medicine*, 9(2), 62-72.
- Mills, E., Ernst, E., Singh, R., Ross, C., & Wilson, K. (2003). Health food store recommendations: implications for breast cancer patients. *Breast Cancer Research*, 5(6), R170-174.
- Mimouni Chaabane, A. (2016). The double-edge effect of retailers' cause-related marketing. *International Journal of Retail and Distribution Management*, 44(6), 607-626.
- Ministry of Health. (2009). Key findings from the 2008/09 NZ Adult Nutrition Survey. Chapter 5: Dietary supplements. Wellington: Ministry of Health. Retrieved from: <http://www.health.govt.nz/publication/focus-nutrition-key-findings-2008-09-nz-adult-nutrition-survey> Accessed 11.6.14
- Mink, P. J., Mandel, J. S., Lundin, J. I., & Scurman, B. K. (2011). Epidemiologic studies of glyphosate and non-cancer health outcomes: a review. *Regulatory Toxicology and Pharmacology*, 61(2), 172-184.
- Minkowski, W. L. (1992). Women healers of the Middle Ages: selected aspects of their history. *American Journal of Public Health*, 82(2), 288-295.
- Mitchell, W. J. (2001). Romanticism and the life of things: fossils, totems, and images. *Critical Inquiry*, 28(1), 167-184.
- Møller, A. P., & Mousseau, T. A. (2006). Biological consequences of Chernobyl: 20 years on. *Trends in Ecology & Evolution*, 21(4), 200-207.
- Moncrieff, J., & Kirsch, I. (2005). Efficacy of antidepressants in adults. *BMJ : British Medical Journal*, 331(7509), 155-157.

- Monroe, C. M. (2009). The effects of therapeutic touch on pain. *Journal of Holistic Nursing*, 27(2), 85-92.
- Monroe, S. M. (2008). Modern approaches to conceptualizing and measuring human life stress. In *Annual Review of Clinical Psychology* (Vol. 4, pp. 33-52).
- Montibeller, G., & von Winterfeldt, D. (2015). Cognitive and motivational biases in decision and risk analysis. *Risk Analysis*, 35(7), 1230-1251.
- Morden, A., Jinks, C., & Ong, B. N. (2017). Temporally divergent significant meanings, biographical disruption and self-management for chronic joint pain. *Health*, 21(4), 357-374.
- Morinis, A. (1985). The ritual experience: pain and the transformation of consciousness in ordeals of initiation. *Ethos*, 13(2), 150-174.
- Morison, T., & Macleod, C. (2014). When veiled silences speak: reflexivity, trouble and repair as methodological tools for interpreting the unspoken in discourse-based data. *Qualitative Research*, 14(6), 694-711.
- Morris, C. A., & Avorn, J. (2003). Internet marketing of herbal products. *JAMA*, 290(11), 1505-1509.
- Morris, J. (2017). We consumers—tastes, rituals, and waves. In B. Folmer (Ed.), *The Craft and Science of Coffee* (pp. 457-491): Academic Press.
- Morrison, A. (2000). Entrepreneurship: what triggers it? *International Journal of Entrepreneurial Behavior & Research*, 6(2), 59-71.
- Moser, S. (2008). Personality: a new positionality? *Area*, 40(3), 383-392.
- Msweli, P., & Sargeant, A. (2001). Modelling distributor retention in network marketing organisations. *Marketing Intelligence and Planning*, 19(7), 507-514.
- Mundkur, B. (1983). *The cult of the serpent: an interdisciplinary survey of its manifestations*. Albany, NY: State University of New York.
- Mundkur, B., Bolton, R., Borden, C. E., Hultkrantz, A., Kaneko, E., Kelley, D. H., et al. (1976). The cult of the serpent in the Americas: its Asian background [and Comments and Reply]. *Current Anthropology*, 17(3), 429-455.
- Murphy, S. P., Wilkens, L. R., Monroe, K. R., Steffen, A. D., Yonemori, K. M., Morimoto, Y., et al. (2011). Dietary supplement use within a multiethnic population as measured by a

- unique inventory method. *Journal of the American Dietetic Association*, 111(7), 1065-1072.
- Murray, C. (Undated). Corinne's Holistic Pulsing Centre. Retrieved from <http://www.mindbodyspiritdirectory.co.nz/corinnes-holistic-pulsing-centre/> Accessed 8.4.2019
- Musto, D. (1992). Cocaine's history, especially the American experience. In G. R. Bock & J. Whelan (Eds.), *Cocaine: scientific and social dimensions. CIBA Foundation Symposium 166* (pp. 7-19). Chichester: John Wiley and Sons
- Mykytyn, C. E. (2006). Anti-aging medicine: predictions, moral obligations, and biomedical intervention. *Anthropological Quarterly*, 79(1), 5-31.
- Nabarro, D. (1934). Discussion on the treatment of congenital syphilis. *The British Journal of Venereal Diseases*, 10(1), 1-15.
- Náfrádi, L., Galimberti, E., Nakamoto, K., & Schulz, P. J. (2016). Intentional and unintentional medication non-adherence in hypertension: the role of health literacy, empowerment and medication beliefs. *Journal of Public Health Research*, 5(3), 762-762.
- Nagel, T. (1972). Aristotle on eudaimonia. *Phronesis*, 17(3), 252-259.
- Naghieh, A., & Parvizi, M. (2016). Exercising soft closure on lay health knowledge? Harnessing the declining power of the medical profession to improve online health information. *Social Theory & Health*, 14(3), 332-350.
- Nash, J. (2006). Mutant spiritualities in a secular age: the 'fasting body' and the hunger for pure immanence. *Journal of Religion & Health*, 45(3), 310-326.
- Nash, R. (1999). Bourdieu, 'habitus', and educational research: is it all worth the candle? *British Journal of Sociology of Education*, 20(2), 175-187.
- Natural Health Products New Zealand. (2019). About Natural Health Products New Zealand. Retrieved from <https://www.naturalhealthproducts.nz/about-natural-health-products-nz/> Accessed 27.11.2019
- Neal, S., & McLaughlin, E. (2009). Researching up? Interviews, emotionality and policy making elites. *Journal of Social Policy*, 38(4), 689-707.
- Neal, T. (2016). Land wars loom over mānuka honey. Retrieved from <https://www.radionz.co.nz/news/national/297193/land-wars-loom-over-manuka-honey> Accessed 8.4.2019

- Neale, B., & Flowerdew, J. (2003). Time, texture and childhood: the contours of longitudinal qualitative research. *International Journal of Social Research Methodology*, 6(3), 189-199.
- Neuwinger, H. D. (2000). *African traditional medicine: a dictionary of plant use and applications*. Stuttgart: Medpharm Scientific.
- New Zealand Herald. (2015). Appetite for supplements benefits few, experts say. Retrieved from https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11515327 Accessed 22.2.19
- Nichol, J., Thompson, E. A., & Shaw, A. (2013). Health professionals' and families' understanding of the role of individualised homeopathy in asthma management for children requiring secondary care: Qualitative findings from a mixed methods feasibility study. *European Journal of Integrative Medicine*, 5(5), 418-426.
- Nicolopoulou-Stamati, P., Hens, L., & Sasco, A. J. (2015). Cosmetics as endocrine disruptors: are they a health risk? *Reviews in Endocrine and Metabolic Disorders*, 16(4), 373-383.
- Nissen, N. (2010). Practitioners of Western herbal medicine and their practice in the UK: beginning to sketch the profession. *Complement Therapies in Clinical Practice*, 16(4), 181-186.
- Nissen, N. (2011). Perspectives on holism in the contemporary practice of Western herbal medicine in the UK. *Journal of Herbal Medicine*, 1(3), 76-82.
- Nolte, S., & Osborne, R. H. (2013). A systematic review of outcomes of chronic disease self-management interventions. *Quality of Life Research*, 22(7), 1805-1816.
- Noonan, C., & Patrick Noonan, W. (2006). Marketing dietary supplements in the United States: a review of the requirements for new dietary ingredients. *Toxicology*, 221(1), 4-8.
- Northcott, M. (2019). West Coast landfill cleanup too toxic for volunteers. Retrieved from <https://www.stuff.co.nz/the-press/news/111861446/west-coast-landfill-cleanup-too-toxic-for-volunteers> Accessed 23.9.2019
- Nowson, C. A., McGrath, J. J., Ebeling, P. R., Haikerwal, A., Daly, R. M., Sanders, K. M., et al. (2012). Vitamin D and health in adults in Australia and New Zealand: a position statement. *Medical Journal of Australia*, 196(11), 686-687.
- O'Brien, T. L., & Noy, S. (2015). Traditional, modern, and post-secular perspectives on science and religion in the United States. *American Sociological Review*, 80(1), 92-115.

