The Sustainability Imperative and Urban New Zealand:

Promise and Paradox

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Abstract

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'Urban sustainability' is an increasingly ubiquitous term now featuring in all manner of policy documents and promotional material. As an ambitious attempt to address social, economic and bio-physical environmental issues it *appears* to balance philanthropic ideals, such as social development, with environmental concern and fiscal efficiency. Yet, my research involving in-depth interviews with 35 urban practitioners in Christchurch, New Zealand, exposes much of the apparent consensus around its meaning as illusory.

Though the concept's promise rests on an apparently neutral reconciliation of disparate goals and aspirations, it is conceptually paradoxical, difficult to implement and extremely political. While the orthodox tripartite promotes a combination of social, economic and environmental elements, I have found practitioners tend to emphasise bio-physical aspects of the concept. As a corollary, urban sustainability is often reified as a technical problem to be managed within certain budget constraints. The ways in which the concept is quite literally made concrete in our cities and towns naturalises certain social arrangements, such as, for example, the spatial segregation of different groups. The processes of reification also serve to legitimise particular rationalities, one of which encourages a particular reading of 'the environment' that rests on an unhelpful and possibly dangerous separation of nature and the city.

In this thesis I use techniques associated with discourse analysis and symbolic interaction, informed by an eclectic literature around social geography, and urban political economy and ecology, to explore and elaborate upon these themes.

Key Words: Urban sustainability, the city, sustainable cities, social sustainability, urban political ecology, the built environment, social geography

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At those (frequent) times at wit's end, I would turn to friends and family. Thank you for listening to my pressure-valve, garbled attempts to explain my work without trying to medicate with anything stronger than riesling. A special thanks to Darryl, whose irreverent humour puts things in perspective, and to Zac, who has created merry havoc and made me think about sustainability in a whole new way…

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Chapter One: Introduction

In 1949, Aldous Huxley published his dystopic *Ape and Essence* in which he described the adventures of a small band of New Zealanders who had survived a cataclysmic nuclear event and then set off to explore the devastated Americas of 2018AD. This portrayal of New Zealand as well-placed to endure many of the world's perils is not altogether uncommon, nor is it entirely lacking credibility. Shortly before large-scale European settlement, and after the furore created by the publication of Darwin's *Origin of Species* in 1859, it was suggested that New Zealand be made a 'nature reserve' for the rest of the world, and our image of being some kind of special outdoor park endures (Grove, 1990).

New Zealand is geographically isolated (figure 1), well-endowed with natural resources, unique in terms of its flora and fauna and our international reputation is informed by our 'no nukes' policy, outdoor adventure tourism and the scenery depicted in Peter Jackson's cinematic version of J.R.R Tolkien's *Lord of the Rings* trilogy. Indeed, New Zealand's remote location, lack of hostile neighbours, generous natural assets and relatively small population of just over four million people, have all fuelled our reputation as being 'clean and green' and this makes a significant contribution to our economic prospects with regards to tourism and exports to sensitive 'eco-friendly' markets.

One might argue that this background accounts for the enthusiastic adoption and proliferation of the terms 'sustainability' and 'sustainable development' here[1], yet

[1] A list of publications with brief descriptions of their use of these terms is provided in Appendix One.

Figure 1. New Zealand at the Periphery

New Zealand is not alone in its promotion of this concept. As Kates, Parris and Leiserowitz (2005) have noted, the concept of 'sustainable development' alone figures on the masthead of *Environment* magazine, is a feature of over 8,720,000 web pages, and has been adopted enthusiastically by 'countless' programmes, organisations, and institutions. Related terms, such as 'sustainable management' and 'sustainable communities', are also nothing if not ubiquitous. Formerly confined to academic circles, more recently these terms have 'buzzed rapidly into the popular consciousness trailing clouds of positive affect' (Netting, 1993, in Stone, 2003).

Urban sustainability is an emergent iteration that has evolved out of a growing awareness that approximately half of the world's population resides in cities and towns. Whilst this alone provides a compelling case for the addition of an urban prefix to the term sustainability, calls for achievable *local* solutions to seemingly unassailable global problems have also contributed to this term's growing popularity

(Blowers, 1997; Welch, 2003; Mercer, 2002). While more focussed definitions of urban sustainability exist, exemplified in the urban ecological footprint approach (Rees, 1997a and b; Walker and Rees, 1997) which emphasises bio-physical environmental elements, many definitions employ a tripartite of bio-physical environmental[2], economic and social concerns.[3] Nijkamp and Perrels' (1994, p.4) version is fairly typical:

> Sustainable cities are cities where socio-economic interests are brought together in harmony (co-evolution) with environmental and energy concerns in order to ensure continuity in change.

Presented thus, it seems an incontrovertibly sound ideal and an appropriate model upon which we might build our urban areas. As a corollary, there is an ever-increasing literature devoted to exploring how we might go about pursuing this goal of sustainability in general, and urban sustainability more specifically. Much of the existing work on sustainability acknowledges this goal will be complex (but comprehensible) and difficult (but achievable). The flavour of such literature suggests that while there may be challenges ahead, we know what we want and we will find a way of making it happen. It is precisely this supposed singularity of purpose with which I take issue and my objective here is to re-evaluate the term as it is understood and applied by urban practitioners.

[2] I use the term bio-physical environment to isolate tangible biological and built elements from the wider environment which I see as encompassing socio-cultural and economic dimensions as well. My discussion later in this chapter of 'nature' and 'the environment' will illustrate the difficulties involved in separating these from what is 'built' or 'man-made', hence the hyphenation of bio-physical.

[3] See, for example, Elkin and McLaren, 1991; Aasen, 1992; Haughton and Hunter, 1994; Harris, 1995; Mitlin and Satterthwaite, 1996; Cameron, 2000; Adger, Brown, Fairbrass, Jordan, Paavola, Rosendo and Seyfang, 2003).

The Nature of Things

The orthodox sustainability tripartite includes social, economic and bio-physical environmental factors, yet it is rare to find a study that attempts to explore the relationships between these three dimensions. On one hand this is not terribly surprising; bio-physical environmental aspects of sustainability alone encompass air, water, land use, transportation, waste and so on, and it is difficult enough to balance these. On the other hand, it is precisely the assimilation of social, economic and bio-physical environmental factors that sets sustainability apart from other established movements with a more limited focus, such as social justice or restoration efforts, and it is curious that the links between the three elements are not subject to more intensive investigation (though see Ekins (1993) for a now-dated but interesting comparison). The paucity of scholarship is even more perplexing if it is acknowledged that there are at least two fundamentally different schools of thought regarding the nature of 'nature' and the nature of 'society' as it is this generally accepted dichotomy that appears to inform many of problems associated with assimilating these different strands of sustainability.

A starkly realist ontology recognises 'things' as independent of human interpretation. These bounded entities sit comfortably within the Enlightenment tradition, and notions of progress are tied to uncovering predictable patterns and natural laws governing relationships between different phenomena. Things exist in and as themselves and they can be seen and measured objectively. Realists insist that the world is more than mere social convention and ask that anyone who believes otherwise test their conviction by jumping from the top of a tall building (Sokal, 1996 in Demeritt, 1998). Demeritt (1998, p.176) calls this position 'common-sense realism'

because one of its chief tenets is that entities, such as the ground we would no doubt encounter should we choose to jump, are ‘pre-existing, independent, and…objective’.

The counter position - that such realities are *constructed* – does not deny the ontological existence of the world, only ‘that its apparent reality is never pre-given’ (Demeritt, 1998, p.178). That reality is apparent rather than fixed has its roots in the interpretavist tradition, a position perhaps best explored in terms of the ideas its proponents were reacting against. The steady progress in the physical sciences regarding the ‘real’ world fascinated early social scientists - including August Comte, the so-called father of positivism and the first to use the term *sociologie* - and much of the last 200 years of social research has been directed towards uncovering similar patterns in human behaviour as the physical sciences seemingly found when predicting atomic or astronomical movements. Society was seen less as the aggregate of individual behaviour and more as the result of those economic, legal, geographic, religious (and so on) structures that were thought to regulate the social world. This had consequences for social science research methods. As an example, in his famous study of suicide, Emile Durkheim was able to form some accurate conclusions about an intensely personal action without gathering any primary data but relying instead on statistics and other secondary sources.

An epochal shift occurred, however, when Marxism failed to predict adequately the supposedly inevitable Revolution and this failure raised questions about the relationship between these structures that formed the basis of early sociology and agency. Metatheories that claimed to predict social events in the same way physicists were able to calculate heat loss or acceleration were increasingly dismissed as

inappropriate. Whereas the ability to explain an event had been predicated upon a mechanical relationship between a human agent and the 'real' world which renders the subjective world obsolete (or at least unworthy of investigation), the quintessentially human capacity for interpretation and understanding began to come to the fore. Critics of the 'natural sciences' model advocated paying less attention to law-like structures that determine human behaviour and more attention to the meaning-making activities in which people collectively engage. This ushered in a host of new challenges for the social sciences because, in this paradigm, the researcher must try to understand the behaviour of sentient beings who are themselves interpreting and making sense of the world around them. This has been called the 'double hermeneutic' and it led to a new turn in the social sciences.

There have been many different attempts to reconcile the quest for scientific prediction with the vagaries of human agency. In an effort to rescue Marxism from its over-reliance on superstructures Gramsci (1891 – 1937), for example, developed his notion of hegemony which focused on the role of active, meaning-making agents as they go about legitimating the various forms of 'rule by consent rather than coercion' (Castree, 2005, p. 124). Symbolic interactionism[4], developed by Herbert Blumer (1900 – 1987) and refined by scholars such as Becker and McCall (1990), Lofland and Lofland (1995), Prus (1996), had a specific concern for the ways in which people *act* on their intersubjective understanding of the world. Blumer noted:

> More and more over the years, as I have had occasion to reflect on what is going on in sociology, the more convinced I have become of the inescapable need of recognising that a human group consists of people who are living. Oddly enough that is not the picture which underlies the dominant imagery in the field of sociology today. Rather, sociology assumes individuals

[4] I provide a more detailed account of symbolic interactionism and discourse analysis in Chapter Two.

> as the products of structures and completely missing the complex ways they organise their behaviour and action to cope with a variety of different situations (Blumer, 1980, cited in Plummer, 1998, p.85).

In Blumer's view, 'objects' cannot be treated as mere things but are referred to as 'symbols' in order to highlight the meaning-making enterprises which make each thing. The specific meanings attached to each thing are made through the ways in which people actively interact with each other and the object. Language was seen to play a particularly important role in this interaction because it both produced and symbolised objects.

Structuralists also saw language as highly significant because it comprised a definite system which exists independently of individual users; it is thus an exemplar of other (political and economic) structures that likewise constrain and enable individuals while at the same time allowing for personal expression. According to Swingewood (2000, p.183) 'structuralism defines reality in terms of the relation between elements, not in terms of objectively existing things and social facts. Its basic principle is that the observable is meaningful only in so far as it can be related to an underlying structure or order'. Whilst this is an interesting point, structuralism has been criticised for neglecting complex historical processes and contradictions. Post-structuralism, particularly in the work of Foucault[5], was more attentive to these matters.

Truth and reality

Foucault's thought has been the focus of many books and articles, as has the work of Nietzsche who had a profound influence on Foucault. Though their work is extensive,

[5] Foucault denied he was a post-structuralist but is commonly labelled so because of his emphasis on the meaning of a thing as dependent on its relationship with the whole.

several aspects of their thinking are especially salient to my discussion of people as interpreters of social situations, and a brief overview illustrates this. One area in which their work makes a useful contribution to my own project is the way in which some ideas become *truth* whilst others become myths or sink into obscurity. Language, according to Nietzsche, plays a fundamental role in this. Take, for example, the much-publicised, contemporaneous concern for human rights, justice and equity. In the minds of many these are noble ideals that inform basic humanitarian obligations to others. Nietzsche, on the other hand, interprets these concerns as evidence of the rise, and eventual supremacy, of a 'slave morality'. He based this assertion on a careful analysis of the German words for 'good' and 'bad' and argued that these words, as used by the strong, had no moral connotations. The slaves, on the other hand, saw strength as a vice (evil) and instead presented the 'weak' attributes of humility and charity as 'good'. Similarly, he presents guilt as lacking any moral overtones, but rather construes this as simply recognition of a debt with punishment set up as a means of ensuring the debt would be discharged. 'Justice' merely guaranteed the punishment and the debt were equally weighted. Christian religiosity internalised these so as to modify human aggression and cruelty, giving rise to the notions of guilt and the soul. Ultimately, Nietzsche's point is that, 'All things are subject to interpretation. Whichever interpretation prevails at a given time is a function of power and not truth'. More recently, and far less controversially, Flyvbjerg (2001) came to similar conclusions based on his study of Aalborg where rational decision-making regarding the placement of the town's new bus depot, for example, was the result of post hoc rationalisations constrained by power relations among different groups rather than a rational decision-making process based on fact

and truth. This highlights the utility of developing a sensitivity to power and its relationship to truth as an important part of my own work.

The second point pertains to the ways in which a particular truth will prevail at a given time, often because it serves particular interests. A good example of this in the urban context is the view of the suburb. While the elite occupied the town centres the suburbs were seen as a grossly inferior place to live, but as mobility increased and the outskirts became more easily accessible suburbs became 'enchanted' in different ways (Knox, 2005, see also Sherlock, 1991). Truth comes and goes in different historical contexts but, as Nietzsche pointed out, perhaps we are misguided to try and 'divest existence of its rich *ambiguity*' (1887 [1974], p. 335, emphasis in original).[6] Rather, both Nietzsche and Foucault are proponents of the notion that there is not simply one truth out there waiting for us to discover and have set about exploring the possibilities associated with this conviction. This is evident in Foucault's methods where he uses the term *archaeology* to describe a process of digging through historical archives to reveal 'the discursive formations and events that have produced the fields of knowledge and discursive formations of different historical periods' (Danaher, Schirato, Webb, 2000, p. ix). Similarly, *genealogy* refers to the process of 'analysing and uncovering the historical relationships between truth, knowledge and power' (Danaher et al. p. xi). An example of a genealogical approach to exposing 'counter-memories' is Jones' (2000) study of Jackie Smith's protest against the United States Civil Rights Museum, formerly the Lorraine Motel and site of Martin Luther King's assassination. Whilst ostensibly the Museum celebrates the civil rights movement,

[6] Nietzsche continues: That is a dictate of good taste…the taste of reverence for everything that lies beyond your horizon. That the only justifiable interpretation of the world should be one in which you are justified because one can continue to work and do so scientifically in your sense (you really mean mechanistically?) – an interpretation that permits counting, calculating, weighing, seeing, and touching and nothing more – that is a crudity and naivete, assuming that it is not a mental illness, an idiocy.

Jackie continues to protest against its insidious suggestion that the battle is actually over, that it has, in fact, been won already with 'desegregated buses, schools and lunch counters' (p. 453).

Considerable effort has been directed towards saving truth from Foucault's relativism, but this has been matched by manifold attempts to explore the implications of his work. Flyvbjerg (1998, 2001), for example, takes issue with the way our emulation of the natural sciences and the search for singular truth and unifying theory has compromised our ability to make social science *matter*, largely because theory necessarily undervalues context. Flyvbjerg following Dreyfus[7] wrote (2001, p. 40):

> Insofar as the would-be sciences [social sciences modelled upon the natural sciences] follow the ideal of physical theory, they must predict and explain everyday activities, using decontextualized features. But since the context in which human beings pick out the everyday objects and events whose regularities theory attempts to predict is left out in the decontextualization necessary for theory, what human beings pick out as objects and events need not coincide with those elements over which the theory ranges. Therefore predictions, though often correct, will not be reliable. Indeed, these predictions will work only as long as the elements picked out and related by theory happen to coincide with what the human beings falling under the theory pick out and relate in their everyday activities.

As Flyvbjerg (2001, p.42) explained further, 'while context is central for defining what counts as an action, context must nevertheless be excluded in a theory in order for it to be a theory at all' and this presents a very real contradiction with which the researcher must grapple. Flybjerg addresses this conundrum by positing three kinds of science - techne, episteme and phronesis - where:

[7] Flyvbjerg (2001, p. 22) relates a story whereby Habermas, upon hearing Dreyfus present his model of learning, said to him 'you are talking about skills like hammering and playing chess, but what you really want to do is undermine Western society.'' Dreyfus replied 'that is exactly what it comes to'.