- O'Callaghan, F. V., & Jordan, N. (2003). Postmodern values, attitudes and the use of complementary medicine. *Complementary Therapies in Medicine*, 11(1), 28-32.
- O'Mahony, S. (2019). After the golden age: what is medicine for? *Lancet*, 393(10183), 1798-1799.
- O'Reilly, M., & Parker, N. (2013). 'Unsatisfactory saturation': a critical exploration of the notion of saturated sample sizes in qualitative research. *Qualitative Research*, 13(2), 190-197.
- Oberg, E. B., Thomas, M. S., McCarty, M., Berg, J., Burlingham, B., & Bradley, R. (2014). Older adults' perspectives on naturopathic medicines impact on health aging. *Explore-the Journal of Science and Healing*, 10(1), 34-43.
- Oldham, L., Kendall, P., Cobb, B., Banning, J., & Slater, M. (2004). Perceptions of dietary supplements among older women with diabetes. *Diabetes Educator*, 30(4), 658-664.
- Oliveri, S., Howard, H. C., Renzi, C., Hansson, M. G., & Pravettoni, G. (2016). Anxiety delivered direct-to-consumer: are we asking the right questions about the impacts of DTC genetic testing? *Journal of Medical Genetics*, 53(12), 798-799.
- Olsen, C. S., & Larsen, H. O. (2003). Alpine medicinal plant trade and Himalayan mountain livelihood strategies. *The Geographical Journal*, 169(3), 243-254.
- Onel, S. (2005). Dietary supplements: a definition that is black, white, and gray. *American Journal of Law & Medicine*, 31(2-3), 341-348.
- Ottosson, A. (2010). The first historical movements of Kinesiology: scientification in the borderline between physical culture and medicine around 1850. *The International Journal of the History of Sport*, 27(11), 1892-1919.
- Owen, D. (2007). *Principles and practice of homeopathy: the therapeutic and healing process*. London Churchill Livingstone.
- Owens, K. (2015). Boundary objects in complementary and alternative medicine: Acupuncture vs. Christian Science. *Social Science & Medicine*, 128, 18-24.
- Paredes, M. (2007). *Fluid identities: Exploring ethnicity in Peru*. *CRISE WORKING PAPER No. 40* Oxford: Centre for Research on Inequality, Human Security and Ethnicity Department of International Development, University of Oxford.
- Parissopoulos, S., Timmins, F., & Daly, L. (2013). Re-exploring the ritual of the ward round. *Nursing in Critical Care*, 18(5), 219-221.

- Park, C. L. (2005). Religion as a meaning-making framework in coping with life stress. *Journal of Social Issues*, 61(4), 707-729.
- Park, C. L., Edmondson, D., & Hale-Smith, A. (2013). Why religion? Meaning as motivation. In *APA handbook of psychology, religion, and spirituality (Vol 1): Context, theory, and research*. (pp. 157-171). Washington, DC, US: American Psychological Association.
- Parmer, T., & Rogers, T. (1997). Religion and health: holistic wellness from the perspective of two African American church denominations. 42(1), 55-67.
- Patil, S. (2019). *A Case Study of the '100% Pure New Zealand' Tourism Campaign: What are the Impacts of the 100% Pure New Zealand Tourism Campaign in Shaping Visitors' and Locals' Perspectives?* (Master of International Tourism Management), Auckland University of Technology, Auckland.
- Paul, M., Davey, B., Senf, B., Stoll, C., Munstedt, K., Mucke, R., et al. (2013). Patients with advanced cancer and their usage of complementary and alternative medicine. *Journal of Cancer Research & Clinical Oncology*, 139(9), 1515-1522.
- Pawson, E., & Brooking, T. (2013). *Making a new land: environmental histories of New Zealand*. Dunedin: University of Otago.
- Peattie, S., & Peattie, K. (2003). Ready to fly solo? Reducing social marketing's dependence on commercial marketing theory. *Marketing Theory*, 3(3), 365-385.
- Pedersen, I. K. (2013). 'It can do no harm': body maintenance and modification in alternative medicine acknowledged as a non risk health regimen. *Social Science & Medicine*, 90, 56-62.
- Pedersen, I. K. (2018). Striving for self-improvement: alternative medicine considered as technologies of enhancement. *Social Theory & Health*, 16(3), 209-223.
- Pedersen, I. K., & Baarts, C. A. (2018). Shaping of embodied expertise in alternative medicine. In C. Brosnan, P. Vuolanto, & J. A. Brodin Danell (Eds.), *Complementary and alternative medicine: knowledge production and social transformation* (pp. 273-294). Cham, Switzerland: Palgrave Macmillan/Springer.
- Pellegrino, E. D. (1999). The commodification of medical and health care: the moral consequences of a paradigm shift from a professional to a market ethic. *Journal of Medicine and Philosophy*, 24(3), 243-266.
- Pelton, S. (2014). 10 delicious detox water recipes to cleanse your liver. Retrieved from <http://healthrelieving.com/detox-water-recipes/> Accessed 3.7.2019

- Pennay, A., & Moore, D. (2010). Exploring the micro-politics of normalisation: narratives of pleasure, self-control and desire in a sample of young Australian 'party drug' users. *Addiction Research & Theory*, 18(5), 557-571.
- Percival, S. S. (2016). Aged garlic extract modifies human immunity. *The Journal of Nutrition*, 146(2), 433S-436S.
- Persistence Market Research. (2017). Global market study on natural health supplements: marine segment by source expected to remain dominant in terms of value during 2016-2024. Retrieved from <https://www.persistencemarketresearch.com/market-research/natural-health-supplements-market.asp> Accessed 29.4.2019
- Perucca, P., & Gilliam, F. G. (2012). Adverse effects of antiepileptic drugs. *The Lancet Neurology*, 11(9), 792-802.
- Peters, C. L., Shelton, J., & Sharma, P. (2003). An investigation of factors that influence the consumption of dietary supplements. *Health Marketing Quarterly*, 21(1-2), 113-135.
- Petersen, A., & Lupton, D. (1996). *The new public health: health and self in the age of risk*. St Leonards, NSW: Allen and Unwin.
- Peterson, J. F., Roden, D. M., Orlando, L. A., Ramirez, A. H., Mensah, G. A., & Williams, M. S. (2019). Building evidence and measuring clinical outcomes for genomic medicine. *Lancet*, 394(10198), 604-610.
- Petrie, K. J., & Wessely, S. (2002). Modern worries, new technology, and medicine. *BMJ*, 324(7339), 690-691.
- Petrus, T. S., & Bogopa, D. L. (2007). Natural and supernatural: intersections between the spiritual and natural worlds in African witchcraft and healing with reference to Southern Africa. *Indo-Pacific Journal of Phenomenology*, 7(1), 1-10.
- Piccolo, J. J. (2017). Intrinsic values in nature: objective good or simply half of an unhelpful dichotomy? *Journal for Nature Conservation*, 37, 8-11.
- Pickering, M., & Keightley, E. (2006). The modalities of nostalgia. *Current Sociology*, 54(6), 919-941.
- Pinquart, M., & Sorensen, S. (2001). Influences on loneliness in older adults: a meta-analysis. *Basic and Applied Social Psychology*, 23(4), 245-266.

- Pinsent, P. (2002). Fate and fortune in a modern fairy tale: Louis Sachar's holes. *Children's Literature in Education*, 33(3), 203-212.
- Plessi, M. (2003). Vinegar. In L. Trugo & P. M. Finglas (Eds.), *Encyclopedia of Food Sciences and Nutrition* [online] <https://www.sciencedirect.com/topics/food-science/vinegar> (2nd ed.). Baltimore, MD: Academic Press
- Plsek, P. E., & Greenhalgh, T. (2001). The challenge of complexity in health care. *BMJ*, 323(7313), 625-628.
- Pope, C., & Mays, N. (2006). *Qualitative research in health care* (3rd ed.). London: BMJ Books.
- Popp-Baier, U. (2001). Narrating embodied aims. self-transformation in conversion narratives—a psychological analysis. *Forum: Qualitative Research*, 2(3), Article 18.
- Porter, R. (1993). *Disease, medicine and society in England, 1550-1860* (2nd ed.). Cambridge: Cambridge University Press.
- Porter, R. (1997). *The greatest benefit to mankind: a medical history of humanity from antiquity to the present*. London: Harper Collins.
- Portier, C. J., Armstrong, B. K., Baguley, B. C., Baur, X., Belyaev, I., Bellé, R., et al. (2016). Differences in the carcinogenic evaluation of glyphosate between the International Agency for Research on Cancer (IARC) and the European Food Safety Authority (EFSA). *Journal of Epidemiology and Community Health*, 70(8), 741-745.
- Potts, A. (2004). Deleuze on Viagra (or, what can a 'Viagra-Body' do?). *Body & Society*, 10(1), 17-36.
- Potvin, L., Bisset, S. L., & Walz, L. (2010). Participatory action research: theoretical perspectives on the challenges of researching action. In I. Bourgeault, R. R. Dingwall, & R. de Vries (Eds.), *Sage Handbook of Qualitative Methods in Health Research* (pp. 433-453). London: Sage
- Powell, M. A., Smith, A. B., & Taylor, N. (2016). Rural childhood in New Zealand: a unique site of children's agency and social participation. *Children Australia*, 41(4), 275-284.
- Powers, M. A., Bardsley, J., Cypress, M., Duker, P., Funnell, M. M., Hess Fischl, A., et al. (2015). Diabetes self-management education and support in Type 2 diabetes: A Joint Position Statement of the American Diabetes Association, the American Association of Diabetes Educators, and the Academy of Nutrition and Dietetics. *Journal of the Academy of Nutrition and Dietetics*, 115(8), 1323-1334.