> Techne is …craft and art, and as an activity it is concrete, variable, and context-dependent. Whereas episteme concerns theoretical know why and techne denotes technical know how, phronesis emphasises practical knowledge and practical ethics. Phronesis is often translated as 'prudence' or 'practical common sense'.

What is 'true' is essentially a manifestation of the level at which it is conceptualised and applied rather than relative and therefore unknowable.

Working in a different tradition, though with a similar eye to the importance of context, Law's (2004) response to manifold truths is actually enthusiastic. Like Flyvbjerg, he is keen to expose the political nature of decision-making and professional practice, however, his focus is very different. At the centre of his work is the notion of 'multiplicity' which exposes the highly politicised aspects of knowledge creation. First he critiques singularity that he believes involves a single set of processes in the world, and which corresponds closely to the realist perspective outlined above. He then evaluates pluralism where multiple realities are acknowledged but not believed to *interfere with one another*. We might find this sort of pluralism used to explain the worldviews of different cultures; they are 'other', and do not therefore challenge our own thinking even if it is different from our own. Having exposed these perspectives as inadequate, Law puts forward his preferred view which he calls multiplicity. He describes this as:

> The simultaneous enactment of objects in different practices, when those objects are said to be the same, [h]ence the claim that there are many realities rather than one. This arises because practices are endlessly variable…[but] overlap in many and unpredictable ways so that there are always interferences between different realities (2004, p. 162).

As an example of how these realities interact, colliding and bumping into each other, Law demonstrates how alcoholism is constructed and treated differently in a)

textbooks, b) a gastro-enterologist's consultancy room, c) the gastro-enterology ward, d) at the general practitioner's office and e) at an out-patient clinic. Law proceeds to outline how enormous effort goes into making such constructions appear natural, inevitable and singular largely by making invisible the inscription devices, such as livers, diagnostic protocols and readmissions, that help construct these understandings.[8]

Law builds on the work of Latour, Woolgar and Mol, among others, to illustrate how much of what we take as real is rather the result of substantial, determined effort to create a singular reality via the creation and maintenance of a vast hinterland of 'more or less routinised and costly literary and material relations that include statements about reality and the realities themselves [and various] inscription devices' (2004, p. 160). As support, Law draws upon Latour and Woolgar's laboratory ethnography (or 'praxiography' to use Mol's term which highlights the ways in which methods produce rather than expose reality), which details how the knowledge produced in this setting was the result of the methods and inscription devices used, such as desks, books, rats and bioassays. In this particular case, Latour and Woolgar demonstrated that without the bioassay, this knowledge, this substance, could not be said to exist. The existence of this knowledge is *constructed* by both people and the 'network of elements that make up the inscription device' (Law, 2004, p. 21). Demeritt (1998) has used similar reasoning to explain forest conservation and global warming. Methods, in this view, are performative and different method assemblages and devices would have possibly, even necessarily, produced a different, *but no less 'true'* construction.

[8] It is interesting to note a tension here between a science that adheres to a 'one world' view and one that now uses terms such as 'fuzzy logic', 'chaos' theory, and 'loosely coupled systems'.

Law uses other examples from the medical and legal professions to outline his concern that we tend to direct much of our energy towards creating a singular truth about the world when it is more a mess of multiple realities. He noted (p. 141):

> …if we are able and willing to tolerate the uncertainties and the specificities of enactment, flux and resonance, then we find we are confronted with a quite different set of important puzzles about the nature of the real and how to intervene in it. Perhaps, for instance, the 'great structures' of inequality are to be understood not as great structures but as relatively non-coherent enactments which nevertheless resonate or interfere with one another to keep each other in place.

Certainly, to reduce 'structure' - one of the central ideas of sociology – to a 'non-coherent enactment' is something of a challenge and has enormous consequences for the discipline and its critical capacity.

Law's metaphysics challenges the dominant Euro-American view that reality is independent and prior to the observer, that it is definite in shape and form, that it is singular and constant, that the objects it discovers are passive, and that what is 'absent' is universally so (2004, p.145). The last point is an interesting one as it provides a practical tool for conducting research, that is, to pay attention to what is *not* said or done, because what is absent also helps frame the world; it is just that much harder to see.[9] Law also advocates an expansion of the traditional understanding of methods to one which explicitly acknowledges the research hinterland and inscription devices such as visual depictions, maps, bodies, demonstrations, conversations, ceremonies and, importantly, allegories where what is not said or is left un-done comes to the fore.

[9] Merrifield (2000, p. 132) also asks us to attend to 'unobservable presences' in his development of a messy 'street Marxism' more attenuated to everyday life.

This latest work from Law builds on earlier developments around Actor Network Theory (ANT) which challenges more widely accepted views on the character of agency. Actor Network Theory employs assemblages of human and non-human actants (actors/agents) whose agency depends not only on its inherent properties but also on its relationship with others in the network (Law, 1992; Murdoch, 1999; Law and Hassard, 1999). In this way, both human and non-human phenomena co-constitute one another. This has led to a dramatic expansion of the material considered suitable for social scientific investigation, with subject matter that has formerly been confined to the natural sciences, particularly biology and ecology, now forming an important part of social scientists' investigations.

The political ecology of nature

A non-human entity that takes a central role in my study is that of *nature*. A typical view of nature is that which is untouched or unmodified by human activity or intervention, yet this discussion of the ways in which social realities are generated, and how scientific truths are contextually contingent, should alert us to the possibility that nature is similarly constructed.[10] In the context of this work, nature is not something to be understood as separate to society but as co-constitutive of it. Within the frame of Actor Network Theory, nature is an actant in a relational assemblage, without which we cannot define or understand ourselves (see also Haraway, 1985, 1991; Downey and Dumit, 1997; Murdoch, 1999; Philo and Wilbert, 2000; Whatmore, 1999, 2002). This is evident in the commonly occurring definition of

[10] Lynn White's publication of the *Historical Roots of our Ecologic Crisis* in 1967 is an important piece of work in which he attributes the division of nature and society to the Christian tradition. As an aside, it is also interesting to note White's conclusion that this separation has resulted in an 'ecologic crisis' predates more recent concerns of political ecologists by almost 40 years.

nature as *that which is untouched by people*; we can only understand what is natural in terms of ourselves.

Edward Said's (1978) *Orientalism* stands out as a seminal text in the development of this theoretical tradition which recognises that self-definition relies on the existence of the Other. Specifically, his conclusion that our view of the oriental Other gives *us* definition has been modified by academics whose work on cyborgs and hybridity challenges orthodoxies around what it means to human/non-human. Gandy (2005), for example, invokes the idea of the cyborg to counter many taken-for-granted dualisms, including that of nature and culture. In favour of what might be called a 'relational' approach (Castree, 2004, p. 191), Gandy (2005) explains that the cyborg can be understood as 'a cybernetic construction, a hybrid of machine and organism' and therefore 'urban infrastructures can be conceptualised as a series of inter-connecting life support systems' where the home, for example, is conceived as a kind of 'exoskeleton' (2005, p. 28). Marvin and Medd (2006, p. 322) provided another example of such work during their investigation into the metabolism of 'obe*city*' and fat in order to better understand 'the defining relations between bodies, cities and sewers' and their interdependencies. Such thinking is presented as supplementary to that neo-organicist approach which sees urban areas as relatively simplistic functional analogies of the human body or the eco-city where the city is a complex organism. Instead, the focus is on the virtual and actual body-city nexus comprising networks and neurons that 'sustain the relationship between the body and the city' (Gandy, 2005, p. 27). Gandy recognizes these virtual spaces as generative rather than merely reflective of existing social realities but warns against overlooking particular 'combinations of fixed capital and human expertise that enable specific nodes …to

play enhanced roles in the arena of cultural and economic production' (p. 28) and that 'urban infrastructures are not lonely material manifestations of political power…they are also systems of representation that lend urban space its cultural meaning' (p. 37).

The works of Wolch (1998), Whatmore (2002), Philo and Wilbert (2000), Melson (2001) and Cloke and Perkins (2005) also challenge traditional readings of nature. This literature, placed alongside that of others who argue that nature is a contested term (see for example Escobar, 1996; Demeritt, 1998; Macnagten and Urry, 1998; Swyngedouw and Kaika, 2000; Castree 2000, 2004, 2005; Castree and Braun, 2001; Desfor and Keil, 2004; Foladori, 2005) has led to the development of what is often referred to as political ecology. Wainright (2005, pp. 1037-1038) argues that political ecology should aim to 'take apart those practices that stabilise the singular worldhood of the modern world' because it renders many important voices silent. As an exemplar of this approach, he cites Raffles' (2002) *In Amazonia* which stands 'open to the multiplicity and unboundedness' of the place by 'bring[ing] people, places, and the non-human into 'our space' of the present' (Raffles, 2002, in Wainright, 2005, p. 1040). This thinking aligns closely with Hinchcliffe, Kearnes, Degen and Whatmore's 'ecologised politics' (2005, p. 655) which turns away from representation toward enabling ecology to speak to us in different ways.

Urban political ecologists and economists have likewise adopted reformulated understandings of nature/society to explain inequity and uneven distribution of environmental goods and externalities in cities (Martinez-Alier, 2001; Swyngedouw, 1997, 2004; Heynen, 2006). Likewise, Desfor and Keil (2004) have adapted Lefebvre's (1991) political economy based on a triad of spatial practices,

representations of space and representational spaces, to develop a new ontology 'that has moved beyond the antagonism of urbanism and nature'. Similarly, Swyngedouw and Kaika (2000, p. 569) argue that in the city 'society and nature, representation and being, are inseparable, integral to each other, infinitely bound up' and that following the flows between them demands a new approach. Swyngedouw and Kaika (2000) and Desfor and Keil (2004) call this approach urban ecology, which, following Heynen (2006, p. 500), should be distinguished from the 'classic urban ecology' of the Chicago School that emphasised physical characteristics and was therefore extremely reductionist.[11] The new urban ecology, according to Desfor and Keil, 'goes beyond articulations proposed by growth advocates and antigrowth activists who pursue their social and economic projects by using nature in different ways' (2004, p. 71). It recognises the co-constitutive nature of nature and its political role in urban life.

Duncan and Duncan (2004) illustrate these points very well in their case study of Bedford Village (NY). In this work they build on more established themes of zoning and legislation as instruments of social control and call upon a 'seemingly innocent appreciation of landscape' as a further mechanism of exclusion and class segregation. Particular practices around the aestheticisation of landscape can be as effective as any physical barrier (2004, p. 4). Likewise, Knox (2005) provided an interesting application of the way in which particular politicised articulations of nature (in this case that of the frontier myth and arcadian Utopia) have informed current North American suburban practice. Here he posits suburbanisation and its 'enchantment' as necessary for the sustained consumption and capital accumulation of political-

[11] I would add a further distinction between this emergent brand of highly theoretical urban ecology and that developed by Richard Register in the 1970s which was very action-oriented and centred on a singular conception of 'nature'.

economic development. He illustrates how the modern metropolis has undergone a transformation from being the manifestation of the political economy of manufacturing to that of consumption. Modernity, characterised by 'individualism, rationality, large-scale social integration, and the idea of progress' has seen the suburbs recast successively as 'intellectual utopias to bourgeois utopias to degenerative utopias to conservative utopias, each with a distinctive physical form and moral landscape' (2005, p. 34). Their latest incarnation he labels 'Vulgaria', alluding to the 'starter castles', SUVs that make up compulsory 'driveway accessories' and 'gruesome affectations of spelling' that characterise the newer suburbs. Vulgaria serves to naturalise social and cultural power inherent in political-economic structures - currently 'competitive consumption, moral minimalism, and disengagement from notions of social justice and civil society' - and makes this order appear inevitable.

Dwelling with nature

Such studies are consistent with a growing body of scholarship which sees a re-evaluation of our relationship with nature and its political character as central to a better understanding of bio-physical environmental and social concerns (Beck, 1995; Macnaghten and Urry, 1998; Foladori, 2005; Harvey, 1996; Castree and Braun, 2001). Heidegger's concept of dwelling has also been influential here and literature in this tradition usually invokes his idea of the 'phenomenology of place'. Like Lefebvre's (1974) conceptual triad of spatial practices, representations of space and representational spaces, Heidegger is concerned to show how different conceptions of space and place have meaningful consequences for the ways in which we understand and relate to the world. 'Being-in-the-world' describes the everyday relationships

people have with their worlds. This, in turn, has three components including 'being in' which involves concern (or lack of) marked by 'ties of work, affection, responsibility, interest and memory' (Relph, 1985, p. 17). Then there is the entity which is the self, and finally, 'in-the-world' which is so obvious that we have trouble even detecting it under most circumstances.[12] According to Heidegger the world has two forms; 'presence at hand', which manifests as a result of disinterested reflection or causal curiosity, and 'readiness to hand' which is the consequence of 'making, considering, participating, discussing, moving around, producing something, attending to something and looking after it' (Relph, 1985, p. 18). As for the relationship between the two, as Relph (1985, p. 26) noted 'The remoteness or closeness of what is ready-to-hand need not correspond with objective distances of things present-at-hand. The house next door is a few meters away, yet it is utterly remote because my neighbour is unfriendly'. The idea of dwelling acknowledges such consequences of lived-in-ness and emphasises that we can only access the world through this process of inhabiting and embodying (Jager, 1985).

Seamon (1993, p. 1) claimed that phenomenology acknowledges the importance of both 'dwelling' and 'objectivity' and therefore gives us 'an important intellectual means for healing the rift between art and science, seeing and understanding, knowledge and action, and design and building' because the Western intellect has become dominated by 'economic, technological or aesthetic concerns alone and do not always relate to the full range of human experience, particularly a sense of place and dwelling' (Seamon, 1993, p.2). Cartesian and Kantian dichotomies such as person-world, body-mind, theory-practice and nature-culture have fractured our

[12] It is like trying to teach a fish to see water…

human experience of the world and left the bio-physical environment vulnerable to over-exploitation. Science and technology exacerbate this process because any seemingly objective view is constrained and bounded by our practice or our 'concernful dealings' (Fotlz, 1995, p. 11). Foltz explains:

> The south wind for example, is discovered by the farmer not as a flow of air in a particular direction that merely happens to be present but as a sign of rain; it is not initially manifest as a bare fact to which he subsequently assigns a value, but as something inherently bound up with his work.

We are thus too accustomed to seeing nature as a stock or standing reserve when what we need, according to Heidegger, is a 'newly experienced naturalness of nature' (in Foltz, 1995, p. 13) which would form the basis of a new environmental ethic.

Hegemonic nature and the environment

For some, particularly those who hold to a realist ontology, this emergent view of a highly politicised, constructed nature has led to a sometimes defensive attitude. Eagleton (2000, p. 83), for example, has observed that 'nature is a word which nowadays must be compulsively draped in scare quotes' but this deeper analysis of the implications of constructing nature suggests that there is more to fear than mere ontological nit-picking. Demeritt (1996), for example, has pointed out that 'The debate about social constructivism is also about power and legitimacy'. An acknowledgement that our view of nature is constructed rather than given therefore raises questions about whose interests are served by particular constructions and how these constructions are generated.

The prevalence of ‘good guy – bad guy’ literature and film, such as the *Star Wars* series and *Lord of the Rings* trilogy, generates a sense of power as wielded and, in the interests of a good story, successfully resisted. Such tales do little to expose the ambiguities of power or its more subtle manifestations, yet rarely does the world appear to operate in this way. The concept of hegemony is therefore a useful tool to explore the intricacies of power.

The concept of hegemony represents Gramsci’s attempt to preserve the credibility of Marxism given that the predicted Revolution was confined to particular places despite widespread class disparities and inequality. Why was it that an entire class failed to act in what was said to be their best interest? And why do citizens actually assent to curtailment of their freedoms, even when it has a negative impact on their lives? According to Gramsci, people behave in such a way because, as agents, they are actively and continually legitimising new forms of rule. Hegemony, in this interpretation, is a process whereby the dominant factions of a society legitimise their interests by making them appear good for society in general, and ultimately portray these ideas as basic common sense or ‘reciprocally confirming’ in practice (Williams, 1977, in Castree, 2005, p. 19). No one class ever completely dominates from above but has to constantly assume a balance ‘between persuasion and coercion, active consent and force’ (Swingewood, 2000, p. 119) and hegemony is therefore ‘made’ at micro- and macro- levels in a process of establishing new values (p. 123; see also Jessop, 1997).