- Pratt, M. G. (2000). The good, the bad, and the ambivalent: managing identification among Amway distributors. *Administrative Science Quarterly*, 45(3), 456-493.
- Prinz, V., & Endres, M. (2011). Statins and stroke: prevention and beyond. *Current Opinion in Neurology*, 24(1), 75-80.
- Pullon, S., Morgan, S., Macdonald, L., McKinlay, E., & Gray, B. (2016). Observation of interprofessional collaboration in primary care practice: a multiple case study. *Journal of Interprofessional Care*, 30(6), 787-794.
- Rabinowitz, P., & Conti, L. (2013). Links among human health, animal health, and ecosystem health. *Annual Review of Public Health*, 34, 189-204
- Raingruber, B., & Robinson, C. (2007). The effectiveness of tai chi, yoga, meditation and reiki healing sessions in promoting health and enhancing problem solving abilities of registered nurses. *Issues in Mental Health Nursing*, 28(10), 1141-1155.
- Rajan, K. B., Hebert, L. E., Scherr, P. A., Mendes de Leon, C. F., & Evans, D. A. (2012). Disability in basic and instrumental activities of daily living is associated with faster rate of decline in cognitive function of older adults. *The Journals of Gerontology: Series A*, 68(5), 624-630.
- Ramachandran, D., Kite, J., Vassallo, A. J., Chau, J. Y., Partridge, S., Freeman, B., et al. (2018). Food trends and popular nutrition advice online - implications for public health. *Online Journal of Public Health Informatics*, 10(2), e213-e213.
- Ransohoff, D. F., & Khoury, M. J. (2010). Personal genomics: information can be harmful. *European Journal of Clinical Investigation*, 40(1), 64-68.
- Razali, S. M., Khan, U. A., & Hasanah, C. I. (1996). Belief in supernatural causes of mental illness among Malay patients: impact on treatment. *Acta Psychiatrica Scandinavica*, 94(4), 229-233.
- Reddan, B. (2016). Thinking through things: magical objects, power, and agency in French fairy tales. *Marvels & Tales*, 30(2), 191-209.
- Reed, R. (2002). From 'gee whizz' to 'shock-horror': the limited frameworks of science journalism. *Australian Journal of Communication*, 29(3), 43-58.
- Reedy, J., Haines, P. S., Steckler, A., & Campbell, M. K. (2005). Qualitative comparison of dietary choices and dietary supplement use among older adults with and without a history of colorectal cancer. *Journal of Nutrition Education & Behavior*, 37(5), 252-258.

- Rees, W. L. (1976). Stress, distress and disease. The Presidential Address at the Annual Meeting of the Royal College of Psychiatrists, held in London, 9th July, 1975. *The British Journal of Psychiatry*, 128(1), 3-18.
- Reiche, E. M. V., Nunes, S. O. V., & Morimoto, H. K. (2004). Stress, depression, the immune system, and cancer. *The Lancet Oncology*, 5(10), 617-625.
- Reichenpfader, U., Wickström, A., Abrandt Dahlgren, M., & Carlford, S. (2019). 'In the hospital all is taken care of': a practice-theoretical approach to understand patients' medication use. *Sociology of Health & Illness*, 42(1), 50-64.
- Reid, I. R., Bristow, S. M., & Bolland, M. J. (2015). Cardiovascular complications of calcium supplements. *Journal of Cellular Biochemistry*, 116(4), 494-501.
- Rey, T. (2004). Marketing the goods of salvation: Bourdieu on religion. *Religion*, 34(4), 331-343.
- Ricard, M. (2011). The Dalai Lama: happiness through wisdom and compassion. *International Journal of Wellbeing*, 1(2).
- Rice, P. L., & Ezzy, D. (1999). *Qualitative research methods: a health focus*. Oxford: Oxford University Press.
- Richards, D. G., McMillin, D. L., Mein, E. A., & Nelson, C. D. (2006). Colonic irrigations: a review of the historical controversy and the potential for adverse effects. *Journal of Alternative & Complementary Medicine*, 12(4), 389-393.
- Richards, T., Coulter, A., & Wicks, P. (2015). Time to deliver patient centred care. *BMJ : British Medical Journal*, 350, h530.
- Richardson, L. (1990). Narrative and sociology. *Journal of Contemporary Ethnography*, 19(1), 116-135.
- Rideout, C. A., & Barr, S. I. (2009). "Restrained eating" vs "trying to lose weight": how are they associated with body weight and tendency to overeat among postmenopausal women? *Journal of the American Dietetic Association*, 109(5), 890-893.
- Ried, K. (2016). Garlic lowers blood pressure in hypertensive individuals, regulates serum cholesterol, and stimulates immunity: an updated meta-analysis and review. *The Journal of Nutrition*, 146(2), 389S-396S.
- Rindfleish, J. (2005). Consuming the self: new age spirituality as "social product" in consumer society. *Consumption Markets & Culture*, 8(4), 343-360.

- Rivlin, R. S. (2001). Historical perspective on the use of garlic. *The Journal of Nutrition*, 131(3), 951S-954S.
- RNZGP. (Undated). Royal New Zealand College of General Practitioners. What is general practice? Retrieved from https://www.rnzcgp.org.nz/RNZCGP/Im_a_Patient/What_is_general_practice/RNZCGP/Im_a_patient/What_is_general_practice.aspx?hkey=ac794013-53c3-450a-aef3-3958fb26f8fa Accessed 10.4.2019
- Robbins, R. A. (2005). Harry Potter, ruby slippers and Merlin: telling the client's story using the characters and paradigm of the archetypal hero's journey. *Seattle University Law Review* 29(4), 767-804.
- Roberts, M., Norman, W., Minhinnick, N., Wihongi, D., & Kirkwood, C. (1995). Kaitiakitanga: Māori perspectives on conservation. *Pacific Conservation Biology*, 2(1), 7-20.
- Robertson, N., Polonsky, M., & McQuilken, L. (2014). Are my symptoms serious Dr Google? A resource-based typology of value co-destruction in online self-diagnosis. *Australasian Marketing Journal*, 22(3), 246-256.
- Robinson, J. D. (2001). Closing medical encounters: two physician practices and their implications for the expression of patients' unstated concerns. *Social Science & Medicine*, 53(5), 639-656.
- Robinson, J. D. (2006). Getting down to business: talk, gaze and body orientation during openings of doctor-patient consultations. *Human Communication Research*, 25(1), 97-123.
- Roche, C., & Kelliher, F. (2014). Giving "best advice": proposing a framework of community pharmacist professional judgement formation. *Pharmacy*, 2(1), 74-85.
- Roininen, K., Arvola, A., & Lähtenmäki, L. (2006). Exploring consumers' perceptions of local food with two different qualitative techniques: laddering and word association. *Food Quality and Preference*, 17(1), 20-30.
- Romm, J. (2011). The next dust bowl. *Nature*, 478, 450.
- Rona, Z. P. (2018). Top 10 supplements for preventing and reversing Alzheimers, dementia and more. *Vitality Magazine*, December 20.
- Ronda, G., Portegijs, P., Dinant, G.-J., Buntinx, F., Norg, R., & van der Weijden, T. (2009). Use of diagnostic self-tests on body materials among Internet users in the Netherlands: prevalence and correlates of use. *BMC Public Health*, 9(1), 100.

- Rose, N. (1996). *Inventing our selves: psychology, power, and personhood*. Cambridge: Cambridge University Press
- Rosner, A. L., & Cuthbert, S. C. (2012). Applied kinesiology: distinctions in its definition and interpretation. *Journal of Bodywork and Movement Therapies*, 16(4), 464-487.
- Rountree, K. (2006). Performing the divine: neo-Pagan pilgrimages and embodiment at sacred sites. *Body & Society*, 12(4), 95-115.
- Rouse, W. H. D. (1957). Ulysses and Circe. In W. H. D. Rouse (Ed.), *Gods, heroes, and men of Ancient Greece: mythology's great tales of valour and romance* (pp. 175). New York: Signet.
- Roy, E. A. (2016). Honey wars: crime and killings in New Zealand's booming mānuka industry. Retrieved from <https://www.theguardian.com/world/2016/nov/04/manuka-honey-wars-new-zealand-crime-booming-industry-poisoning-beatings> Accessed 8.4.2019
- Rozin, P., Fischle, C., & Shields-Argeles, C. (2009). Additivity dominance: additives are more potent and more often lexicalized across languages than are "subtractives". *Judgment and Decision Making*, 4(6), 475-478.
- Rozin, P., Fischler, C., & Shields-Argeles, C. (2012). European and American perspectives on the meaning of natural. *Appetite*, 59(2), 448-455.
- Rozin, P., Spranca, M., Krieger, Z., Neuhaus, R., Surillo, D., Swerdlin, A., et al. (2004). Preference for natural: instrumental and ideational/moral motivations, and the contrast between foods and medicines. *Appetite*, 43(2), 147-154.
- Russo-Netzer, P., & Mayselless, O. (2017). Spiritual change outside institutional religion as inner work on the self: deep within and beyond. *Journal of Adult Development*, 24(1), 1-14.
- Ryan, R. M., Huta, V. A., & Deci, E. L. (2008). Living well: a self-determination theory perspective on eudaimonia. *Journal of Happiness Studies*, 9, 139-170.
- Ryan, R. M., & Martela, F. (2016). Eudaimonia as a way of living: connecting Aristotle with self-determination theory. In J. Vittersø (Ed.), *Handbook of Eudaimonic Well-Being* (pp. 109-122). Cham: Springer International Publishing.
- Ryff, C. D. (2012). Existential well-being and health. In P. T. Wong (Ed.), *The human quest for meaning: theories, research, and applications* (2nd ed., pp. 233-255). London: Routledge

- Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: a eudaimonic approach to psychological well-being *Journal of Happiness Studies*, 9(1), 13-39.
- Saher, M., Lindeman, M., & Hursti, U. K. (2006). Attitudes towards genetically modified and organic foods. *Appetite*, 46(3), 324-331.
- Saks, M. (2003). Bringing together the orthodox and alternative in health care. *Complementary Therapies in Medicine*, 11(3), 142-145.
- Salmon, P., & Hall, G. M. (2003). Patient empowerment and control: a psychological discourse in the service of medicine. *Social Science & Medicine*, 57(10), 1969-1980.
- Sanders, C., Donovan, J., & Dieppe, P. (2002). The significance and consequences of having painful and disabled joints in older age: co-existing accounts of normal and disrupted biographies. *Sociology of Health & Illness*, 24(2), 227-253.
- Saquib, J., Rock, C. L., Natarajan, L., Saquib, N., Newman, V. A., Patterson, R. E., et al. (2011). Dietary intake, supplement use, and survival among women diagnosed with early-stage breast cancer. *Nutrition & Cancer*, 63(3), 327-333.
- Sarino, L. V., Dang, K. H., Dianat, N., Djihanian, H., Natanian, N., Hudmon, K. S., et al. (2007). Drug interaction between oral contraceptives and St. John's Wort: appropriateness of advice received from community pharmacists and health food store clerks. *Journal of the American Pharmacists Association: JAPhA*, 47(1), 42-47.
- Sayin, H. U. (2014). The consumption of psychoactive plants in ancient global and Anatolian cultures during religious rituals: the roots of the eruption of mythological figures and common symbols in religions and myths. *NeuroQuantology*, 12(2), 276-296.
- Schippers, M. C., & Van Lange, P. A. M. (2006). The psychological benefits of superstitious rituals in top sport: a study among top sportspersons. *Journal of Applied Social Psychology*, 36(10), 2532-2553.
- Schnabel, L., Kesse-Guyot, E., Allès, B., Touvier, M., Srour, B., Hercberg, S., et al. (2019). Association between ultraprocessed food consumption and risk of mortality among middle-aged adults in France. *JAMA Internal Medicine*, 179, 490-498.
- Schulman - Green, D., Jaser, S., Martin, F., Alonzo, A., Grey, M., Ruth, M., et al. (2012). Processes of self - management in chronic illness. *Journal of Nursing Scholarship*, 44(2), 136-144.
- Schwarz, K. A., Pfister, R., & Buchel, C. (2016). Rethinking explicit expectations: connecting placebos, social cognition, and contextual perception. *Trends in Cognitive Sciences*, 20(6), 469-480.

- Schwitzer, G., Mudur, G., Henry, D., Wilson, A., Goozner, M., Simbra, M., et al. (2005). What are the roles and responsibilities of the media in disseminating health information? *PLoS medicine*, 2(7), e215.
- Sekhri, K., & Kaur, K. (2014). Public knowledge, use and attitude toward multivitamin supplementation: a cross-sectional study among general public. *International Journal of Applied & Basic Medical Research*, 4(2), 77-80.
- Selye, H. (1973). The evolution of the stress concept: the originator of the concept traces its development from the discovery in 1936 of the alarm reaction to modern therapeutic applications of syntoxic and catatoxic hormones. *American Scientist*, 61(6), 692-699.
- Shahidi, F., & Zhong, Y. (2010). Novel antioxidants in food quality preservation and health promotion. *European Journal of Lipid Science and Technology*, 112(9), 930-940.
- Shamasundar, C. (2008). Relevance of ancient Indian wisdom to modern mental health—a few examples. *Indian Journal of Psychiatry*, 50(2), 138.
- Sheldon, P. (2010). Pressure to be perfect: influences on college students' body esteem. *Southern Communication Journal*, 75(3), 277-298.
- Shepherd, J., & Bachis, E. (2014). Changing supply and demand for fish oil. *Aquaculture Economics & Management*, 18(4), 395-416.
- Shibley, M. A. (2011). Sacred nature: earth-based spirituality as popular religion in the Pacific Northwest. *Journal for the Study of Religion, Nature & Culture*, 5(2), 164-185.
- Shilling, C. (2002). Culture, the 'sick role' and the consumption of health. *The British Journal of Sociology*, 53(4), 621-638.
- Shroff, F. M. (2011). Conceptualising holism in international interdisciplinary critical perspective: toward a framework for understanding holistic health. *Social Theory & Health*, 9(3), 244-255.
- Sideman, B. B., & Kredel, F. (1977). Twelve dancing princesses. In *The World's Best Fairy Tales*. Pleasantville, NY: Readers Digest.
- Siliquini, R., Ceruti, M., Lovato, E., Bert, F., Bruno, S., De Vito, E., et al. (2011). Surfing the internet for health information: an italian survey on use and population choices. *BMC Medical Informatics and Decision Making*, 11(1), 21.

- Sin, C. H. (2003). Interviewing in 'place': the socio-spatial construction of interview data. *Area*, 35(3), 305-312.
- Sinding, C., & Wiernikowski, J. (2008). Disruption foreclosed: older women's cancer narratives. *Health*, 12(3), 389-411.
- Singer, J., & Fisher, K. (2007). The impact of co-option on herbalism: a bifurcation in epistemology and practice. *Health Sociology Review*, 16(1), 18-26.
- Singh, J. A., Bharat, A., & Edwards, N. L. (2015). An internet survey of common treatments used by patients with gout including cherry extract and juice and other dietary supplements. *Journal of Clinical Rheumatology*, 21(4), 225-226.
- Skjong, R. (2005). The etymology of risk. Retrieved from <http://research.dnv.com/skj/Papers/ETYMOLOGY-OF-RISK.pdf> Accessed 8.8.2018
- Slashinski, M. J., McCurdy, S. A., Achenbaum, L. S., Whitney, S. N., & McGuire, A. L. (2012). "Snake-oil," "quack medicine," and "industrially cultured organisms:" biovalue and the commercialization of human microbiome research. *BMC Medical Ethics*, 13(1), 28.
- Slivniak, D. M. (2003). The garden of double messages: deconstructing hierarchical oppositions in the garden story. *Journal for the Study of the Old Testament*, 27(4), 439-460.
- Smith, J. K. (1990). Alternative research paradigms and the problem of criteria. In E. G. Guba (Ed.), *The paradigm dialog* (pp. 167-187). Newbury Park, CA: Sage.
- Smith, M. A. (2012). Pharmacists and the primary care workforce. *Annals of Pharmacotherapy*, 46(11), 1568-1571.
- Smith, M. C. (2002). Health, healing and the myth of the hero journey. *Advances in Nursing Science*, 24(4), 1-13.
- Smith, S. (1953). Magic, medicine, and religion; the persistence of an idea. *British Medical Journal*, 1(4815), 847-851.
- Snodgrass, J. G., & Tiedje, K. (2008). Indigenous nature reverence and conservation - seven ways of transcending an unnecessary dichotomy. *Journal for the Study of Religion, Nature and Culture*, 2(1), 6-29.
- Soane, E., Dewberry, C., & Narendran, S. (2010). The role of perceived costs and perceived benefits in the relationship between personality and risk - related choices. *Journal of Risk Research*, 13(3), 303-318.