As an illustration of hegemony in action Castree (2005, pp. 19-20) discusses the concept of nature as an expression of ‘an all-pervasive aspect of our collective

thought and practice'. While we may take nature at face value it is an idea that 'has a history, a geography and a sociology…[which] reflects …the agenda of those who promulgate these ideas'. As an example, Castree invokes Takac's (1996) view of 'biodiversity', which he claims is a recent invention that now organises how the world is seen, and where biodiversity is good and a lack of biodiversity is bad. Importantly, this reflects the values of biodiversity *advocates* rather than biodiversity.

Counter-hegemonic positions present a challenge to the dominant view by attempting to establish their own forms of legitimacy. In terms of what is natural, for example, counter-hegemonic positions that have since become sites of resistance include ideas around homosexuality as 'unnatural' or people of colour as 'naturally less intelligent' than Caucasians (Castree, 2005). This last 'truth' has been used to justify slavery, land-grabs, sterilisation programmes and assimilation policies that, at the time, appeared to be simple common sense. It is this attribute that makes for one of the most convincing expressions of power, a point Baragwanath (2003) and Baragwanath, McAloon and Perkins (2003) emphasised in their investigation of the discourse of globalisation which privileges the novel, the external and the global over the local, the specific and the conditional. They hold such power because, as Rescher (2005, pp. 29 - 30) noted, common sense facts seem 'transparently true,…obvious and …self-evident and [their] denial would be deemed not just false but absurd and wildly eccentric'. Thus when ideas attain this status they are extremely difficult to challenge as the ideas have become self-regulating and there is no need for them to be enforced or imposed from the top down.

Castree's (2005) discussion of neo-Malthusian thought serves as another useful illustration of the power of common sense, and the ways in which it can serve particular interests. Malthus (1798) argued that while increases in resources are arithmetic, population growth is geometric, hence population will eventually and inevitably outstrip supply. This line of thought was adopted in *The Limits to Growth* (Meadows and Meadows, 1972) and *Lifeboat Ethics* where Hardin (1974) argued that:

> We should go lightly in encouraging the rising expectations among the poor…for if everyone in the world had the same standard of living as we do, we would increase pollution by a factor of 20. Therefore it is questionable morality to increase food supply. We should hesitate to make sacrifices locally for the betterment of the rest of the world.

Yet Harvey (1974) claimed the neo-Mathusianism that led to this kind of thought should be considered an ideology because, following Marx, such ideas are always those of the ruling classes, and Hardin's comment clearly reveals where his interests lie. Harvey's own position was not that a Malthusian view is inherently illogical but that it rests on certain assumptions about nature that appear to be common sense and incontestable but are actually more controversial. 'Subsistence levels', for example, are historically and culturally relative, as is the concept of 'natural resources'. Furthermore, he argued that scarcity is more the result of power relations and the tendency for capitalism to generate wealth for the few and poverty for the many. What appeared to be logical and common sense was in essence a justification for the West's reluctance to redistribute wealth in more equitable ways (Castree, 2005).

Science and Sensibility

Science, technology, rational calculation and quantification are important components in the process of establishing hegemony via the legitimisation of certain ideas such as

bio-physical environmental limits, sustainability and sustainable development. A good deal of credibility rests on the way science portrays itself as apolitical, value-free and objective. In celebrating these characteristics, science presents a convincing case that these are the terms upon which decision-making should be made. Robert Merton (1973 [1942]) has been a key proponent of this view of science and Law (2004, p. 16) refers to him as the inventor of the sociology of science. His portrayal of 'real' science - free from the influence of politics, ideology and economic interests - would enable scientists to 'pursue [their] task of discovering the truth about the natural world' (Fitzgerald and Dew, 2004, p. 10). That science does this is one of the more fundamental truths of our age.

There are, of course, what we might call counter-hegemonic views of science. Fitzgerald and Dew (2004, p. 11) in their collection of challenges to science in New Zealand note that 'The image of the scientist as someone independently choosing their own research problems and plugging away in their own laboratory is largely a romanticised one from an imagined past'. That those with a vested interest in the outcomes often fund scientists' work is not the only point in an increasingly diverse critique of science, its objectivity and its methods; and I have already discussed Law's (2004) *After Method* and Flyvbjerg's (1998) *Rationality and Power*.

Levidow's (1986) collection, *Science as Politics*, adopts a similar perspective and highlights the contested nature of scientific discovery. From human geography, Gregory (2004) presents the complex genealogy of the 'war on terror' and shows how much of the scientific evidence used to justify both this war and other foreign policy has been manufactured in the interests of a 'colonial' present and future. Livingstone (2005) argues that the interpretation and application of scientific theory is shaped

heavily by local cultural politics. Mulkay and Gilbert's (1991) 'sociological pilgrimage' provides a good illustration of how scientists construct their social worlds through discourse as does Potter and Wetherall's (1994) analysis of the representation of scientific facts in the television programme *Cancer, Your Money or Your Life.* Though there are many who might argue that there are numerous benefits to be had from the way the natural and physical sciences 'shape our vision of the world' (Davis, 1997) others believe the supposed objectivity of these sciences to be more damaging. Owens (2005, p. 289), for example, has argued that 'subtly, [policy] outcomes may be predetermined by ostensibly neutral techniques of ['scientific'] appraisal, so that political and ethical choices masquerade as technical ones'. This separation of ethics and technology signals the ambivalent role of science in today's world, a predicament that Beck has highlighted in *Risk Society* (1992). While science and technology have indeed brought us many benefits, they have also altered the form and likelihood of human-generated hazards such as nuclear disaster (Chernobyl, Ukraine), chemical spills (Bhopal, India and the Rhine, Germany), oil spills (Valdez, Alaska), ozone depletion and global warming. I will suspend my discussion of the implications of Beck's work until later, and now turn to a debate surrounding the ways in which the ambivalence of science and the nature of nature become apparent in everyday life.

Everyday Life as Location and Process

Practical common sense, or 'phronesis' to use Flyvbjerg's (2001) term, has, in contrast to episteme and techne, an irrefutably *everyday* air about it. With some notable exceptions (see, for example, Macnaghten, 2003) a scholarly concern with everyday life is relatively recent in Anglo-American social science, it having been

neglected in the search for those structures that inform our everyday lives. The French, however, have long been interested in the quotidian and its connections to anything from ways of walking (Bourdieu, 1986) to urban form (Lefebvre, 1991). De Certeau's *The Practice of Everyday Life* (1984) was instrumental in asserting the importance of everyday activities, such as reading, talking, cooking, dwelling, as active in the construction of social reality. Bourdieu (1986, 1998) was also concerned to highlight the connections between the most mundane actions, such as blowing one's nose, to wider social structures involving the division of labour, domination and so on. Central to his theorisation is the way in which practical knowledge is a 'genuinely constitutive power' which can then be used to reconcile objective reality on one hand and its representations on the other.[13]

The role of everyday life also assumes extra significance in the works of Henri Lefebvre in *The Production of Space* (1974, translated 1991) where he provided a theoretical framework within which to explore the relationship between legislation and policy, spatial manifestations and everyday life. Lefebvre was particularly concerned to achieve two things. First, he wanted to show how space is actively produced using a 'conceptual triad' involving spatial practices, representations of space and representational spaces. Representations of space are conceptualisations of space as constructed by planners, architects and developers with their attendant belief systems. Representational space is directly lived and it 'overlays physical space making symbolic use of its objects' (Lefebvre, 1991, p.39) and, as Merrifield suggested, in representational space 'there's more *there* there' (2000b, p.174). Spatial practices give everyday, social and urban realities structure and include patterns of

[13] Thrift's non-representational theory also takes issue with a distanced view of the world.

interaction and other networks. It is spatial practice that keeps representational space and representations of space both together and apart (Merrifield, 2000b, p.175).

Second, Lefebvre was concerned to bring about a 'rapprochement between *physical* space (nature), *mental* space (formal abstractions about space), and *social* space (the space of human action, and conflict and 'sensory phenomena')' (Merrifield, 2000b, p.171) which he thought had been separated in the interests of capital. This triad challenged traditional dualisms where, for example, space was seen as an 'objective physical surface with specific fixed characteristics upon which social categories were mapped out' (Valentine, 2001, p.4). Space, such an important component of everyday life, is now seen as playing an 'active role in the constitution and reproduction of social identities, and social identities and relations are recognised as producing material and symbolic or metaphorical spaces' in the same way that inscription devices and method assemblages (Law, 2004) create knowledge or generate particular interpretations.

In this view, space and society not only interact, they are mutually constitutive and become manifest in daily life. This perspective can be related to recent debates about the imagined geographies of places and the ways in which such geographies underpin people's interpretations of environmental and social change. The use of the term 'imagined geographies' here recognises the co-constitutive nature of space, that is, the blend of 'real', 'subjective' and 'inter-subjective' spaces. That these three 'spaces' are linked emphasises the point that changes in one space will inevitably echo in another and the value of Lefebvre's thesis is the acknowledgment of the intimate connection between abstract, planned spaces, daily life and these imagined geographies. An

example of this is the ways in which cities now try to brand themselves in order to participate in the global competition for skilled migrants and foreign investment. This branding imperative is having a profound effect on the ways in which our cities are constructed not just physically but mentally as well. This idea has been a feature of Eade and Mele's (2002, p. 6) discussion of developments in urban theory. They note that urban imagery should be seen as a 'constitutive element in the social production of the city [where] the built form of the city and the interpretative schemas of different social groups are in active engagement… The imaginary… acts and is acted upon through the production of the city'. Concepts such as 'urban sustainability' also play a key role in the generation of these imaginaries, albeit in often unforeseen ways. The ways in which this idea moulds the construction of the city, both mentally and physically, is a central task of my own investigation as are the ways in which these constructions are made, and the reasons why they are made in particular ways.

Thesis Overview

While I will present a more detailed account of urban sustainability in the following pages, this chapter has introduced the various concepts associated with the term within a broad theoretical arena of the production and construction of meaning. I have explored some of the key themes and ideas underpinning my study; foremost among these is the incongruity of the popularity of terms like urban sustainability given the contested nature of the realities they seem to present. As outlined earlier the more orthodox urban sustainability tripartite – the schema that sets it apart as a movement, a goal or a way of being – tries to combine social, economic and bio-physical environmental factors. Yet, as I have shown in this chapter social and even bio-physical environmental 'realities' should not necessarily be taken at face value. This

is a feature of the emergent field of urban political ecology which posits particular views of nature and society as central to issues like urban sustainability.

This position has consequences for what can be considered an appropriate methodology, and this is discussed in Chapter Two. Chapter Three outlines my reading of the evolution of the concepts of sustainability, sustainable development and sustainable management, and Chapter Four is devoted to an exploration of the urban as this is a concept that too often suffers neglect, confusion and reductionism. Chapter Five presents some background information on the case study area and this necessarily involves an investigation of developments at the national and international levels as these inform – but do not dictate – local events. In Chapter Six I discuss the methods used in my investigation in more detail. In Chapters Seven through to Ten I present the results of my research based on in-depth interviews with 35 urban practitioners. These results are discussed and evaluated in Chapter Eleven. Chapter Twelve offers some conclusions based on existing literature and my own results.

Chapter Two: Methodology

Urban sustainability is an increasingly ubiquitous term, and its all too frequent invocation makes it appear a singular, fairly straightforward idea, if somewhat difficult to achieve in practice. Yet as I outlined in the previous chapter, if nothing else, the multiplicity of truth and the contested character of the seemingly simple terms 'nature' and 'society' should make us wary of accepting the term at face value. My objective is therefore to dig beneath the usual unreflective use of the term and explore how urban practitioners understand and apply the concept, with what consequences. I am not seeking to uncover some 'true' meaning of the term, to discover barriers to sustainability or develop yet another set of indicators, but to investigate the multiplicity surrounding its use.

If humans make meaning and their realities (rather than simply responding to a singular objective, predetermined reality), the appropriate explanations of that reality must result from an understanding of the meaning-making of social actors rather than an assessment of external structures (Swingewood, 2000, see also Jaworski and Coupland, 1999). With the objective of exploring my participants' understanding of urban sustainability in the context of their everyday professional practice heavily structured quantitative methods were unsuitable as, in the first instance, it would have involved imposing my own understanding on the interviewees via the survey instrument. A structured quantitative approach would, in the second instance, foreclose the possibility of exploring alternative views and 'the sheer density of feeling…and complex relationships between ideas of nature and wider critiques of progress and societal change' (Macnaghten and Urry, 1998, p.77). My own study required methods that allowed me to observe various settings and the participants,

gain in-depth or 'rich' information from certain key informants and combine this with an evaluation of other texts and observations. Thus my research was situated within what we might loosely call *naturalistic* tradition because much of the social phenomena I witnessed happened in their natural settings rather than in a simulated environment like the laboratory or via some secondary mechanism such as a postal survey. Naturalism can be seen as an attempt to gain an understanding of social life as the participants see it (Babbie, 2001, p.283), or as an 'examination of the contexts in which meaning and behaviour arise' (Perkins, 1989, p.74). This requires some understanding of how people make sense of the everyday world (Babbie, 2001) or, as Ley (1988, p.121) put it, the researcher must try to 'make sense of their making sense of the events and opportunities confronting them in everyday life'.

More specifically, I adopted the techniques associated with critical discourse analysis and symbolic interactionism. The term 'exploration' is often used to describe that process whereby the researcher engages with multiple lines of enquiry (Blumer, 1969; Lofland and Lofland, 1995; Perkins, 1988, 1989; Baragwanath, 2003) which will yield numerous, sometimes disparate or even contradictory data. Both observations and interviews allow the researcher to 'collect the richest possible data, achieve an intimate familiarity with the setting, and engage in face-to-face interaction so as to participate in the minds of the settings' participants' (Lofland and Lofland, 1995, p.17).

'Inspection' involved analysing and categorising the various data along thematic lines. Whilst my initial attempts lacked the subtleties of later versions they can be

seen as attempts to evaluate each piece of data for its significance, highlight or resolve contradictions and flag new lines of enquiry. As time went by an increasingly important part of my study involved paying attention more specifically to what was *not there*, though this was more difficult to achieve (see Foucault 1972 and Law, 2004). Though it was complicated somewhat by this absence of data, my study was generally consistent with a qualitative research process typified as highly interpretative, responsive and reflexive, where data gathering and analysis take place concurrently.

Symbolic Interactionism

As outlined in the previous chapter, symbolic interaction is a response to a need for methodological tools with which we might investigate the intersubjective nature of human experience and activity. It does not invoke meta-level structural explanations of human behaviour, nor does it rely on micro-level accounts of individuals in isolation as they go about daily life. Instead, the focus is on intersubjective, or shared experience and behaviour. From this perspective, understanding social situations means 'understanding the capacity of actors to actively create their social situations and to learn from them' (Bounds, 2004, p. 27). Becker and McCall (1990, pp. 3-4) elaborate on this in the following way:

> Any human event can be understood as the result of the people involved…continually adjusting what they do in light of what others do, so that each individual's line of action 'fits' into what others do. That can only happen if human beings typically act in nonautomatic fashion, and instead construct a line of action by taking account of the meaning of what others do in response to their earlier actions. Human beings can only act in this way if they can incorporate the responses of others into their own act and thus anticipate what will probably happen…(This emphasis on the way people construct the meaning of others' acts is where

> the 'symbolic' in 'symbolic interaction' comes from). If everyone can and does do that, complex joint acts can occur (Adapted from Becker, 1988, p. 18).

Importantly, it is this reflexivity that forms the means by which structures change over time; an idea which has been developed by Bourdieu (1998) and Giddens (1984).

The symbolic interactionist's enterprise is empirical, and often involves detailed ethnographies that include participant observation. Becker and McCall (1990, p.5) insist that the researcher should answer their research questions by going out into the world to 'see for themselves' and then generate a theoretical position in line with their observations. Prus (1996) adopted a similar view, suggesting observation, participant observation and interviews be used for data collection. Observation, he noted, includes not only 'those things that one witnesses through one's visual and auditory senses' but also 'documents, diaries, records, frequency counts, maps and the like'(1990, p. 19).[14] Participant observation, on the other hand, turns what has been considered a weakness of qualitative research – the so-called *biased* or *subjective* elements – into a strength. As a participant, one's experiences can provide a real insight into particular life-worlds and may enable the researcher to 'access the experiences of others in these settings in much more meaningful fashion' (Prus, 1996, p. 19). Interviews using many open-ended questions form the third method of data collection as they provide an opportunity for the researcher to 'uncover, ascertain and qualify meanings that others hold for objects in their life-worlds and the ways in which people go about accomplishing their activities in practice' (Prus, 1996, pp 20-21). This inclusion of the both observation of documents and texts, and interviews in

[14] Some of these that proved useful for my own investigation included documents associated with the Christchurch Southwest Area Plan, the Greater Christchurch Urban Design Strategy and the Draft Long-Term Council Community Plan. These are discussed in more detail in Chapter Five.

as legitimate methods of data collection is consistent with other approaches that focus on the linguistic elements of social life, such as critical discourse analysis.

Critical Discourse Analysis

There can be little doubt that there is a great deal of talk about sustainability. It is a central tenet of the social sciences that social processes and entities, such as language, are constitutive in that they both reflect and help construct the social world. This construction is mediated by existing institutions and other more or less coherent 'enactments' (Law, 2004), hence the naturalistic research methods attempts to capture the flow of meaning-making as it is both produced and reproduced. Language, in spoken and written form, comprises one social process with which we may engage, evaluate and analyse in order to form conclusions about the way people understand their world. Discourse analysis is often used to explore these processes.

As Baragwanath (2003, p. 13) writes, 'Discourse is a useful concept, but it is notoriously nebulous'. The difficulty of defining discourse can be attributed in part to the way it varies in different contexts among different authors. Discourse is therefore many things to many people. Dryzek's (1997, p.8) application of discourse is interesting in terms of my own work because of his focus on environmental discourses. He defines discourse as 'a shared way of apprehending the world. Embedded in language, it enables those who subscribe to it to interpret bits of information and put them together into coherent stories'. Dryzek sees discourse as comprising 'basic entities' whose existence is explicitly recognised. As an example, some discourses acknowledge ecosystems as being 'real' whilst others do not. According to Dryzek, discourses also include assumptions about what natural

relationships might be, such as competition rather than cooperation or the existence of hierarchies. Agents and metaphors, such as the global commons or God comprise other elements of a discourse (1997, p. 16).

Fairclough (1992, 1995, 2003) is more explicit about the constitutive role of discourse. He wrote:

> Discourses are ways of representing the world – the processes, relations and structures of the material world, the 'mental world' of thoughts, feelings, beliefs and so forth, and the social world. Particular aspects of the world may be presented differently, so we are generally in the position of having to consider the relationship between different discourses…Discourses not only represent the world as it is (or…as it is seen to be), they are also projective, imaginaries, representing possible worlds which are different from the actual world, and tied into projects which change the world in particular directions (2003, p. 69).

Thus, rather than simply identifying and categorising various discourses, we should also attend to the *constitutive* and *performative* qualities of discourses and the ways in which they change the world, including its material form, its architecture and urban design. While some discourse analysts limit their investigation to grammatical constructs, such as nominalisation, Fairclough is more interested in the '*systems of rules* which make it possible for certain statements but not others to occur at particular times, places and institutional locations' (Fairclough, 1992, p. 40, my emphasis). What is it that constrains some kinds of talk while other forms flourish? How are some forms of knowledge legitimised and then naturalised in the built environment whilst other ways of knowing are discredited and dismissed? Asking these kinds of questions encourages the researcher to go beyond superficial readings of texts and look for those systems of rules that promote certain discourses while making others

difficult if not impossible, though this must necessarily also take into account actual texts and more detailed mechanisms of change.

Balancing systems of rules with more detailed mechanisms requires a multiple approach to discourse analysis. Baragwanath (2003), in following Fairclough, thus identified three levels at which we might conduct our investigations based on texts, interaction and social context which correspond to micro-, meso- and macro- levels explanations. The ideological content of texts, exposed in assumptions and metaphors, can be examined at the micro-level through an ‘analysis of its words and sentences’ (Baragwanath, 2003, p. 15). It is important to keep in mind that what was meant to be said is less important than ‘looking at what position the subject must have been in for them to be the subject of such utterances’ (Fairclough, 1992, p. 53).

To make such an assessment of this requires attention to the context in which statements are made. Scollon and Scollon (2003) provide a good argument for being attentive to such matters: a 'No nude bathing' bathing sign ostensibly means the same thing in the back of the truck going to the beach as it does displayed at the beach, but it has a different effect in each case. Baragwanath (2003) takes such examples as implying a need for meso-level, ‘interdiscursive’ analysis where discourses can be understood as representing the world or a part of it where analysis goes beyond grammar to get at ‘shared’ imaginaries. These shared imaginaries are similar to Griggs and Howarth’s ‘policy frames’ (2002) which form a framework within which a hierarchy of norms and codes exists. This hierarchy then guides behaviour and decision-making in policy formation. The degree to which these understandings are shared forms the basis of Fairclough’s (2003) distinction between ‘little d’ discourses

which are more particular to space and time and ‘big D’ discourses which are more general, such as liberalism and environmentalism. ‘Sustainability’ can thus be seen as a Discourse within which other discourses operate, such as those surrounding the social, bio-physical environmental and economic. These, in turn, play host to range of other discourses of which the urban, resource management, justice and profit are but a few.

History is the arena within which macro-level analyses can take place. Both Nietzsche’s and Foucault’s work around genealogies is critical here because formal accounts of history are not necessarily good accounts of what happened so much as a documentation of who was able to get their ideas put down for posterity. This awareness of history’s permutability has filtered through into popular literature and the arts, from bumper stickers stating ‘Eve was Framed’ to books, such as Umberto Eco’s *Baudolino* (2002) or even Dan Brown’s *DaVinci Code* which is rumoured to be among the best selling books of all time. These all alert us to the need to be mindful of history because history is a record of particular relationships between truth, knowledge and power (Danaher, Schirato, Webb, 2000, p. xi).

In terms of my own work, one of the more important aspects of macro-level social analysis pertains to significant developments and changes to the ways in which resources (including ‘human’ resources) are understood and used. Another aspect is the concept of the urban which has undergone many iterations, particularly since the Industrial Revolution that has led to the urbanisation of much of the West’s population. As a corollary, explanations of the urban and urban change have proliferated, but some of the more interesting and influential include the Chicago

School's 'classic' urban ecology, recent developments in urban [political] ecology and urban regime theory. I discuss the urban condition further in Chapter Four, but here I would like to focus specifically on the role of discourse in the theorisation of urban change and policy directed towards sustainability. Desfor and Keil (2004, pp. 46-47) also have a keen interest in this but note that 'little work has been done to clarify the role of symbolic and discursive processes in the emergence of urban regulation, regime and governance'.

Though not concerned with urban areas *per se*, Rydin's (1999) examination of discourse around environmental sustainability highlights the disparity between the concept's normative potential and its ambiguity which can lead to spirited debate around particular policies. She noted that these arguments 'are related to the structures of interests and power in society, though not determined by them'. And while environmental policy discourses 'reflect…the societal structures of power…they also have potential to change them' (1999, p. 481). Such change, according to Hastings (1999), can occur through the alteration and modification of institutional structures and, in this view, it is literally possible to 'talk ourselves into it' (Rydin, 1999). Importantly, this conceptualisation of the role of discourse in environmental policy formation rests on the ways in which linguistic practices condense into coherent coalitions which are then able to fulfil a normative function (also see Molotch (1976) and Gibbs and Jonas (2000)).

Others dispute this model which, in the final analysis, is predicated upon good communication and understanding between the various parties involved. Instead they emphasise the struggle or the 'interweaving of disparate discursive acts' (Desfor and

Keil, 2004, p. 47) associated with political undertakings (see, for example, Hajer, 1995a and b, 1999, 2000; Sharp and Richardson, 2001). In this model, which is loosely based on the work of Foucault, discourses are seen as 'different systems of meaning' which compete and subsequently affect social change (Sharp and Richardson, 2001, p. 196). This competition, of course, takes on a particular significance in a democracy where progress involves not only institutional and constitutional reform, but also head-on conflict, coalition- building, changing the ground rules or exposing the relationship between rationality and power (Flyvbjerg, 1998, p. 236). At the heart of this approach is a return to questions about truth, which is attributed to some statements, by some people, but not others (Sharp and Richardson, 2001). Because there is no absolute truth, '"good" social change cannot be pre-specified by theory' (Sharp and Richardson, p. 198) and other factors, such as practice, power and competition, come into play.

In a similar tradition but with a different emphasis, Murdoch (2000, 2004) is critical of a discursive turn he sees as divorced from geography and argues for a return to Foucault's focus on the materiality or *governmentality* of discourse (also see Bulkeley (2006) who has adopted a similar approach). This refers to the process whereby specific discourses are reified and quite literally made concrete in particular ways, such as the architecture of prisons and hospitals. Importantly, these physical manifestations are accompanied by political rationalities which Rose and Miller (1992 in Murdoch, 2004, p. 51) describe as 'discursive fields within which the exercise of power is conceptualised'. These rationalities, in turn, call upon particular technologies or 'programmes, calculations, techniques, apparatuses, documents and procedures through which authorities seek to embody and give effect to governmental ambitions

(Rose and Miller, 1992 in Murdoch, 2004, p. 51). These, in effect, bring us a full circle as they essentially refer to the inscription devices and method assemblages Law (2004) describes in his articulation of how realities are made.

In light of my objectives regarding an exploration of urban practitioners' interpretations of urban sustainability, none of which is more 'true' than any other, it is important that the focus of my investigation rests with how these understandings are made and acted upon. The methods and tools of symbolic interactionists and discourse analysts are both useful in this endeavour as both approaches are more keen to explore the nature of this manufacture of truth than to evaluate it against some external and objective criteria. They also are compatible in terms of suitable matter for data collection and methods. They are complementary in the sense that while symbolic interactionists are perhaps more attentive to the intersubjective elements of everyday life, discourse analysts are arguably more sensitive to conflict and structural change. The notion of governmentality and the rationalities that underpin the reification of concepts like urban sustainability are particularly pertinent here.

Chapter Three: The Rationalities of Sustainability - Some Slippery Concepts

It has been argued that the concept of sustainability as an aspiration centred around the survival of the human race emerged during the 1960s and 1970s (Holdgate, 1990). There were, however, a number of developments that were prerequisite to this line of thought. The concept of extinction, for example, had to be invented. Diamond provides an interesting account of this in his explanation of why human fossils were not 'found' until 1856 when workers in the Neander Valley in Germany discovered the bones of Neanderthal Man. He argued that, of course, the bones had already been found and the evidence had been there all along, only the interpretation had changed. He explained:

> Species were thought of as immutable. Fossils that had been found for 300 years were not regarded as they are now, because that would imply species can become extinct. This is a difficult perception if it is taken to mean that God is a poor designer and if your initial premise is God's perfection (Diamond, 1986, p. 12).

Darwin's *Origin of Species* (1859) was very influential as it challenged religious explanations of existence in favour of an evolutionary account where extinction and survival were central. These ideas could then inform new debates around resource use and distribution.

Grove (1990) claims that ideas about conservation and the use of resources have always been highly politicised and that scientists were manipulating state policy by playing on fears of demonstrable and seemingly objective evidence of 'environmental cataclysm' (p. 15) as early as the mid-eighteenth century. These stemmed, in large part, from the explorations of early colonialists whose newly 'discovered' islands

came to be seen in practical and mental terms as a metaphor for the whole world and destruction on a global scale. The demise of the friendly dodo on the island of Mauritius provided an excellent case in point. Along with extinction, the scientific body of knowledge about different world climates also grew, and this was used in arguments around appropriate paths for development and growth. Grove (1990, p. 25) noted that 'Scientists discovered that the threat of artificially-induced climatic change …was one of the few really effective instruments that could be employed in persuading governments of the seriousness of environmental crisis'. As an example, he cites J. Spotswood Wilson's 1858 address to the British Association for the Advancement of Science where he warned that the atmosphere and water were:

> slowly approaching a state in which it will be impossible for man to continue as an inhabitant…as inferior races preceded man and enjoyed existence before the earth had arrived at a state suitable to his constitution, it is more probable that others will succeed him when the conditions necessary for his existence have passed away.

The confluence of such ideas as extinction and climate change fitted nicely within a new scientific discourse surrounding 'the environment', and this was complemented by the Romantic Movement's worship of 'nature'. Post-World War Two education, increasingly higher rates of literacy and the rise of the mass media helped make both nature and the environment a part of the lingua franca for both rural and urban residents.

Early Conceptualisations of Sustainability

By the 1960s and 1970s the less flattering effects of human 'supremacy on earth' were widely televised and publicised and this led to a wave of environmental concern, exemplified in increasingly popular literature like Carson's *Silent Spring* (1962). In 1972 Donella and Donald Meadows published *The Limits to Growth* (Club of Rome, 1972), which was based on a computerised model condition on planet Earth called 'World 3'. The assumptions behind the model were that pollution, population and production would continue the trend of exponential growth, and the authors concluded that because the world's resources are finite its limits must eventually be (b)reached resulting in a crash to poverty, overcrowding and hunger (See Basiago, 1998; Wackernagel and Yount 2000). Their advice was to recycle, reduce population, reduce consumption and peg capital investment levels to depreciation. These concerns were mirrored by the editors of *The Ecologist* (1972) in a *Blueprint for Survival* and at the United Nations Conference on the Human Environment in Stockholm the same year.

Figure 2: Fragile 'Lifeboat' Earth

(www.southbaymobilization.org)

Torgerson (1995, pp. 3-4) sees the publication of *The Limits to Growth* as a crucial turning point in the evolution of the concept of sustainable development. He noted that it was during this time that the idea of 'limits' was injected into public discourse, however, the apocalyptic visions presented by limits theorists were vastly at odds with the 'ideological context'. This, he argues, was based on the modern conception of progress with its roots in nineteenth century positivism, exemplified in approaches to resource management such as the 'maximum sustainable yield' (see Black, 1995 and Frazier, 1997 for a critique of this approach[15]). The ideology of industrialisation, according to Torgerson (1995, p. 9), involved images of 'unified knowledge, purpose and power' and a belief in the ability of humankind to exert mastery over the natural world. In an attempt to make limits theory more palatable to this audience by invoking images of 'vitality and dynamism within the context of an equilibrium state' and at the same time 'avoid the connotation of stagnation' while subordinating it to avoiding global catastrophe the Meadows cite John Stuart Mill at length:

> It is scarcely necessary to remark that a stationary condition of capital and population implies no stationary state of human improvement. There would be as much scope as ever for all kinds of mental culture, and moral and social progress; as much room for improving the Art of Living, and much more likelihood of its being improved, when minds ceased to be engrossed by the art of getting on. Even the industrial arts might be earnestly and successfully cultivated, with this sole difference, that instead of serving no purpose but the increase of wealth, industrial improvements would produce their legitimate effect, that of abridging labour. Hitherto it is questionable if all the mechanical inventions yet made have lightened the day's toil of any human being. They have enabled a greater population to live the same life of drudgery and imprisonment, and an increased number of manufacturers and others to make fortunes. They have increased the comforts of the middle classes. But they have not yet begun to effect those great changes in human destiny, which it is in their nature and in their futurity to accomplish (1865, p. 756-7, in Torgerson, 1995, p. 8).

[15] Many of the problems with the MSY approach, such as nature's economy being neither 'equilibrated nor predictable' (Black, 1995, p. 22), can also be applied to the idea of carrying capacity.

The growth trajectory did not change along these lines, however. While the notion of 'limits' could be accommodated within a framework which adhered to the efficient use of (scarce) resources, the Meadows' outright challenge to the growth model and its ultimate purpose was unlikely to meet with widespread approval and support from powerful interests.