- Sointu, E. (2013). Complementary and alternative medicines, embodied subjectivity and experiences of healing. *Health: an Interdisciplinary Journal for the Social Study of Health, Illness & Medicine*, 17(5), 530-545.
- Somerfield, M. R., & McCrae, R. R. (2000). Stress and coping research: methodological challenges, theoretical advances, and clinical applications. *American Psychologist*, 55(6), 620-625.
- Soomro, Z. A., Shah, M. H., & Ahmed, J. (2016). Information security management needs more holistic approach: a literature review. *International Journal of Information Management*, 36(2), 215-225.
- Soper, K. (1995). *What is nature? Culture, politics and the non-human*. Oxford: Blackwell.
- Soper, K. (1998). Representing nature. *CNS: Capitalism, Nature, Socialism*, 9(4), 61-65.
- Soroka, S. N. (2006). Good news and bad news: asymmetric responses to economic information. *Journal of Politics*, 68(2), 372-385.
- Sosna, M., Trevinyo-Rodríguez, R. N., & Velamuri, S. R. (2010). Business model innovation through trial-and error learning: the Naturhouse Case. *Long Range Planning*, 43(2), 383-407.
- Spencer, J. W., & Triche, E. (1994). Media constructions of risk and safety: differential framings of hazard events. *Sociological Inquiry*, 64(2), 199-213.
- Springmann, M., Mason-D'Croz, D., Robinson, S., Garnett, T., Godfray, H. C. J., Gollin, D., et al. (2016). Global and regional health effects of future food production under climate change: a modelling study. *Lancet*, 387(10031), 1937-1946.
- Stanziani, A. (2008). Defining "natural product" between public health and business, 17th to 21st centuries. *Appetite*, 51(1), 15-17.
- Star, S. L., & Griesemer, J. R. (1989). Institutional ecology, 'translations' and boundary objects: amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. *Social Studies of Science*, 19(3), 387-420.
- Starr, M. A. (2007). Saving, spending, and self-control: cognition versus consumer culture. *Review of Radical Political Economics*, 39(2), 214-229.
- Starr, R. R. (2015). Too little, too late: ineffective regulation of dietary supplements in the United States. *American Journal of Public Health*, 105(3), 478-485.

- Statistics New Zealand. (2013). 2013 Census QuickStats about Māori. Retrieved from www.stats.govt.nz. Accessed 1.4.2016
- Stephenson, J., Crane, S. F., Levy, C., & Maslin, M. (2013). Population, development, and climate change: links and effects on human health. *Lancet*, 382(9905), 1665-1673.
- Steptoe, A., Wardle, J., Cui, W., Bellisle, F., Zotti, A.-M., Baranyai, R., et al. (2002). Trends in smoking, diet, physical exercise, and attitudes towards health in European university students from 13 Countries, 1990–2000. *Preventive Medicine*, 35(2), 97-104.
- Stickel, F., Droz, S., Patsenker, E., Bögli-Stuber, K., Aebi, B., & Leib, S. L. (2009). Severe hepatotoxicity following ingestion of Herbalife® nutritional supplements contaminated with *Bacillus subtilis*. *Journal of Hepatology*, 50(1), 111-117.
- Stokes, T., Dixon-Woods, M., & McKinley, R. K. (2004). Ending the doctor–patient relationship in general practice: a proposed model. *Family Practice*, 21(5), 507-514.
- Stoneman, P., Sturgis, P., & Allum, N. (2013). Understanding support for complementary and alternative medicine in general populations: use and perceived efficacy. *Health: an Interdisciplinary Journal for the Social Study of Health, Illness & Medicine*, 17(5), 512-529.
- Stott, P. A., Christidis, N., Otto, F. E. L., Sun, Y., Vanderlinden, J.-P., van Oldenborgh, G. J., et al. (2016). Attribution of extreme weather and climate-related events. *Wiley Interdisciplinary Reviews: Climate Change*, 7(1), 23-41.
- Strang, V. (2004). *The meaning of water*. New York: Berg.
- Sturgeon, D. (2014). The business of the NHS: the rise and rise of consumer culture and commodification in the provision of healthcare services. *Critical Social Policy*, 34(3), 405-416.
- Suleria, H. A. R., Osborne, S., Masci, P., & Gobe, G. (2015). Marine-based nutraceuticals: an innovative trend in the food and supplement industries. *Marine Drugs*, 13(10), 6336-6351.
- Sundström, J. F., Albiñ, A., Boqvist, S., Ljungvall, K., Marstorp, H., Martiin, C., et al. (2014). Future threats to agricultural food production posed by environmental degradation, climate change, and animal and plant diseases – a risk analysis in three economic and climate settings. *Food Security*, 6(2), 201-215.
- Suziedelyte, A. (2012). How does searching for health information on the Internet affect individuals' demand for health care services? *Social Science & Medicine*, 75(10), 1828-1835.

- Swaffield, S., & Fairweather, J. (1998). In search of Arcadia: the persistence of the rural idyll in New Zealand rural subdivisions. *Journal of Environmental Planning and Management*, 41(1), 111-128.
- Swallow, J. (2019). Constructing classification boundaries in the memory clinic: negotiating risk and uncertainty in constituting mild cognitive impairment. *Sociology of Health & Illness*, doi: 10.1111/1467-9566.13016.
- Tanaka, P., & Blatman, J. (2010). Healthy conversations. The supplement industry redefines itself. *Marketing Health Services*, 30(4), 24-27.
- Taonui, R. (2014). Whakapapa – genealogy - What is whakapapa? Retrieved from <http://www.TeAra.govt.nz/en/whakapapa-genealogy/page-1> Accessed 21.10.15
- Tarn, D. M., Guzman, J. R., Good, J. S., Wenger, N. S., Coulter, I. D., & Paterniti, D. A. (2014). Provider and patient expectations for dietary supplement discussions. *Journal of General Internal Medicine*, 29(9), 1242-1249.
- Taylor, A. (2000). 'The sun always shines in Perth': a post-colonial geography of identity, memory and place. *Australian Geographical Studies*, 38(1), 27-35.
- Taylor, D. M., Walsham, N., Taylor, S. E., & Wong, L. F. (2006). Complementary and alternative medicines versus prescription drugs: perceptions of emergency department patients. *Emergency Medicine Journal*, 23(4), 266-268.
- Temple, N. J. (2010). The marketing of dietary supplements in North America: the emperor is (almost) naked. *Journal of Alternative & Complementary Medicine*, 16(7), 803-806.
- Temple, N. J. (2012). The marketing of dietary supplements: profit before health. In N. J. Temple, T. Wilson, & J. D. R. Jacobs (Eds.), *Nutritional Health: Strategies for Disease Prevention* (pp. 435-449). Totowa, NJ: Humana Press.
- Temple, N. J., Eley, D., & Nowrouzi, B. (2009). Advice on dietary supplements: a comparison of health food stores and pharmacies in Canada. *Journal of the American College of Nutrition*, 28(6), 674-677.
- Teychenne, M., Ball, K., & Salmon, J. (2008). Physical activity and likelihood of depression in adults: a review. *Preventive Medicine*, 46(5), 397-411.
- Thaker, P. H., Lutgendorf, S. K., & Sood, A. K. (2007). The neuroendocrine impact of chronic stress on cancer. *Cell Cycle*, 6(4), 430-433.

- Theou, O., Blodgett, J. M., Godin, J., & Rockwood, K. (2017). Association between sedentary time and mortality across levels of frailty. *Canadian Medical Association Journal*, 189(33), E1056-E1064.
- Thompson, C. J. (2003). Natural health discourses and the therapeutic production of consumer resistance. *Sociological Quarterly*, 44(1), 81-107.
- Thompson, J. J., & Nichter, M. (2007). The compliance paradox: what we need to know about "real-world" dietary supplement use in the United States. *Alternative Therapies in Health & Medicine*, 13(2), 48-55.
- Thompson, L., & Bidwell, S. (2015). Space, time, and emotion in the community pharmacy. *Health & Place*, 34, 251-256.
- Thompson, L., & Kumar, A. (2011). Responses to health promotion campaigns: resistance, denial and othering. *Critical Public Health*, 21(1), 105-117.
- Thomson, A. (2008). Trinkets and treasures: consuming Jane Austen. *Persuasions On-line*, 28(2), 1-12.
- Thomson, D., & Hassenkamp, A.-M. (2008). The social meaning and function of food rituals in healthcare practice: an ethnography. *Human Relations*, 61(12), 1775-1802.
- Thorne, S. E. (2001). People and their parts: deconstructing the debates in theorizing nursing's clients. *Nursing Philosophy*, 2(3), 259-262.
- Tierney, K. J. (1999). Toward a critical sociology of risk. *Sociological Forum*, 14(2), 215-242.
- Tiffin, J. (1999). Digitally remythicised: Star Wars, modern popular mythology and Madam and Eve. *Journal of Literary Studies*, 15(1-2), 66-80.
- Todd, A. M. (2004). The aesthetic turn in green marketing: environmental consumer ethics of natural personal care products. *Ethics & the Environment*, 9(2), 86-102.
- Tolkien, J. R. R. (1974). *The Fellowship of the Ring*. London: Unwin.
- Tomes, N. (2006). Patients or health care consumers? Why the history of contested terms matters. In R. A. Stevens, C. E. Rosenberg, & L. R. Burns (Eds.), *History and health policy in the United States: putting the past back in* (pp. 83-110). New Brunswick, NJ: Rutgers University Press.
- Totelin, L. (2015). When foods become remedies in ancient Greece: the curious case of garlic and other substances. *Journal of Ethnopharmacology*, 167, 30-37.