The Brundtland Report and Sustainable Development

This is a point over which the so-called Brundtland Report *Our Common Future* (WECD, 1987) and *Limits to Growth* part company. Although the two-word term 'sustainable development' is said to have been used first by the United Nations Environment Programme and the International Union for the Conservation of Nature (IUCN) in 1980 (Basiago, 1998, Frazier, 1997) it was the Brundtland Report that truly popularised the concept. It was here that 'sustainable development' was first defined as 'Development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (p. 40). Although this definition is the one used most often, it is a relatively small part of a larger construct: The report makes a number of points with their objectives comprising reviving growth; changing the quality of growth; meeting essential needs for jobs, food, energy, water, and sanitation; ensuring a sustainable level of population; conserving and enhancing the resource base; reorienting technology and managing risk; merging the environment and economics in decision-making; and reorienting international economic relations (1987, p. 49).

Economic growth takes a central role in this model though its legitimacy rests on its potential to address wider social and bio-physical environmental concerns by tying resource depletion to poverty (p. 3). That poverty is a major cause and effect of global environmental problems also raised questions of equity both within and between nations and generations. A rather less well-publicised part of the report states that 'Sustainable global development requires that those who are more affluent adopt lifestyles within the planet's ecological means' and that 'Painful choices have to be made [meaning that] in the final analysis, sustainable development must rest on political will' (p.9). They state that it may be the case that 'growth' requires a full account of the costs of 'environmental destruction' (p.37) not least because the bio-physical environment and economics are linked to many social and political factors. Furthermore, they suggest that 'It could be argued that the distribution of power and influence within society lies at the heart of most development challenges' (p.37).

Contentiously, the report states that the concept of sustainable development 'does imply limits – not absolute limits but limitations imposed by the present state of technology and social organisation of environmental resources and by the ability of the biosphere to absorb the effects of human activities' but that 'technology and social organisation can both be managed and improved to make way for a new era of economic growth' (p.8). Finally, the report makes it clear that 'Far from requiring cessation of economic growth… the problems of poverty and underdevelopment cannot be solved unless we have a new era of growth in which developing countries play a large role and reap large benefits' (p.40).

Though the definition of sustainable development (and even sustainability) is often limited to 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs', it is clear that this provides a neat bypass around many complex and controversial ideas that deserve to be explored in more detail.

Limits to growth or the growth of limits?

Perhaps the most controversial aspect of the Brundtland Report is the role of economic growth. This is because so many observers believe the pursuit of economic growth is the *cause* of bio-physical environmental degradation and not, emphatically, its *solution*! O'Riordan has called it 'a contradiction in terms' (1985; also see Redclift, 1987), Lele 'an attempt to have one's cake and eat it too' (1991, p. 618), Frazier an 'international craze' which has become a 'source of confusion, contention, and even deception' (1997, p 182; see also Howart, 1997). Smail (2002) finds the idea of sustainable growth ('growth' being an integral part of the concept of sustainable development) 'at best a continuing exercise in economic self-deception and at worst a politically pernicious oxymoron' (p.27). Torgerson (1995, p. 10) seemed to agree, as he wrote:

> Ironically, the idea [of sustainable development] appears to carry the same presuppositions which, environmentalism had charged, supported unsustainable development in the first place – especially, the confident expectation that development, in any conventional meaning of the term, can actually be sustained.

Gleeson and Low (2000, p. 3) argue that the idea of sustainable development has changed from the original model founded on 'a specific ethical content…based on the assumption of a virtuous form of growth in which the masses come to share in a general prosperity in which everyone's needs are met'. This earlier model can be

described as ‘socially sustainable capitalism’ because if markets and enterprises failed to meet human need, governments would intervene. They argue that the current model, which parades under the banner of sustainable development, is radically different from the original because the globalisation of the economy has ‘imposed a discipline which is patently no longer consistent with the spread of equality and the meeting of need’ (p.4). The effect is that ecologically and socially sustainable development is a far more distant prospect, one that will have to be negotiated in a ‘terrain of conflict’ (Baureidl and Wissen, 2002, p. 108).

Willers (1994), a biologist and self-described ‘conservationist’ (pers. com. 02/04) appeared to share these concerns when he explicitly questioned the utility of the term, seeing it as a figurehead of a blatant conspiracy where ‘sustainable development’ is simply a code for ‘perpetual growth’ (p.1146). He wrote:

> The maxim of sustainable development is not ‘limits to growth’; it is the ‘growth of limits’. The concept …has been force-fed to the world community by the global corporate political media network that is paving the way for a New World Order…It comes to us on a daily basis, packaged in such a sugar coat that to refute it is to seem unpatriotic especially when continued growth and development are presented as compatible with ‘respecting environmental constraints’. But proponents of sustainable development do not respect environmental constraints, and they ignore the fact that the First World has long since lived beyond sustainability. Indeed they hold up the over-consumptive lifestyle of industrialised society as the standard…Sustainable development guarantees the continued deterioration of ecosystems and the loss of biodiversity (pp.1146-7).

In a personal communication (02/04) Willers noted that he has collected more reprint requests on that one article than on all other articles of his career together. He takes that to perhaps mean a ‘distrust’ of the concept. This distrust is perhaps not surprising

given the World Bank is one of the central agencies monitoring environmental policy. While some have seen this as proof that 'the environment' is on the world agenda, others (see, for example, Buhrs, 2000; Grundy, 2000; Elander and Lidskog, 2000) have pointed out that this appointment does not mark the success of environmentalists, but rather their total collapse.

Rees has long been one of the more outspoken and clearly articulate critics of the concept of sustainable development and it is worth outlining some of his arguments. First he accounts for the popularity of the idea in the following way:

> This innocuously skeletal definition [of sustainable development in the Brundtland Report] gave something to everyone, and academia, governments, and non-government organisations have been striving ever since to flesh it out. As global ecological conditions worsen, any concept that implies we can have our development cake and have the environment too naturally inspires enthusiasm on all sides of the debate. …Environmentalists …on the political left emphasise the 'sustainable' part….Economic planners, the political centre and all those to the right lay stress on the 'development' component….From this perspective, there are no limits, growth comes first, the present system works, and the global expansion of market economies will create all the wealth needed for world ecological and social security (1998, p. 20).

He points out that the Brundtland Report reassures us that sustainable development does not depend on a 'fixed state of harmony' but will involve change in which 'the exploitation of resources, the orientation of technological development, and institutional change are made consistent with future as well as present needs' (WCED, 1987, p. 9). Rees highlights the report's advice on achieving sustainable development as resting on increased international investment; an expanded role for transnational corporations; the removal of 'artificial barriers to commerce'; and expanded global trade (Rees, 1998, p. 20-21). Because it essentially advocates a market-driven

economy and ‘trickle-down economics’, and fails to address over-consumption, Rees believes the Brundtland Report to be a ‘thoroughly conventional statement’. He supports Trainer’s (1990, p. 72) view that the report simply constitutes ‘an enthusiastic and unquestioning reaffirmation of the system, lifestyles, and values that are causing the problems under discussion’. Similar arguments have been put forward by a number of other critics. Carvalho (2001), for example, is sceptical of the concept because adopting strategies that are conducive to truly sustainable development (if we knew what that was) would be nearly impossible given the current international political system (see also Yanarella and Bartilow, 2000; Glasby, 2002) have expressed similar concerns.

As a proponent of ecological integrity, the continued focus on growth as a solution to social and environmental problems is cause for alarm, and Rees laments the lack of a meaningful distinction between *growth* which refers to a quantitative expansion of the economic system and *development* which describes a qualitative change in an economic system in a state of bio-physical environmental equilibrium (based on Daly and Cobb, 1989). Indeed, Rees has a great deal more to say about the economic system which he refers to as ‘a sister science’ of Newtonian physics based on the ‘mechanics of utility and self-interest’ (Jevons, 1879, in Georgescu-Roegen, 1975, in Rees, 1998, p. 25). Rees argues that while economics should be a branch of human ecology, it actually uses a mechanical model based on three assumptions that connect closely with the nature/society distinction discussed in Chapter One. The first is that human enterprise is seen as dominating, and independent of, nature and this has separated the economy from material reality. The second is that economics has adopted a ‘circular flow of exchange value’ as opposed to the ‘one-way entropic

throughput of matter' meaning that production and consumption are (mistakenly) seen as self-sustaining. Finally, resources are more commonly seen as the result of human ingenuity rather than a product of nature.

Economic, Bio-physical Environmental and Social Sustainability

Many of the critiques outlined here are the result of different emphases in the balancing of social, economic and bio-physical environmental goals. Values surrounding growth, development, conservation and so on are integral to the concept of sustainability; however, the weight given to each varies considerably across different actors. Although such frequent invocation of the term does not necessarily reflect this, sustainability and sustainable development are complex terms that attempt to address a number of disparate and sometimes incompatible ideas surrounding the bio-physical environment, society and the economy. I would like now to explore some of these facets in more detail.

Economic sustainability

The notion of economic sustainability enjoys a number of perspectives within the sustainability/sustainable development literature though it is usually tied to assumptions about continued growth and profitability. Harris and Goodwin (2001, p. xxix), for example, have described an economically sustainable system as one that can 'produce goods and services on a continuing basis, to maintain manageable levels of government and external debt, and to avoid extreme sectoral imbalances that damage agricultural or industrial production'. It is this notion of achieving these goals on 'a continuing basis' that is among the more contentious of issues surrounding economic growth and there are varying opinions as to the conditions under which they might be

achieved. Within the economic sustainability literature, these opinions tend to constellate around specific attitudes towards economic growth, resource limits and the ways in which these limits are changing.

In the pre-industrial age, very little attention was directed towards growth and it was thought that it could be achieved only via an increase in taxation or population. By the late 1700s, however, the notion that economic growth could occur through other means became widespread. Nowadays, orthodox thought is that economic growth can be generated via economic surplus based on the productive capacity of the nation – that is, the percentage rate of increase (or decrease) in the wealth or income of a nation (or other entity). This is typically measured in terms of gross domestic product, which is often taken to reflect the average standard of living within a nation.

Literature devoted to economic sustainability contributes to this notion of economic growth by exposing GDP as a rather blunt instrument that fails to address general well-being, unpaid work such as housekeeping or child care or inequalities in the distribution of wealth. More fundamentally, much of this emergent literature advocates a substantially revised treatment of bio-physical environmental externalities within future discounting procedures where the 'true' costs of resource use are accounted for (Szenberg, 2000). Sen's (1992, 1999) conceptualisation of welfare economics has been influential in the recognition of these factors as missing in orthodox neo-classical accounts, and this has since been made the centrepiece of the United Nations' Human Development Programme. The Index of Sustainable Economic Welfare developed by Daly and Cobb (1989) and later used to form the Genuine Progress Indicators also represents an attempt to include such items in measures of a nation's health. The Sustainable National Income model initially

developed by Hueting (Hueting and Reijnders, 2004) is similar but more limited in its focus on bio-physical environmental issues.

Traditionally, economists have assumed that the supply of natural resources and sinks for waste were unlimited and that the appropriate management of human capital was most essential to continued economic growth. While there has always been an awareness of natural resource limits it was largely assumed that gadgetary, technology and scientific innovation, would ensure substitutes would be found for diminishing resources. This assumed fungibility has now been called into question and this debate lies at the core of economic sustainability. As Constanza and Daly (2001, p. 15) noted:

> Economic theory has focussed on manufactured and human capital, because natural capital has been implicitly or explicitly viewed as abundant. But we are now entering an era where natural rather than manufactured or human capital will be the limiting factor on economic activity.

Bio-physical environmental sustainability

Bio-physical environmental sustainability is basically concerned with the state of nature's stock or natural resources though there are many different positions on how to assess this and what actions should be taken based on these assessments. Gleeson and Low (2000) propose distinctions be made over attitudes towards the extent to which resources are seen as interchangeable and the degree to which resources should be employed in the service of humanity. These distinctions form the basis of a 'ladder' of sustainable development.[16] The bottom rung of the ladder represents a

[16] Similarly, Urich (1999) has adapted Colby's (1990) schema of sustainability paradigms which range through 'very strongly anthropocentric', 'strongly anthropocentric', 'modified anthropocentric', 'ecocentric' and 'biocentric'.

'treadmill' approach which exudes faith in the ability of technological innovation to solve environmental problems and the bio-physical environment is seen as providing a resource base for economic growth. 'Weak sustainable development' forms the second rung of the ladder which, according to Gleeson and Low, is best described by Pearce *et al* (1989). Here, the principles from neoclassic economics and market-based mechanisms, such as appropriate pricing of externalities, are thought to be able to cope with any bio-physical environmental problems. Desfor and Keil (2004, pp. 56-57) posit that weak versions tend to be 'economistic in focus,…technical, instrumental, [and] national'. The third rung is called 'strong sustainable development' and this requires political intervention and regulation to ensure the bio-physical environment is protected. Desfor and Keil (2004, pp. 56-57) argue that strong versions are 'ecological, institutional, communicative, democratic…and [have] the built in capacity for social and environmental change'. Such descriptions are roughly consistent with other authors' articulations of strong and weak sustainability more generally (El Serafy, 2001; Harris and Goodwin, 2001; Munda, 2001; Welch, 2003). Finally, the 'radical' model of sustainable development can be found at the top of the ladder. It is considered radical because mere tweaking of the current economic system is insufficient; a more radical approach is required. This model is ecocentric and uses concepts from 'deep ecology' (Lovelock, 1987, 1995: Devall and Sessions, 1985; and Naess, 1989 and Echlin, 1996 in Gleeson and Low, 2000). The integrity of the planet's ecosystems is to be preserved above all else and this represents a serious challenge to current growth models. Advocates of the radical model put forward some of the more strident and apocalyptic visions associated the sustainability imperative and it is important to note that their proposals tend to be not only anti-growth but sometimes misanthropic as well. Some of Lovelock's (1987, 1995) writing, for

example, seems to take great delight in the possibility of an almost sentient Gaia taking revenge on a recalcitrant human race by manufacturing our extinction. Such accounts take nature's agency further than most.

Evaluating the integrity of the planet's ecosystems and developing ways of preserving or enhancing that integrity have been the focus of a great deal of research and scholarly enterprise. Within the physical sciences, much of this effort has been directed at objectively identifying limits and developing technical means of addressing environmental problems. Within the social scientific literature, the carrying capacity of different areas (Smail, 2002; Wackernagel and Yount, 2003) and a given entity's (from a person to a nation/state or even the world's population) ecological footprint are popular ideas (Walker and Rees, 1997; Rees, 1997a and b) that are now being used by local authorities to calculate their environmental impact. The ecological footprint has been defined as 'the total area of productive land and water required on a continuous basis to produce all the resources consumed, and to assimilate all the waste produced by that population' (Walker and Rees, 1997, p. 97). A plethora of social scientific studies have since been directed at how society or social systems must change in order to address bio-physical environmental concerns based upon, for example, consumption patterns (Callenbach, 1999; Ackerman, 2001a and b), indicators (Farrell and Hart, 1998; Parris, 2003, van Kamp, Leidelmeijer, Marsman and Hollander, 2003), governance and strategies for implementation (Maclaren, 1996; Biswas, 1999; Fernandes, 1999; Fainstein, 2000; Alperovitz, 2003; Jepson, 2003; van Bueren and Heuvelhof, 2005), urban form (English, 1999; Jenks, Burton and Williams, 1996, 1998, 2000) and so on. Coming from the social sciences,

much of this work is concerned with broader views of sustainability that address not only bio-physical environmental aspects, but social issues as well

Social sustainability

Of the three components of what might be called orthodox accounts of sustainability and sustainable development, social aspects undoubtedly suffer the most from a lack of attention, clarity and understanding. The inclusion of social sustainability can be attributed to the Brundtland Report's contention that poverty is a major cause and effect of global environmental problems and, as a corollary, that inter- and intra-generational equity, meeting 'needs', and the distribution of power and resources are essential components of sustainable development. This raises some very interesting questions about the role/goal of social sustainability in areas where poverty is not necessarily linked to bio-physical environmental degradation. While the connection between socio-economic and natural resource depletion might be valid in cases where, for example, the fisherman has a choice between over-fishing an area or starvation, the link is weaker for poor people in urban areas who lack access to any natural resources at all.

Though he does not focus on urban areas as such, Dobson (1998, p. 15), was concerned with such issues when he wrote:

> It is unlikely…that poor people are always forced to overuse environmental resources [because]…poor people do not always and everywhere live in conditions characterised by resource scarcity, so the conclusion reached by the [Brundtland] Commission is not as universally relevant to environmental sustainability as its report suggests.

Portney (2003, p.161) has also addressed this matter, noting 'For many, the idea that social justice must be pursued as a component of sustainability is an assumption, or starting point, that needs no explanation'. Portney, having made this point, justifies his own inclusion of social sustainability by way of arguments pertaining to environmental justice which advances the notion that minorities tend to bear the brunt of bio-physical environmental risks. Portney's conclusion is that, in terms of sustainability, issues around environmental justice can be useful when it makes the siting of unfavourable facilities and activities more equitable, or when it facilitates more favourable environmental outcomes overall (also see Agyeman and Evans, 2004). Portney falls short of suggesting that only when environmental risk and harm is evenly distributed among both the affluent and the poor alike will bio-physical environmental issues receive widespread attention. In short, the rather limited literature addressing this first question of the role/goal of social sustainability in areas where poverty is not necessarily linked to bio-physical environmental degradation might be that it is justified when adverse effects are linked to powerlessness.

The role/goal of social issues when general allusions to sustainability and urban sustainability are put forward over specific references to sustainable *development* is more difficult to address. Dobson's targeted justification aside, how do we justify and incorporate social concerns into the sustainability concept when development is not an ostensible focus as seems to be the case outside the Third World. The term 'sustainability' is becoming increasingly ubiquitous[17] and the assumption that it has some benevolent, if undefined, social component has no doubt facilitated its enthusiastic adoption. The frequency with which it is invoked does not necessarily

[17] Sustainable communities, urban sustainability and sustainable management are among the more common.

correlate positively with clarity surrounding its use, however. I have identified at least three strands within the literature which point to quite contradictory treatments of the notion of social sustainability.[18] Each has slightly different antecedents and emphases and not every one has an explicit link to the bio-physical environment. This highlights the extent to which slippage is occurring within the social sustainability discourse.

Maintenance Sustainability

The first strand identified concerns the notion whereby social and cultural characteristics are *maintained* in the face of global connections and influences, technological innovation and, certainly in New Zealand, issues such as immigration, employment opportunities and contracts, and other forces of change. The discourse of 'maintenance sustainability' highlights the difficulties of reconciling what is to be sustained as opposed to what is to be developed (Kates, Parris, and Leiserowitz, 2005; Board on Sustainable Development of the United States National Academy of Sciences, 1999; Munro, 1995; Redclift, 2000). In terms of urban sustainability more specifically, how cities manage, maintain or ignore socio-economic and cultural change in the age of 'globalisation' has been the focus of work by Borja and Castells (1997; also see Sandercock, 2004). Rather than a city divided along traditional class lines, they note that:

> Our societies, in all latitudes, are and will be multicultural, and the cities (especially the large cities) are the places in which the greatest diversity is concentrated. Learning to live with the situation, succeeding in managing cultural exchange on the basis of ethnic difference and remedying the inequalities arising from discrimination are essential aspects of the new local policy in the conditions arising out of the new global interdependence (Borja and Castells, 1997, p. 89).

[18] A similar schema has been proposed by Chiu (2003).

Maintenance social sustainability is often implicit in much of the sustainable communities literature where established or traditional values, such as neighbourliness, family-mindedness or friendliness, are promoted (see Roseland, 1997, 1998).

Social Development Sustainability

The second strand that I have identified in the literature relates more specifically to poverty and inequitable access to resources in both a global and intergenerational sense (Barkin, 2000; Polese and Stren, 2000; Smail 2002; Goodwin, 2003). Harris and Goodwin (2001, p. xxvii) define social sustainability as 'progress toward enabling all human beings to satisfy their essential needs, and to share fairly in all opportunities for health and education'. Significantly, they also note that 'Thus defined, human development is a final goal: an end to which other important pursuits, such as economic development, are the means'. The literature pertaining to this version of social sustainability is not confined to poorer nations (Polese and Stren, 2000, Freeman and Thompson-Fawcett, 2003, Turner and Turner, 2003) but an important part of this problematic is the poverty/population growth conundrum of poorer nations (Pimental, Bailey, Kim, Mullaney, Calabrese, Walman, Nelson, and Yao, 1999; Smail, 2002). Although the links between ecological degradation and poverty are often made (Boyce, 1995), particularly under the rubric of the so-called 'brown agenda' (Polese and Stren, 2000, p. 15), these are often presented in terms of how a healthy bio-physical environment is just one part of an approach to all-round well-being as a goal in itself (Wise, 2001). This type of social sustainability in urban areas is the focus of UNESCO's Management of Social Transformations Programme,

initiated in 1994, which sees cities as 'arenas of accelerated social transformations' (Polese and Stren, 2000, p. ix). Here they argue that cities are key in move towards increased solidarity, justice and equity.

Bridge Sustainability

The third strand talks about social sustainability in terms of how society must change in order to be more sustainable in a bio-physical environmental sense. Foladori (2005) calls this 'bridge sustainability' because the ultimate aim is bio-physical environmental, rather than social, sustainability. Discussion in this vein tends to centre on consumption patterns, recycling or travel habits, particularly private motor-vehicle use in developed countries and on the over-exploitation of resources in poverty-stricken areas (Pacione, 2001; Finco and Nijkamp, 2001; the WCED, 1987; Ackerman, 2001; O'Meara Sheehan, 2001). The consumption patterns of people in developed countries are fairly well-documented[19], with strong ties to Rees' (1997b) notion of ecological footprints and the adverse effects of profligate lifestyles. These include McGranahan, Songsore and Kjellen's (1996) observation that with increased affluence environmental problems tend to shift geographically from the local to the regional or global and temporally from immediate health problems to intergenerational impacts including global warming. They take issue with the ways in which the affluent 'distribute their environmental burdens over an expanding public' (1996, p. 105). More as a matter for clarification than advocacy, Anand and Sen (2000) warn us not to become confused at this point and attempt to equate social sustainability with notions of hunger or access to clean water because these are not

[19] According to the United Nations Development Programme (1998) statistics, the richest 20 per cent of the world's population consumes 86 per cent of available resources. At the other end of the scale, the poorest 20 per cent of people consume only 1.3 per cent of resources.

‘ecological’ and thus do not meet the definitions laid out by, for example, the World Bank.

Foladori is somewhat critical of this kind of ‘bridge’ sustainability because social sustainability is treated as a means rather than an end in itself. Yet there is another vein which goes deeper than this; it is one that would see overt changes in, for example, recycling behaviour as a manifestation of a more powerful shift in consciousness that relates to the way we understand nature as might be seen in Heidegger’s notion of dwelling and the growing literature devoted to hybridity and the new political ecology. Yet, Foladori makes a valid point in that the fairly superficial aspects of bridge sustainability are more commonly visible, particularly when it is invoked as a necessary response to a technically determined concern. Although clearly social, the fix is frequently presented in terms of simple technical adjustments that reduce the social contribution and social consequences to a bare minimum. Portney (2003, p. 128) relays a good example of this commonplace:

> If a city has an internal air pollution problem, so the argument goes, correcting the problem is a job for professionals…[But] if air pollution is a purely technical problem, then why have we not corrected the problem years ago?

The answer, he suggests, is that we have too sparse an understanding of communitarian conceptions of sustainability, political will and the values and attitudes that underlie them to achieve sustainability, and this ties bridge sustainability quite firmly to concerns about what needs to be changed and/or maintained in our society.

In short we have a number different conceptualisations of social sustainability and each of these have slightly (or vastly) different emphases and priorities. Maintenance and bridge sustainability, for example, are often fundamentally contradictory particularly when long-standing traditions are challenged by new measures put forward to combat adverse environmental or economic effects.[20] China's one child policy, for example, may well be necessary in terms of economic stability and self-sufficiency or bio-physical environmental resource use, but it is antithetical to long-standing beliefs surrounding the role of the family and ancestors.[21] Here in New Zealand and elsewhere, it is common to invoke the compact city as the most sustainable urban form, yet this necessarily entails a profound alteration of the built environment that challenges established senses of place and liveability associated with low-density suburban living (Lewis, 1999; Godschalk, 2004; Vallance, Perkins and Moore, 2005). In a third example, one might ask how quality of life, which often seems to be expressed in patterns of *over*-consumption, can be reconciled with bio-physical environmental limits. The issues of 'sustainable consumption' is one that is rarely addressed (Hobson, 2003), possibly because a serious attempt at this goal would threaten current economic growth orthodoxies. As Webster (1998) pointed out, we have to be attentive to the ways in which policies directed towards sustainability are *themselves* sustainable in terms of reflecting the preferences of residents. These three examples of conflict between the different forms of social sustainability highlights an earlier point that what is to be sustained, for whom and for how long very much depends on which construal one has adopted. The operationalisation of the term is responsive to these vagaries of interpretation and this raises questions about

[20] Lai (1998) has made a similar point, though he does not use the terms 'bridge' and 'maintenance' sustainability.
[21] Paehlke (1995) presents an interesting discussion on the need to balance bio-physical environmental concerns with democratic practice, as does Albrecht (2001).

how, or indeed *if*, the various components of this slippery concept might be reconciled.

Reconciling Sustainability

Problems with definitions and the practice of sustainability have led to a burgeoning literature concerned with exposing the concept as inherently flawed. Since the Brundtland Report the concepts of sustainability and sustainable development have been criticised for containing a number of seemingly irreconcilable positions surrounding growth, development, the purpose of growth, means and ends. These divisions are often seen as occurring along economic growth versus economic development, strong versus weak sustainability, radical versus incremental change, ecological modernisation versus risk or along disciplinary lines as economic, bio-physical environmental and social aspects are debated. Unreflective use of terms like sustainability and sustainable development often camouflage these points of contention. As Bruff and Wood (2000, p. 593) noted, while such terms have the potential to smooth over conflicts between environment and development and different political actors, unthinking promulgation means we risk 'replacing intellectual thought with moral conviction based around a slogan'. It is therefore necessary for me to explore some of these points in more detail.

Economic growth versus economic development

Although it has become common to question the quality of economic growth, it is more rare for decision-makers to challenge the goal of growth itself. The quest for economic growth in terms of sustainable development is usually justified by the

notion that that benefits can, and do, 'trickle down' to the poor (Basiago, 1999). It is also believed that only through economic growth can we develop the technology necessary to repair the damage already inflicted on the bio-physical environment which forms the economists' 'natural capital' and the basis of the Environmental Kuznet's Curve.[22] An alternative, more contentious view, is that many so-called primitive societies (including the aborigines of Australia) managed to sustain themselves with very small ecological footprints for many millennia, and that current policies around economic growth and development can actually have a profoundly destabilising effect. Sensitivity to these issues has led to some making the distinction between economic growth and economic development (Skinner, 1997; Basiago, 1999, Constanza and Daly, 2001). Basiago (1999, p.151) describes this 'new doctrine' of economic development as one that attends to qualitative rather than quantitative growth. This does, however, present a new array of problems.

The first major hurdle to be crossed involves acknowledging, measuring and accommodating the 'costs' or 'externalities' of both qualitative and quantitative growth. As Finco and Nijkamp (2001) noted 'The unpriced nature of many environmental goods makes it difficult to incorporate the environment into the normal calculation schemes of rational market behaviour' but this is now a basic tenet of the new formal field of environmental economics which demands that bio-physical environmental and, sometimes, social externalities be identified, calculated and accounted for. Ecological economics therefore specifically focuses on interactions between the environment and the economy whilst recognising that various aspects of

[22] According to the Kuznets Curve hypothesis, there is an inverted relationship between environmental degradation and income levels. This has been taken to mean that economic growth is the best means of reducing the environmental impacts associated with the early stages of economic development (Stern, 2001).

each are, in fact, incommensurable and cannot be easily traded. It is based on 'post-normal science' which 'recognises facts are uncertain, values in dispute' (Munda, 2001, p. 18). Caccia (1990, p. 127) admits that the market is far from being 'free' but is instead constrained by a number of factors including the internalisation of externalised costs. Requiring producers to include externalities might make them less competitive than those who are not subject to a 'comparable regulatory regime'. Changes in consumer behaviour; an absence of incentives and/or financial aid for the introduction of more appropriate technology and equipment and price distortions of water, energy, raw materials also lead to fear among producers. A new order of political will with new regulations, penalties and incentives will be required so as to 'bend the market place towards long-term sustainability'.

Ecological modernisation versus risk

Blowers (1997), Desfor and Keil (2004) and Welch (2003) have identified two broad schools of thought within the sustainability literature. The first is ecological modernisation (see Huber, 1982, 2000; Hampson, 1990; Hajer, 1995a and b, 1996, 1999; Springett, 2003) whereby bio-physical environmental and social sustainability can be achieved within the current economic growth and development model. Huber (1982), Hajer (1996, 1999) and Desfor and Keil (2004) describe ecological modernisation as involving the transformation of industrial production so as to maintain the productive base of the natural environment though not necessarily the actual levels of natural capital. This position is largely similar to that represented by the weak sustainability model outlined above. Technological innovation and dematerialisation are the cornerstones of our ability to overcome bio-physical environmental and social challenges. This position relies on a limitless cornucopia –

not of nature – but of the human mind and its capacity to innovate and create novel solutions to emergent problems and scarcities.

This cornucopian view can be contrasted with the risk society model where the conciliatory methods of ecological modernists intent on maintaining a focus on economic growth is seen as not only damaging to the bio-physical environment, but as fundamentally incompatible. The results of pursuing growth in this way include general, mass-produced and self-induced risks such as global warming, chemical pollution and nuclear waste disposal problems, ozone depletion, BSE/CJD and so on (Angell, Comer, Wilkinson, 1990). That these perils are self-produced is captured, rather potently, by the emergent notion of 'eco-cide' (Diamond, 2004) because, as Beck noted, some combination of these risks could mean the 'self-destruction of all life on this earth' (1995, p. 67). In contrast to ecological modernists, risk theorists see science and technology as sources of potentially devastating harm rather than a solution.[23]

Many of these risks are not easily evaluated by the lay-person (nor the experts in some cases, as has been the case with global warming, for example) and this, Beck believes, creates a condition of increased uncertainty (also see Genov, 1998). Global ecological risk combined with economic threats, such as unemployment and the withdrawal of the welfare state, and social problems surrounding crime and divorce

[23] Interestingly enough, these two schools of thought – typified by the ecological modernists and the risk society theorists – have coalesced around two political parties here in New Zealand. The New Zealand Green Party of Aotearoa New Zealand was formed from a merger of the Values Party and the new Green groups in 1990 and sits very firmly left of centre. The National Party has recently released its environment strategy (2005) which Member of Parliament Nick Smith (National's environment spokesperson) says is 'rich and clean' (Barnett, 2006, p. 21). This approach is 'based on the principals [sic] of economic growth, resource use [which] must be sustainable, [and] good science' (media release www.national.org.nz/Article.aspx?ArticleId=8298, 12/10/06).

conspire to instil fear and insecurity (Blowers, 1997). This insecurity is not necessarily widespread, however. It has been pointed out that while such threats *might* contribute to a general sense of insecurity and individualisation, 'abstract risk manifests itself in real harm to real persons in particular places…[R]isks are not evenly distributed' (Field, 1998, in Desfor and Keil, p. 64). Thus a large-scale risk, such as that from toxic waste, is more likely to affect some than others. A local example is provided by Pearce, Kingham and Zawar-Reza (2006) who found that levels of air pollution were higher in areas where disadvantaged communities lived and that, for the most part, it was not these communities that actually generated most of this pollution. The waste trade exemplifies this kind of risk at a global scale: as just one example, in the 1980s Guinea-Bissau was offered the equivalent of its existing GNP to dispose of hazardous waste from Europe (Smith and Blowers, 1992, in Gleeson and Low, 2000, p. 20). Some see these kinds of transactions as win-win situations where the financial compensation received exceeds any immediate or long-term danger. Foster (in Newton, 1999), for example, reports Lawrence Summers' (then chief economist of the World Bank) comment 'I think the economic logic behind dumping a load of toxic waste in the lowest wages countries is impeccable and we should face up to the fact that...underpopulated countries in Africa are vastly under-polluted...Shouldn't the World Bank be encouraging more migration of dirt industries to the LDCs?' Others, however, argue that such transactions are indicative of a new wave of large scale inequality. Most notably, Beck (1995) has identified a new phase of 'risk society politics' concerned with uneven economic development and the distribution of harmful externalities. The environmental justice movement is explicitly concerned with politicising such injustice and inequality through a thorough

reassessment of both the means and ends of growth and our relationship with the bio-physical environment as sources of societal risk and security.