- Truter, I. (2007). African traditional healers: cultural and religious beliefs intertwined in a holistic way. *South African Pharmaceutical Journal* 74(8), 56-60.
- Tsai, H.-H., Lin, H.-W., Simon Pickard, A., Tsai, H.-Y., & Mahady, G. B. (2012). Evaluation of documented drug interactions and contraindications associated with herbs and dietary supplements: a systematic literature review. *International Journal of Clinical Practice*, 66(11), 1056-1078.
- Tulloch, J., & Lupton, D. (2003). *Risk and everyday life*. London: Sage.
- Tustin, N. (2010). The role of patient satisfaction in online health information seeking. *Journal of Health Communication*, 15(1), 3-17.
- Ulver-Sneistrup, S., Askegaard, S., & Kristensen, D. B. (2011). The new work ethics of consumption and the paradox of mundane brand resistance. *Journal of Consumer Culture*, 11(2), 215-238.
- Underwood, R. L. (2003). The communicative power of product packaging: creating brand identity via lived and mediated experience. *Journal of Marketing Theory and Practice*, 11(1), 62-76.
- Ung, C. O. L., Harnett, J., & Hu, H. (2017). Community pharmacist's responsibilities with regards to traditional medicine/complementary medicine products: a systematic literature review. *Research In Social & Administrative Pharmacy*, 13(4), 686-716.
- University of Otago and Ministry of Health. (2011). A focus on nutrition: key findings of the 2008/09 New Zealand Adult Nutrition Survey. Wellington: Ministry of Health. Retrieved from: <http://www.health.govt.nz/system/files/documents/publications/a-focus-on-nutrition-v2.pdf> Accessed 15.5.14
- Van Buul, V. J., & Brouns, F. J. (2015). Nutrition and health claims as marketing tools. *Critical Reviews in Food Science and Nutrition*, 55(11), 1552-1560.
- Van Koppen, C. (2000). Resource, arcadia, lifeworld. Nature concepts in environmental sociology. *Sociologia Ruralis*, 40(3), 300-318.
- Van Royen, P., Beyer, M., Chevallier, P., Eilat-Tsanani, S., Lionis, C., Peremans, L., et al. (2010). The research agenda for general practice/family medicine and primary health care in Europe. Part 3. Results: Person centred care, comprehensive and holistic approach. *European Journal of General Practice*, 16(2), 113-119.
- Vanderbroek, I., Calewaert, J.-C., De jonckheere, S., Sanca, S., Semol, L., Van Damme, P., et al. (2004). Use of medicinal plants and biopharmaceuticals by indigenous communities in

- the Bolivian Andes and Amazon. *Bulletin of the World Health Organisation*, 82(4), 243-250.
- Varecha, V. (1982). The two brothers. In V. Varecha (Ed.), *Grimms Fairy Tales translated by Vladimir Varecha* (pp. 105-115). London: Cathay Books.
- Varki, A. (2009). Human uniqueness and the denial of death. *Nature*, 460(7256), 684-684.
- Varma, R., & Varma, D. R. (2005). The Bhopal Disaster of 1984. *Bulletin of Science, Technology and Society*, 25(1), 37-45.
- Vatanparast, H., Adolphe, J. L., & Whiting, S. (2010). Socio-economic status and vitamin/mineral supplement use in Canada. *Health Reports* 21(4), 1-7.
- Veitch, K. (2010). The government of health care and the politics of patient empowerment: New Labour and the NHS reform agenda in England. *Law & Policy*, 32(3), 313-331.
- Ventola, C. L. (2010). Current issues regarding complementary and alternative medicine (CAM) in the United States: Part 1: The widespread use of CAM and the need for better-informed health care professionals to provide patient counseling. *P & T: a peer-reviewed journal for formulary management*, 35(8), 461-468.
- Verma, H. V. (2013). Coffee and tea: socio-cultural meaning, context and branding. *Asia-Pacific Journal of Management Research and Innovation*, 9(2), 157-170.
- Vickers, K. A., Jolly, K. B., & Greenfield, S. M. (2006). Herbal medicine: women's views, knowledge and interaction with doctors: a qualitative study. *BMC Complementary & Alternative Medicine*, 6, 40.
- Viksveen, P., & Relton, C. (2017). Depressed patients' experiences with and perspectives on treatment provided by homeopaths. A qualitative interview study embedded in a trial. *European Journal of Integrative Medicine*, 15, 73-80.
- Waddington, F., Naunton, M., Kyle, G., Thomas, J., Cooper, G., & Waddington, A. (2015). A systematic review of community pharmacist therapeutic knowledge of dietary supplements. *International Journal of Clinical Pharmacy*, 37(3), 439-446.
- Wager, T. D., & Atlas, L. Y. (2015). The neuroscience of placebo effects: connecting context, learning and health. *Nature Reviews Neuroscience*, 16(7), 403-418.
- Wager, T. D., Scott, D. J., & Zubieta, J. K. (2007). Placebo effects on human mu-opioid activity during pain. *Proceedings of the National Academy of Sciences of the United States of America*, 104(26), 11056-11061.

- Wahlberg, A. (2008). Pathways to plausibility: when herbs become pills. *BioSocieties*, 3(1), 37-56.
- Waisse, S., & Bonamin, L. V. (2016). Explanatory models for homeopathy: from the vital force to the current paradigm. *Homeopathy*, 105(03), 280-285.
- Waitangi Tribunal. (2011). *Ko Aotearoa tenei: a report into claims concerning New Zealand law and policy affecting Māori culture and identity. Te taumatua tuatahi. (Waitangi Tribunal Report WAI 262)*. Wellington: Legislation Direct.
- Wald, D. S., & Wald, N. J. (2012). Implementation of a simple age-based strategy in the prevention of cardiovascular disease: the Polypill approach. *Journal of Evaluation in Clinical Practice*, 18(3), 612-615.
- Walji, R., Boon, H., Barnes, J., Austin, Z., Welsh, S., & Baker, G. R. (2010). Consumers of natural health products: natural-born pharmacovigilantes? *BMC Complementary and Alternative Medicine*, 10.
- Walklate, S. (2004). The protective society? Seeking safety in an insecure world. 3(1), 38-48.
- Wallis, P. (2006). Apothecaries and the consumption and retailing of medicines in early modern London. In L. H. Curth (Ed.), *From physick to pharmacology: five hundred years of British drug retailing* (pp. 13-28). Aldershot: Ashgate Publishing.
- Walseth, K. (2008). Bridging and bonding social capital in sport—experiences of young women with an immigrant background. *Sport, Education and Society*, 13(1), 1-17.
- Wang, Y., & Lim, H. (2012). The global childhood obesity epidemic and the association between socio-economic status and childhood obesity. *International Review of Psychiatry*, 24(3), 176-188.
- Wang, Y., Wang, L., & Qu, W. (2017). New national data show alarming increase in obesity and noncommunicable chronic diseases in China. *European Journal of Clinical Nutrition*, 71(1), 149-150.
- Warburton, D. E., Nicol, C. W., & Bredin, S. D. (2006). Health benefits of physical activity: the evidence. *CMAJ Canadian Medical Association Journal*, 174(6), 801-809.
- Wardle, J., von Wagner, C., Kralj-Hans, I., Halloran, S. P., Smith, S. G., McGregor, L. M., et al. (2016). Effects of evidence-based strategies to reduce the socioeconomic gradient of uptake in the English NHS Bowel Cancer Screening Programme (ASCEND): four cluster-randomised controlled trials. *The Lancet*, 387(10020), 751-759.

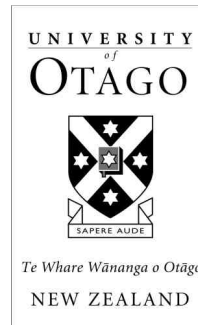
- Wardle, J. L., Adams, J., & Lui, C.-W. (2010). A qualitative study of naturopathy in rural practice: a focus upon naturopaths' experiences and perceptions of rural patients and demands for their services. *BMC Health Services Research*, 10, 185.
- Waring, J., & Latif, A. (2018). Of shepherds, sheep and sheepdogs. Governing the adherent self through complementary and competing 'pastorates'. *Sociology*, 52(05), 1069-1086.
- Waskul, D. D., & van der Riet, P. (2002). The abject embodiment of cancer patients: dignity, selfhood, and the grotesque body. *Symbolic Interaction*, 25(4), 487-513.
- Waterman, A. S. (1990). The relevance of Aristotle's conception of eudaimonia for the psychological study of happiness. *Theoretical & Philosophical Psychology*, 10(1), 39-44.
- Waxman, H. A. (2005). The lessons of Vioxx — drug safety and sales. *New England Journal of Medicine*, 352(25), 2576-2578.
- Weber, R., Herold, C., Hollert, H., Kamphues, J., Blepp, M., & Ballschmiter, K. (2018). Reviewing the relevance of dioxin and PCB sources for food from animal origin and the need for their inventory, control and management. *Environmental Sciences Europe*, 30(1), 42.
- Weerapong, P., Hume, P. A., & Kolt, G. S. (2005). The mechanisms of massage and effects on performance, muscle recovery and injury prevention. *Sports Medicine*, 35(3), 235-256.
- Weiss, M. C., & Sutton, J. (2009). The changing nature of prescribing: pharmacists as prescribers and challenges to medical dominance. *Sociology of Health & Illness*, 31(3), 406-421.
- Weng, S. F., Reps, J., Kai, J., Garibaldi, J. M., & Quresh, N. (2017). Can machine-learning improve cardiovascular risk prediction using routine clinical data? *PLoS One*, 12(4), e0174944.
- Werner, S. M. (2014). Patient safety and the widespread use of herbs and supplements. *Frontiers in Pharmacology*, 5(142).
- West, E. (2000). Organisational sources of safety and danger: sociological contributions to the study of adverse events. 9(2), 120-126.
- Westervelt, W. D. (1993). *Hawaiian legends of old Honolulu. Collected and translated from the Hawaiian by William D Westervelt*. Rutland, VT: Charles E Tuttle.
- Wiederhold, A. (2015). Conducting fieldwork at and away from home: shifting researcher positionality with mobile interviewing methods. *Qualitative Research*, 15(5), 600-615.

- Wildes, K. W., S.J. (1999). More questions than answers: the commodification of health care. *The Journal of Medicine and Philosophy: A Forum for Bioethics and Philosophy of Medicine*, 24(3), 307-311.
- Williams, S. (2000). Chronic illness as biographical disruption or biographical disruption as chronic illness? Reflections on a core concept. *Sociology of Health & Illness*, 22(1), 40-67.
- Williams, S. J. (1998). Health as moral performance: ritual, transgression and taboo. *Health*, 2(4), 435-457.
- Wilson, K. (2003). Therapeutic landscapes and First Nations peoples: an exploration of culture, health and place. *Health & Place*, 9(2), 83-93.
- Wilson, K., & Rosenberg, M. W. (2002). Exploring the determinants of health for First Nations peoples in Canada: can existing frameworks accommodate traditional activities? *Social Science & Medicine*, 55(11), 2017-2031.
- Wise, A. L., Manolio, T. A., Mensah, G. A., Peterson, J. F., Roden, D. M., Tamburro, C., et al. (2019). Genomic medicine for undiagnosed diseases. *Lancet*, 394(10197), 533-540.
- Wold, R. S., Wayne, S. J., Waters, D. L., & Baumgartner, R. N. (2007). Behaviors underlying the use of nonvitamin nonmineral dietary supplements in a healthy elderly cohort. *Journal of Nutrition, Health & Aging*, 11(1), 3-7.
- World Health Organisation, & Food and Agricultural Organisation. (2019). Codex Alimentarius. International Food Standards. Retrieved from <http://www.fao.org/fao-who-codexalimentarius/codex-texts/dbs/gsfa/en/> Accessed 9.12.2019
- Worling, P. M. (2005). Pharmacy in the early modern world, 1617-1841. In S. Anderson (Ed.), *Making medicines: a brief history of pharmacy and pharmaceuticals* (pp. 57-75). London: Pharmaceutical Press.
- Wrick, K. L. (1995). Consumer issues and expectations for functional foods. *Critical Reviews in Food Science and Nutrition*, 35(1-2), 167-173.
- Wu, W. Y., Linn, C. T., Fu, C. S., & Sukoco, B. M. (2012). The role of endorsers, framing, and rewards on the effectiveness of dietary supplement advertisements. *Journal of Health Communication*, 17(1), 54-75.
- Wulf, C., Althans, B., Audehm, K., Bausch, C., Göhlich, M., Stephan Sting, S., et al. (2010). *Ritual and identity: the staging and performing of rituals in the lives of young people*. Translated by Alice Lagaay and Elizabeth Hamilton. London: Tufnell.

- Xia, J. (2010). A longitudinal study of scholars' attitudes and behaviors toward open-access journal publishing. *Journal of the American Society for Information Science and Technology*, 61(3), 615-624.
- Yang, E. S., Li, P.-W., Nilius, B., & Li, G. (2011). Ancient Chinese medicine and mechanistic evidence of acupuncture physiology. *Pflügers Archiv - European Journal of Physiology*, 462(5), 645.
- Yeh, V. M., Schnur, J. B., Margolies, L., & Montgomery, G. H. (2015). Dense breast tissue notification: impact on women's perceived risk, anxiety, and intentions for future breast cancer screening. *Journal of the American College of Radiology*, 12(3), 261-266.
- Yen, D. E. (1963). The New Zealand kumara or sweet potato. *Economic Botany*, 17(1), 31-45.
- Zanella, A., N. Bui, N., Castellani, A., L. Vangelista, L., & Zorzi, M. (2014). Internet of Things for smart cities. *IEEE Internet of Things Journal*, 1(1), 22-32.
- Zeolla, M. M., & Cerulli, J. (2008). Use of and familiarity with dietary supplement information references by practicing pharmacists. *Journal of the American Pharmacists Association: JAPhA*, 48(3), 401-404.
- Zick, S. M., Schwabl, H., Flower, A., Chakraborty, B., & Hirschhorn, K. (2009). Unique aspects of herbal whole system research. *EXPLORE*, 5(2), 97-103.
- Zinn, J. O. (Ed.) (2008). *Social theories of risk and uncertainty*. Oxford: Blackwell.
- Zittermann, A., Pilz, S., Borgermann, J., & Gummert, J. F. (2011). Calcium supplementation and vitamin D: a trigger for adverse cardiovascular events? *Future Cardiology*, 7(6), 725-727.
- Zwick, D., & Knott, J. D. (2009). Manufacturing customers: the database as new means of production. *Journal of Consumer Culture*, 9(2), 221-247.

Appendices

Appendix A: Information sheet for supplement users



An exploration of people's use of dietary supplements and herbal medicines

INFORMATION SHEET FOR PUBLIC PARTICIPANTS

Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you and we thank you for considering our request.

What is the Aim of the Project?

Vitamins, minerals, herbal medicines, and other dietary supplements are popular products for sale in every pharmacy, health food shop and supermarket. Some information about how much is sold is available, but we know very little about why they are so popular. This study aims to explore in-depth how and why people use these products. It is hoped to develop an understanding of how people decide what to take, their perceptions about the effect on their health and wellbeing, and how their self-care fits with care from health professionals. The study is being undertaken as part of the requirements for Susan Bidwell's Doctor of Philosophy degree in Public Health.

What Types of Participants are being sought?

To take part, you need to be a regular user (at least three times a week or more) of one or more commercially sold dietary supplements or herbal medicines. The supplements or herbal medicines may be tablets, capsules, liquids or powders.

Another section of the research will interview up to 12 staff who work in pharmacies or health food shops about the kind of questions they get asked and what kind of advice they provide.

What will Participants be asked to do?

- Should you agree to take part in this project, you will be asked to have an interview of approximately one hour at a time and place that suits you. This can be at a place you choose or, if you prefer, in a private room at the Department of Population Health, 34 Gloucester Street, Christchurch. You may have another person with you if you wish.
- This research involves an open-questioning technique. The general line of questioning will be about your experiences using dietary supplements and herbal medicines, for example, why you first decided to take them, where you got the information or advice from, and how you think they may have helped you or not. The precise nature of the questions which will be asked has not been determined in advance, but will depend on the way in which the interview develops. Consequently, although the Department of Population Health is aware of the general areas to be explored in the interview, the Committee has not been able to review the precise questions to be used. In the event that the line of questioning does develop in such a way that you feel hesitant or uncomfortable you are reminded of your right to decline to answer any particular question.
- Everyone who participates in this study will be offered a \$30 petrol voucher in recognition of their contribution to the research.

What Data or Information will be collected and what use will be made of it?

- You will be asked to provide contact details, your age range, and ethnicity and general income bracket. Names and contact details are solely for the purposes of arranging the interviews and returning transcripts and will not be used in any publications from the study including the final thesis.
- The interviews will be recorded on a digital recorder with your permission, downloaded to a computer programme and fully transcribed by the researcher.
- The data recorded in the interviews will be seen only by the researcher and the two supervisors for this project.
- The transcript of your interview will be returned to you for checking and one month allowed for forwarding any corrections or sections that you wish to withdraw.
- As the final thesis is not likely to be available for several years, you will have the option of receiving a short, interim summary of the main points identified from the interviews.
- The information collected will be stored securely in such a way that only the researcher and supervisors will be able to gain access to it. Any personal information about you (for example, the audio recording of your interview) will be destroyed at the completion of the research. The rest of the information collected in the research will be retained for at least ten years in secure storage.
- Every attempt will be made to preserve your anonymity. You will not be identified by name or personal initials in any results from this study.
- At the completion of the project you will be informed when the full thesis is available online.
- The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand) but every attempt will be made to preserve your anonymity.
- This project has received no funding from sources outside the University of Otago and has no commercial interest.