Other critiques

The problems associated with reconciling or balancing economic growth with development and the contradictions inherent in the ecological modernisation versus risk society models expose some of the complexities underlying a seemingly straightforward term. In addition to the criticism directed towards the incompatibility of growth, development and bio-physical environmental sustainability discussed earlier, there have been a number of other unfavourable assessments of the concept directed towards definitional issues, operationalisation, and other conceptual contradictions.

Dovers and Handmer (1992) provide a good overview of many of the problems and contradictions with the concept of sustainable development. Their list of problems correlates with many of the issues already addressed in this thesis, such as *technology* being both a 'cure' for environmental problems and a source of risk and higher levels of consumption; a need to be *humble* enough to accept our knowledge is limited but *arrogant* enough to make decisions; the necessity of balancing intergenerational versus intra-generational *equity*; the possibility of *reconciling 'growth' and 'limits'*; the need to *balance individual freedom and collective interests*; the possibility of a balance to be found between the *empowerment of the local population* and the need for a *body* to set more general objectives; the question of defending the idea of *spare capacity* for future generations when many people's needs are not being met at present; and ways of accommodating both *stability and change*.

This last point highlights another set of problems with the concept of sustainability which, when seen as a goal as opposed to an ethic, raises questions about incremental versus radical change (see, for example, Yanarella and Bartilow, 2000). Low (2000) is also concerned with how the transition to a more sustainable world might take place and has advocated for a 'Polanyian approach' which has, at its foundation, the concept of 'ecosocialisation'. In this tradition, both the market and social organisations are invoked as composites of this approach, and these must nowadays incorporate environmental conservation forming a 'triple movement'. This could perhaps be described as a form of normative incrementalism.

Some see the vagaries of the Brundtland Report's definition as an impediment to any useful construal of the concept which might assist this normative function. Luke (1995), for example, pointed out that the report does not address questions about what, exactly, should be sustained, for whom and for how long. Others are more concerned with the implications such ambiguous definitions of sustainability have for planning and practice. Overton and Scheyvens (1999, p.1), for example, are critical of the unreflective use of sustainable development, and conclude that the idea has 'little to inform practice beyond principles and platitudes'. Such claims are perhaps understandable in the face of work undertaken by, for example Devuyst and Hens (2000) and Berke and Conroy (2000) whose evaluation of plans for sustainable development revealed variation in their adoption and implementation. Dovers and Norton (1994) and Welch (2003) have argued that the sustainability agenda challenges powerful interests, is very complex and should be seen more as a moral principle rather than a set of instructions with which practitioners can work. That the

concept is exceedingly difficult to operationalise has led to accusations that that the concept is 'intuitively attractive but slippery concept' (Francis, 1995 in Mitchell, 2002, p. 197), 'complex, multilayered and …contested' (Freeman and Thompson-Fawcett, 2003, p. 221 but also see Dixon and Fallon, 1989; MacDonald, 1999; Glasby, 2002; Knight, 2003; Vallance, Perkins and Bowring, 2005; Vallance, 2006). Prieus (2005, p. 5) in his study of 'sustainable housing' concludes that the concept resembles that of the emperor's new clothes and that we should rather 'acknowledge we do not know essential things about [it] than simply to 'believe' in it'. This confusion and the difficulties it presents is evident in studies of urban practitioners' attempts to understand and implement the concept of sustainability (see, for example, Freeman's (2004) study of Dunedin, New Zealand and Dodson and Mees' (2003) account of urban transport planning in Wellington, New Zealand).

Perhaps as a result of this uncertainty on the part of planners who are positioned to take a more holistic view, much of the actual practice of a vastly curtailed version of sustainability has been undertaken by those in the physical sciences, notably biology and ecology. Various authors (Norgaard, 1994; Torgerson, 1995; Luke, 1995; Godlovitch, 1998; Upham, 2000; Livingstone, 2005) have expressed concern about the ways in which scientists are being asked to define and operationalise concepts like sustainability when the process is 'fraught with danger because values, opinions and social influences are an inextricable part of science' (Lele and Norgaard, 1996, p. 354).[24] Though this makes terms like sustainable development and urban sustainablity inescapably political (O'Riordan, 1988, 2004; Richardson, 1997; Perkins and Thorns, 2000), this is not the prevalent view of scientific enterprise. More often science

[24] From a different perspective Stigl (2003, p. 255) agrees that science is not value free, but argues that scientists *should consciously* engage in a 'proactive, heavily ethics- and wisdom-based "science for sustainability"'.

continues to be portrayed as disinterested, neutral and value free and this has some subtle but very long-reaching consequences, as discussed in earlier chapters.

Chapter Four: Exploring the Urban

The subject of this thesis is the sustainability imperative and urban New Zealand, yet, to date, I am guilty of neglecting this vital urban prefix. I am not alone in this oversight; it is very common for the city to disappear from short definitions and more lengthy accounts of urban sustainability. The following definition of a sustainable city is fairly typical:

> Sustainable cities are cities where socio-economic interests are brought together in harmony (co-evolution) with environmental and energy concerns in order to ensure continuity in change (Nijkamp and Perrels, 1994, p.4).

The charge of neglect is perhaps a little unfair as it is already difficult enough to accommodate the standard tripartite of economic, social and bio-physical environmental concerns in some acceptable and meaningful way[25]. Yet urban sustainability is a term that has seized the imagination of a range of planners, politicians and certain sectors of the public and the concepts of the city and the urban prefix deserves more attention. To this end, in this chapter I explore some of the more common definitions of 'the urban' and address some of the theories surrounding urban change. These definitions and explanations are then illustrated in a brief history of urban development that begins with the religious city and ends with urban sustainability.

Defining the Urban

It is common to hear references to sustainable cities that lack any in-depth analysis of the urban component, yet one's theorisation of the city has important consequences

[25] See, for example, Elkin and McLaren, 1991; Aasen, 1992; Haughton and Hunter, 1994; Mitlin and Satterthwaite, 1996; Hughes, 1999; Adger, Brown, Fairbrass, Jordan, Paavola, Rosendo and Seyfang, 2003.

for how sustainability is understood and implemented. A city conceptualised as a complex ecosystem, for example, will receive vastly different treatment to the city understood as the pinnacle of human civilisation and achievement. The widespread neglect of this variance is interesting given the plethora of attributes particular to cities that provide useful additions to the urban sustainability debate. To take just one example, the contemporary planning obsession with compaction in the name of bio-physical environmental sustainability has had wide-ranging, and sometimes traumatic effects on populations who value low-density suburban living. Compaction can increase dependency and demands on public services and infrastructure and result in the proverbial concrete jungle that is not amenable to either wildlife or human residents. Conversely, economies of scale associated with density can stimulate social activity, lead to new forms of leisure and employment opportunities, contain urban sprawl and make optimal use of infrastructure. My point here is not to exhaust the arguments for and against compaction so much as tie together very firmly issues surrounding bio-physical environmental sustainability and urban attributes such as propinquity, community, dependency, economies of scale and so on.

Underpinning these issues is the *very way in which we conceptualise cities.* Although there is a degree of overlap, and the distinction oversimplifies a complex topic, we can divide the definitions of cities into either spatial or evolutionary accounts. For my research this categorisation is not just about academic tidiness, but is vitally important in terms of its implications for how the city is both managed and experienced. As Acselrad (2004, p.1) has pointed out ‘Cities may be seen to be sustained as a material structure, as the space of quality of life or as a political space where urban policies are legitimised’. The salience of this distinction between spatial and evolutionary

accounts of the city is therefore thoroughly entwined with the concept of urban sustainability and it is worthwhile exploring these ideas in more detail.

Spatial definitions of cities

Spatial accounts tend to treat the city as an object to be measured, compared, manipulated, or administered from above. In general terms, the spatial city is quantifiable and bound, subject to rational evaluation and control. One of the more common spatial articulations of cities involves contrasting the urban with the rural as outlined by Louis Wirth, for example, in his *Urbanism as a Way of Life* (1938). This type of binary is often accompanied by figures and facts around population, acreage, available resources, and so on. The city, and its various components and characteristics are seen and treated as a discrete entity that can then be further categorised and acted upon. In this tradition, Pacione (2001), for example, presents four principles which can be used to identify urban places. The first is population size, which is initially tempting for its simplicity, but quickly becomes complicated by the actual number used to define 'urban' that varies from country to country. The second is the economic base which can be used in conjunction with population size. He presents the example of India where 'urban' settlements are those with over 75 per cent of the adult male population in non-agricultural work. The third involves administrative or legal criteria. Most cities in the world are defined this way and usually fall under the jurisdiction of the local authority. A problem with this principle is that often the physical extent of the urban area exceeds the administrative boundary. It is, for example, difficult to imagine a city that is not dependent to a significant extent on its hinterland for waste disposal, food, energy and other resources, thus

boundaries drawn around the city seem somewhat arbitrary.[26] To account for this, the fourth principle relates to the 'functional' urban region. In a further example of this kind of categorisation dependent on a spatial account of cities, Savage and Warde (1996) outline five urban types: world cities, global cities, new industrial districts, declining industrial cities and socialist cities. They contend that such a schema is responsive to the specificity of cities and the distinct roles they perform in the wider world economy, though one might argue that the role of smaller urban areas, such as Christchurch, are overlooked in their account.

Whilst these principles are somewhat useful in distinguishing urban from non-urban areas, such *singular* definitions do little to capture the essence of urban living. As a response, Pacione (2003, p. 20) noted that the city should also be understood in terms of its qualities and advocated an understanding of both 'the city on the ground and the city in the mind'. Such observations are consistent with spatial accounts of cities that attend to the experiential aspects of urban life that depend on, for example, propinquity and intensification. Lewis Mumford, for example, described the city as a 'geographic plexus' – 'an economic organisation, an institutional process, a theatre of social action, and an aesthetic symbol of collective unity' ([1937], 1996, p.185). For Mumford, urban areas had distinct characteristics based on social exchanges intensified in the city as nowhere else. As cities became larger and spread over greater geographical areas, the more 'anonymous' social interactions became. The consequences of this dispersed urban form and resultant anonymity was the 'inevitable dissipation of its humanity and creativity' because 'urban associations [or] social relations [are] made through proximity and distance, closeness and remoteness'

[26] This is particularly relevant to Christchurch which, it has been noted, catches a cold every time a Cantabrian farmer sneezes.

(Pile, 1999, pp.16-17, 18). Thus Mumford was a proponent of the city as an intensification of humanity and the contribution he thought this made to the ever-changing human personality. The suburbs, in contrast, he described as 'a collective attempt to lead a private life' (in Knox, 1995, p. 208).[27]

Another established feature of this debate pertains to the ways in which urban society often functions in terms of personal interaction. Tonnies (1887) made an important contribution to this discussion based on his distinction between *gemeinschaft* and *gesellschaft* types of social interaction and organisation. The former generally involves face-to-face interaction and is associated with 'community relationships…bounded by local territory [and] based on close contact and emotional ties' (Valentine, 2001, p.115). This type of social organisation was typical of the small villages prevalent before the Industrial Revolution and, it may be argued, still characterises many of New Zealand's regional towns today. With industrialisation came massive urban migration and a new form of social interaction and organisation - *gesellschaft* - based on individualism and more impersonal, contractual ties. An example of this type of relationship in the context of urban design and governance is the 'body corporate', the formal agreement used in many apartment complexes which regulate the painting and maintenance of outdoor areas, placement of television aerials and the like. These 'community of interest developments' or 'privatopias'

[27] Weber (1963) made a significant contribution to a tangential debate which centres on the idea of community without propinquity and vice versa. Our contemporary concept of urban relations is no longer necessarily predicated on geographically bound space, as would have been the case in pre-industrial society. Some obvious examples of this include the geographically dispersed, but often emotionally close, chat groups and bloggers that have become a popular feature of the internet, or the associations based on professional identities rather than one's neighbourhood, town or even one's country (also see Savage and Warde, 1993; Valentine, 2001).

(Hayden, 2004[28]) often rely on legally binding covenants or conditions, and are characteristic of many of Christchurch's newer gated and semi-gated subdivisions (see Dixon, Dupuis and Lysnar (2004) and Dupuis and Thorns (2004) for a discussion of gated communities in New Zealand). In an intriguing paradox, recent planning movements, such as Traditional Neighbourhood Design (TND) and New Urbanism, explicitly focus on recapturing gemeinschaft through both the manipulation of the built form and legal covenants and contracts, though the role of the latter in these creations has, with few exceptions (Winstanly, Thorns and Perkins, 2003), been neglected by researchers.

Evolutionary accounts of cities

The Modern City

Although the gemeinschaft/gesellschaft distinction is based to a certain extent on spatial relations, significantly, it is also evolutionary in that gesellschaft communities are seen to be an expression of the *modern* condition. This position has also been adopted or discussed by the likes of Georg Simmel, Savage and Warde, (1993, 1996) and Allen (2000). As outlined by the Chicago School in what I call 'classic urban ecology', for example, industrial capitalism has produced cities that exemplify the new economic and social orders which emphasise the division of labour. In this view, cities can be regarded as centres of commerce, production and specialised economic activities (Savage and Warde, 1996) and this has had an impact on the ways in which social relations in the modern city are portrayed. Harvey (2003, p. 939), for example, claims that 'calmness and civility in urban history are the exception not the rule' and

[28] In *A Field Guide to Sprawl* Hayden provides an interesting array of labels for the phenomena associated with urban expansion, including 'zoomburbs' which grow even faster than 'boomburbs', 'clustered worlds' and 'category killers'.

modern urbanism is often depicted as characterised by anomie and misanthropy. Thrift questions this view of the city, however. Though we might characterise modern urbanism as living in a 'continual state of radical insecurity and dread' Thrift argues that this is because we often confuse sociality with liking (2005, p. 135). Rather, a component of sociality is being civil even when we do not like the others with whom we must interact. Such behaviour forms part of the 'hum' of maintenance and repair functions of cities that are actually 'so familiar we tend to overlook them' (Thrift, 2005, p. 136).

Marxist urban theory presents cities as 'capitalist mechanisms operating to create the geography of economic life'. In this model, capitalist accumulation, competition, exploitation and restructuring are of primary concern rather than industrialisation. Savage and Warde (1996) note that Marxist models, like the one outlined here, can be dismissive of the history of the area and that there is little room for human agency in urban development. Likewise, Molotch (1976) and Logan and Molotch (1996) actually highlight the role of human agency in urban change, arguing that pro-growth coalitions explicitly manipulate the built form of the city to increase their profitability and maximise their interests. Harvey's (1986) theory of urban change addresses links between the movement of capital and urban form. He noted that while land is a commodity in that it can be bought and sold, it has additional characteristics that make it different, such as the fact that it is permanent and fixed in place, that it is necessary to human life, and it can act as a storing place for other assets. His model highlights the links between urban and economic restructuring using the concepts of primary circuits (when things are produced), secondary circuits (when capital moves to invest in the built environment) and tertiary circuits (scientific knowledge). Harvey

explains the growth of North American suburbs in terms of the movement of investments from the primary to secondary circuits. Tertiary circuits based on scientific knowledge and technology are then employed as buildings become outdated and less efficient. Savage and Warde (1996) commend this model because a number of urban processes can be explained and it can also accommodate social and political individuals and groups who can act upon and alter the urban environment. It also allows for historical specificity.

The Postmodern City

The modern rational-economic model of cities has, like many other pursuits, been postmodernised if only by the debate surrounding what that might actually mean. Noble's (2000) overview of this literature points toward considerable disagreement as to whether we live in a new and postmodern (or post-modern) society, or if modernity has not simply been extended or become more 'reflexive' (Giddens, 1984). It is possible that recent social change is simply a new phase in the continual cultural development of capitalism, yet a number of commentators note a number of significant transformations. Baudrillard (1981 [2003], 1998), for example, made a case that everyday life experience is fundamentally different to that of the past because of the domination of the image and the sign associated with processes of commodification. Practices of consumption have also changed in the postmodern city, helping us to construct our identities and that of others. Advertising plays a central role in this process. Strinati (1995, in Miles 2001) pointed out that modern advertising informed consumers of the product's qualities or functions in persuasive ways, but

postmodern advertising emphasises stylistic aspects and has become something of a parody of itself.