Can Participants change their mind and withdraw from the project?

You may withdraw from participation in the project at any time without any disadvantage to yourself, up to the submission of the thesis.

What if Participants have any Questions?

If you have any questions about our project, either now or in the future, please feel free to contact either:-

Susan Bidwell

or

Dr Lee Thompson

Department of Population Health

Department of Population Health

Phone: 03 3643618.

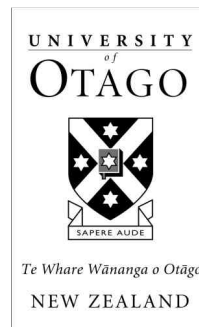
Phone:03 3643644

Email: bidu997@student.otago.ac.nz

Email: lee.thompson@otago.ac.nz

This study has been approved by the Department stated above. However, if you have any concerns about the ethical conduct of the research you may contact the University of Otago Human Ethics Committee through the Human Ethics Committee Administrator (ph 03 479-8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.

Appendix B: Consent form for supplement users to participate



An exploration of people's use of dietary supplements and herbal medicines

CONSENT FORM FOR PARTICIPANTS

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:-

1. My participation in the project is entirely voluntary;
2. I am free to withdraw from the project at any time without any disadvantage;
3. Personal identifying information from participants in the study will be destroyed at the conclusion of the project but any raw data on which the results of the project depend will be retained in secure storage for at least ten years;
4. This project involves an open-questioning technique. The general line of questioning will be about my experiences using dietary supplements and herbal medicines. The precise nature of the questions which will be asked has not been determined in advance, but will depend on the way in which the interview develops. In the event that the line of questioning develops in such a way that I feel hesitant or uncomfortable I may decline to answer any particular question(s) and/or may withdraw from the project without any disadvantage of any kind;
5. I understand that the interview has been arranged at a location and time of my choice and will last around one hour;
6. I understand that I will receive a \$30 petrol voucher in recognition of my participation in the research;
7. The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand) but every attempt will be made to preserve my anonymity.

I agree to take part in this project.

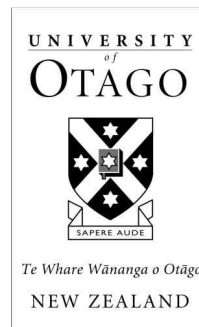
.....
(Signature of participant)

.....
(Date)

.....
(Printed Name)

I wish to receive a copy of a short report of the results prior to full publication Yes/No

Mailing address: _____ Email: _____



An exploration of people's use of dietary supplements and herbal medicines

INFORMATION SHEET FOR PHARMACY AND HEALTH SHOP PARTICIPANTS

Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you and we thank you for considering our request.

What is the Aim of the Project?

Vitamins, minerals, herbal medicines, and other dietary supplements are popular products for sale in every pharmacy, health shop and supermarket. Some information about the quantity of products sold is available, but we know very little about why they have become so popular. This study aims to explore how people make sense of their use of these products and also to develop an understanding of the experiences of staff of pharmacies and health shops who provide advice to them. A greater understanding about these issues may contribute to a deeper understanding of how people care for their own health and well-being. The study is being undertaken as part of the requirements for Susan Bidwell's Doctor of Philosophy degree in Public Health.

What Types of Participants are being sought?

The study is looking for staff of pharmacies and health shops who provide advice to customers on the supplements and herbal products they sell. Supermarkets are not included in the study as they do not provide advice. The study aims to recruit at least 12 people who fill this advisory role in either a health shop or a pharmacy.

Another section of the research will interview 25-28 regular users of dietary supplements and natural medicines.

What will Participants be asked to do?

- Should you agree to take part in this project, you will be asked to have an interview of approximately one hour at a time and place that suits you. This can be at a place you choose or, if you prefer, in a private room at the department of Population Health, 34 Gloucester Street, Christchurch. You may have another person with you if you wish.
- This research project involves an open-questioning technique. The general line of questioning will be about your experiences interacting with the public who ask for advice on the dietary supplements and herbal medicines you sell, for example, what kind of questions they ask, and how you decide what to recommend. The precise nature of the questions which will be asked has not been determined in advance, but will depend on the way in which the interview develops. Consequently, although the Department of Population Health is aware of the general areas to be explored in the interview, the Committee has not been able to review the precise questions to be used. In the event that the line of questioning does develop in such a way that you feel hesitant or uncomfortable you are reminded of your right to decline to answer any particular question.
- Note that the study is not investigating the effectiveness or otherwise of any product and is not interested in brands or costs and has no commercial interest.
- Everyone who participates in this study will be offered the choice of a \$30 grocery or petrol voucher in recognition of their contribution to the research.

What Data or Information will be collected and what use will be made of it?

- You will be asked to provide your name and contact details so an interview can be arranged. Names and contact details are solely for the purposes of arranging the interviews and returning transcripts and will not be used in any publications from the study including the final thesis.
- The interviews will be recorded on a digital recorder with your permission, downloaded to a computer programme and fully transcribed.
- The data recorded in the interviews will be seen only by the researcher and the two supervisors for this project. All transcribing will be carried out by the researcher.
- The transcript of your interview will be returned to you for checking and one month allowed for forwarding any corrections or sections that you wish to withdraw.
- As the final thesis is not likely to be available for several years, you will have the option of receiving a short, interim summary of the main points identified from the interviews.
- The information collected will be stored securely in such a way that only the researcher and supervisors will be able to gain access to it. Any personal information about you (for example, the audio recording of your interview) will be destroyed at the completion of the research. The rest of the information collected in the research will be retained for at least ten years in secure storage.
- Every attempt will be made to preserve your confidentiality. You will not be identified by name or personal initials in any results from this study.
- At the completion of the project you will be informed when the full thesis is available online.

- The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand) but every attempt will be made to preserve your anonymity.
- This project has received no funding from sources outside the University of Otago and has no commercial interest.

Can Participants change their mind and withdraw from the project?

You may withdraw from participation in the project at any time without any disadvantage to yourself, up to the submission of the thesis.

What if Participants have any Questions?

If you have any questions about our project, either now or in the future, please feel free to contact either:-

Susan Bidwell

and

Dr Lee Thompson

Department of Population Health

Department of Population Health

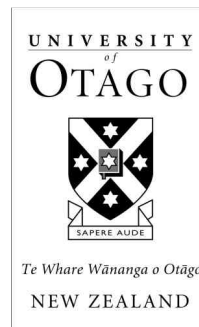
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This study has been approved by the Department stated above. However, if you have any concerns about the ethical conduct of the research you may contact the University of Otago Human Ethics Committee through the Human Ethics Committee Administrator (ph 03 479-8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.



An exploration of people's use of dietary supplements and herbal medicines

CONSENT FORM FOR PARTICIPANTS – Pharmacy and health shop staff

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:-

1. My participation in the project is entirely voluntary;
2. I am free to withdraw from the project at any time without any disadvantage;
3. Personal identifying information from contact details of participants in the study will be destroyed at the conclusion of the project but any raw data on which the results of the project depend will be retained in secure storage for at least ten years;
4. This project involves an open-questioning technique. The general line of questioning will be about my experiences advising people on dietary supplements and herbal medicines. The precise nature of the questions which will be asked has not been determined in advance, but will depend on the way in which the interview develops. In the event that the line of questioning develops in such a way that I feel hesitant or uncomfortable I may decline to answer any particular question(s) and/or may withdraw from the project without any disadvantage of any kind;
5. I understand that the interview has been arranged at a location and time of my choice and will last around one hour.
6. I understand that I will receive a \$30 petrol voucher in recognition of my participation in the research;

7. The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand) but every attempt will be made to preserve my anonymity.

Please turn over

I agree to take part in this project.

.....
(Signature of participant)

.....
(Date)

.....
(Printed Name)

I wish to receive a copy of a short report of the results prior to full publication Yes/No

Mailing address: _____ Email: _____

Appendix E: interview guides

General participants

Explain the study briefly to the interviewee and check that they understand the information sheet and consent form.

- Explore how and why the person came to the decisions they did regarding supplements/herbal medicines; for example, any influences from family, occupational, social networks, own reading, media, etc and their expectations
- Explore their expectations of taking the substances and their perceptions about of the results for their health and wellbeing
- Explore how the interviewee thinks about caring for themselves and their general understanding of what constitutes health, illness, and wellness.

Seller participants

Explain the study briefly to the interviewee and check that they understand the information sheet and consent form

- Ask about their experiences of the kind of advice people are seeking when they come in to their shop
- Explore what kind of general advice on health and illness they offer apart from advice directly about specific supplements/herbal medicines
- Explore any reflections they have about how people use these products to care for themselves in health and illness

Thank the interviewees for their time and give them the petrol voucher. Explain that the short summary may take a while to be ready. .