This tendency is now evident in the promotion of, for example, many of the newer residential subdivisions, and this advertising is central to the construction of the identity of the development itself and that of its incoming residents. Yet there is a physical form attached to this advertising and, in turn, this naturalises (Zukin, 1999), and acts upon, residents' spatial practice which then informs new representations of space and representational space (Lefebvre, 1991). The resultant socio-spatial dialectic (Soja, 1999, 2000; Knox and Pinch, 2000) challenged 'crudely dichotomous understandings of the connection between society and space' and resisted the 'spatial fetishism' that posited relations between groups and classes as relations between places, epitomised in terms like 'inner city areas' (Collinge, 2005, p. 191). In contrast, this position has been criticised as either overly-reliant on the social, or, more recently, as dependent on a non-existent duality. As Derrida stated, the space/society binary is a 'crisis of versus' (1981, in Collinge, 2005, p. 192). The deconstructivist position is relational, positing that the comprehension of each concept depends on an understanding of the other. Similar arguments have been adopted for the nature/culture, body/mind and space/time dualisms.

Escaping simplistic binaries was one of Lefebvre's achievements and many scholars, particularly neo-Marxists, are intrigued by his version of urbanity outlined in the *Production of Space* (1991) discussed earlier. Lefebvre's political economy depicts the city as actively produced by urban practitioners seeking to 'siphon off loose money set on speculation in real estate and financial assets' into secondary circuits

which are ‘liquid loot yearning to become concrete in space’ (Merrifield, 2005, p. 694). Space is not simply objectively fixed, but is replete with, imbued in and of competing representations. Lefebvre’s work has been extremely influential with a number of scholars adopting his ideas for various ends (Desfor and Keil, 2004; Vallance, Perkins and Moore, 2005).

Soja, a proponent of Lefebvrian thought, has used his framework to explain what he calls the Postmetropolis (1996, 2000). Following Lefebve, he argued that all social relations, from the family to the state, ‘remain abstract and ungrounded until they are specifically spatialised, made into material and symbolic power relations’ (2000, p.9). The urban accentuates the ‘movements and change, tensions and conflict, politics and ideology, passions and desires’ that make this process more than a simple matter of fixing social relations to physical space. He thus distinguishes between ‘Firstspace’ which can be perceived in physical and measurable ways; ‘Secondspace’, which relates to conceptual spaces of imagery and symbolism; and ‘Thirdspace’, which forms the core of his links to urbanism. It is in Thirdspace that the dynamic elements of the city reign, a dynamism he links explicitly to ‘synoecism’ or ‘synekism’ which Soja takes to mean a condition 'arising from dwelling together in one house' (2000, p. 12). The ancient Greeks used this term to identify the condition that arose from the union of smaller settlements under the domain of a single city-state, thereby making the term intrinsically urban in nature. It is a characteristic of urbanity that Soja presents as a challenge to the more orthodox view of a city as ‘an outcome or product of explicitly social action and intention’. Instead, he argues, dynamic cityspace should be recognised as a ‘source of explanation in itself’ and Soja favours an alternative reading of urban history whereby the characteristic of ‘cityness’ is emphasised in both

the manifestation and survival of cities. Soja is under no illusion that the economies of cities are an important part of their ability to endure and flourish. His thesis – that 'cityness' was a *condition* of urban areas rather than a simple *result* rests on this concept of synoecism which, he argues, connotes 'the economic and ecological interdependencies and the creative – as well as occasionally destructive – synergisms that arise from the purposeful clustering and collective habitation of people in space, in a 'home' habitat' (2000, p. 12). Soja's contention that cityspace is lived space, simultaneously 'real and imagined, actual and virtual' has some clear similarities with recent literature examining neo-organicist cities, hybridity and cyborgs (Gandy, 2005; Marvin and Medd, 2006). In this light, it is worth reiterating Gandy's point that we need to pay attention to these virtual and/or imagined spaces as they do not simply reflect social realities but help to generate them.

A Compact History of Urban Development

As both Nietzsche and Foucault have made us aware, historical analyses are not so much objective as biased, often heavily in favour of the victor. Chronological approaches based on archaeological records are not necessarily the best way of exploring the past either. A good example of this is Ferdinadez-Armesto's (2001) *Civilizations* where chronology is abandoned altogether in favour of a schema based on the various peoples' relationships with their environments. Yet, these caveats aside, it is important to trace some of the ideas pertinent to urban development and change as they have been outlined to us throughout the ages. The point I would like to make in the following pages is that urban form and urban life have responded to various compulsions over the millennia, with 'sustainability' being just one in a long series of rationalities.

Early cities

> The [city] state came about as a means of securing life itself. It continues in being to secure the *good* life (Aristotle, *The Politics*, trans 1962, p. 59).

There are essentially five explanations regarding the origins of cities. Carter (1983, pp.1-7) discusses four of the more orthodox accounts. The first involves the idea of an agricultural surplus which, it is argued, allowed for the specialisation of labour - one of the requisites of the city - to develop. From this follows both social stratification and 'the detachment of specialist from tribe and kin' which makes residence the urban qualification as opposed to kinship affiliation. The second explanation, the economic theory, presents the city as a product of meeting points on long distance trade routes and/or regional exchange. Those in favour of this theory point out that the Egyptian hieroglyph for a town was a cross within a circle which symbolised the two functions of routes to the market and defensive walls. The third explanation, the 'religious' theory, posits the city as evolving due to the respect for authority and attachment to a certain location. This form of social organisation could only be possible in the presence of some organising principle and power structures commonly part of religious doctrine. Religion was able to provide social solidarity that was not necessarily based on kinship ties but resided in the hands of priests who administered a particular territory. Adding weight to this explanation is the prevalence of religious artefacts generally found during the excavation of old city sites. Finally, 'militaristic' theory posits the city as developing out of simple, fortified strongholds which later grew into cities due to a combination of the other accounts outlined here.

Carter's view (1983, p. 35), which is similar to Pacione's (2001), is that although cities may originally have been 'passive' Roman Castra, fortified residences or

ecclesiastical structures, they would have remained isolated fortresses without 'active' processes of trade and commerce. Pacione (2001) might add that the emergence of cities could equate to an urban transformation which involved a plethora of factors over long periods of time. The fifth, and less orthodox view, explicitly focuses on this active content. The chief proponent is Soja who, as discussed earlier, argued that the manifestation and survival of urban areas was stimulated by, rather than the result of, the characteristics of 'cityness' and synekism. Without the synergisms of purposeful clustering agricultural surplus, military competitiveness or religiosity would not have been possible.

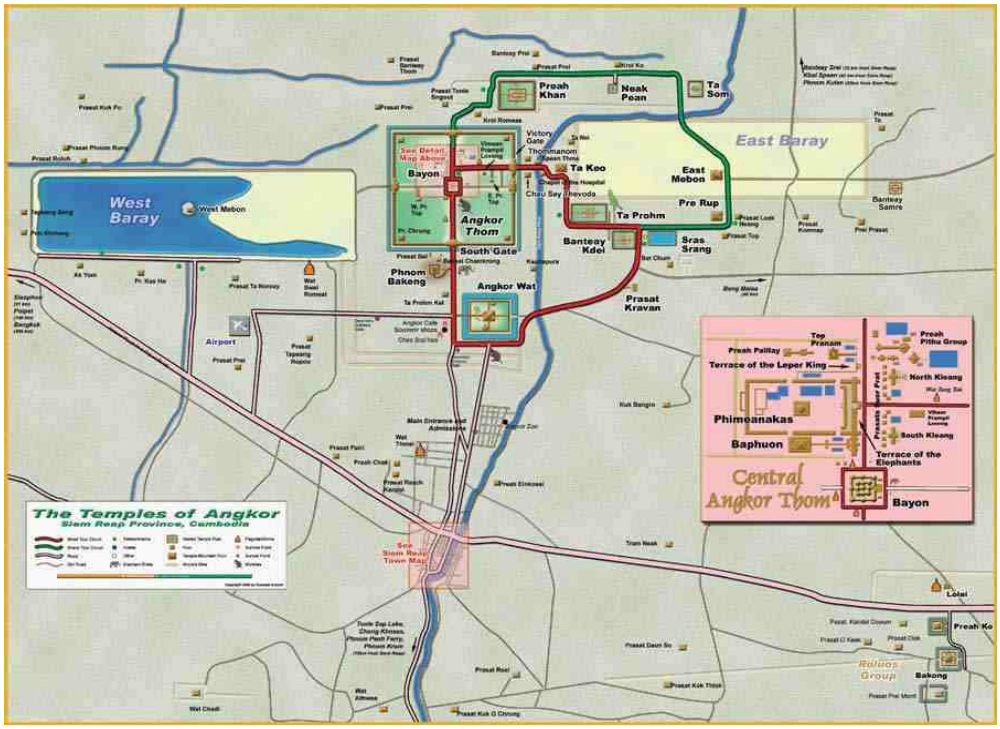
Whilst the role of synekism is moot, less contentious are claims about the size of some of the early cities. By 3000 BC, the population of Memphis is estimated to have been 40 000 and evidence has been found to suggest reasonably complex banking systems and establishment of organised usury which has had such a profound effect on our current methods of calculating economic growth. By 2000 BC cities of over 100 000 had appeared, such as Lagash (the Babylonian capital), Babylon itself and Nineveh. Rome had a population of approximately 500 000 by 1 AD and Chaugan (China) was the first to reach 1 million soon after. Baghdad replaced Chaugan as the largest city in about 1000 AD. These cities were active both economically and culturally.

The Religious City

The factors that have influenced both the choice of the site of cities and its layout have changed over time in accordance with the beliefs and perceived needs of the day. Some of the earliest cities, for example, are believed to have been laid out in

such a way as to incur favour from the celestial rulers. As one example of this, Coedes (1963 in Carter, 1983) described Angkor in Cambodia thus: 'The smaller world, the city of Angkor, and through its means the whole Khmer empire were put under the 'Lord of the Universe' and so the city was organised to align with the cosmic structures which dominated and informed their world. Urban form therefore responded to the dictates of a religious rationality.

Figure 3: The City of Angkor



Consecrated to the Hindu God Vishnu, Angkor Thom, the 3km^2 walled and moated royal city, was built in the 12th century. The main temple, Bayon, lies at the centre of the city, and aligns with the vertical axis of the central spire that is the link between heaven and Earth. The city has four entrances that correspond to the cardinal points, and a fifth called the Victory Gate (www.canbypublications.com/maps/templemap). The architecture surrounding the temple mirrors Hindu cosmology as described in the Rigveda. By the time construction was finished the Khmer civilization believed that the king would, upon death, become a god and reside as Vishnu at Angkor Wat (www.planetquest.org/learn/angkor.html).

The Regulated City

While the locations of the early Roman cities, including Rome itself, were chosen according to ritual procedures derived from myth and religion, later cities were built according to definite plans that celebrated order and convenience and which often resembled a military encampment for security. Two main streets - one running east-west and the other running north-south – were surrounded by a grid of smaller streets, the layout of which can be attributed to the ancient Greek planner Hippodamus. Marcus Vitruvius, the famous Roman architect, modified this form of urban planning in favour of a radial pattern which facilitated the movement of goods and people to and from the city centre. It also allowed for shelter from prevailing winds and facilitated more salubrious conditions for the townsfolk in the form of baths and infrastructure for the removal of waste. Though it was acknowledged that invaders could navigate the grid layout relatively easily, in the glory days of the Roman Empire, military defence of the city was less important than keeping the citizenry content. Urban form was therefore responsive to a rationality concerned with satisfying 'civilised' ideals.

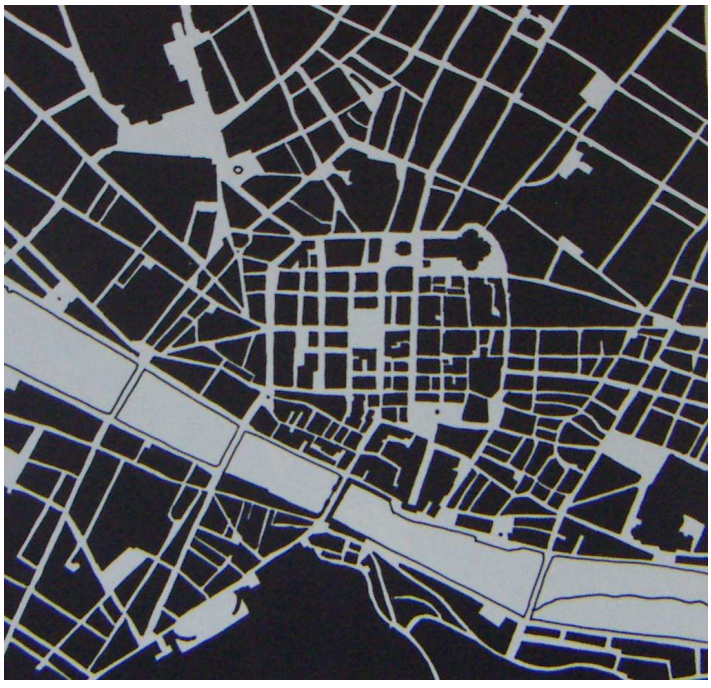
Figure 4: The Rise of the Grid - Vitruvian Radial Plan

(greekworks.com/content/index.php/weblog/extended/reevaluating_the_grid)

The Medieval City

Defence and security arrangements changed dramatically with the advent of gunpowder and the canon. The latter made the grid a much less defensible urban form as it was vulnerable to such long-range, straight-shooting weaponry. As a result, household or compound defensive strategies became more common and cities like Florence, Italy are good examples of how this altered the city's form from a grid-like pattern to a city of dead-ends, blind alleys and enclaves. Many medieval towns are thus a labyrinth of twisting, small streets that confuse the invader (and, more recently, the tourist) and compromise the efficacy of long-range weapons but which are still legible and easily navigated by locals who have grown up there. Neither convenience, sanitation nor access to the centre were of primary importance.

Figure 5: Florence - The Labyrinthine Medieval City

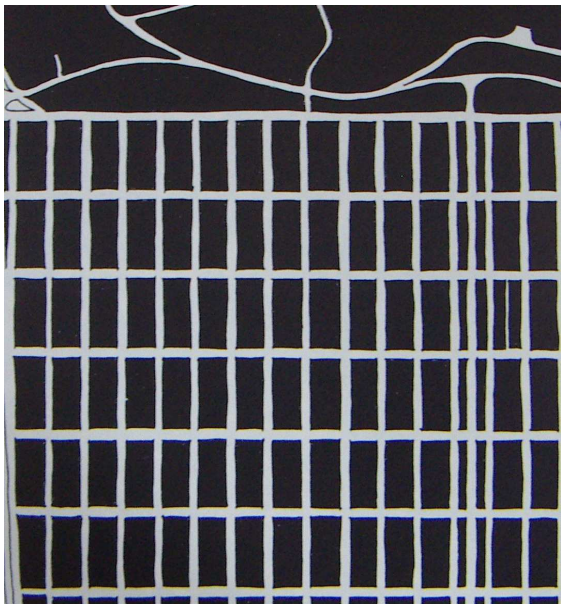


(Jacobs, 1993, p. 220)

The Mercantile Capitalist City and the Return of the Grid

The grid experienced a comeback during the Renaissance and Baroque periods, though the main streets tended to be wider and grander and often celebratory in character. The emergence of private rooms in houses was balanced against the pomp and splendour of public spaces. The grid was also to prove a very popular export to the New World and many colonial cities are based on this pattern, not least because it facilitates easy land speculation and development. As Carter (1983) pointed out, the rationality behind the popularity of the grid was that it provided the 'cheapest and most rapid way of exploiting urban land' and in the United States the 1785 Land Ordinance system, which applied to all public land, ensured that it was subdivided into a series of towns which were to measure exactly 6 miles by 6.

Figure 6: San Francisco - The Return of the Grid?



(Jacobs, 1993, p. 242)

Many New Zealand cities and towns, including Christchurch, exemplify this approach to urban planning despite geographic realities, such as rivers and mountains, that

challenge the wisdom of adhering to such methods. Although the grid suffered a loss of popularity in the 1940s, particularly in the United States, it has experienced a semi-renaissance owing to proponents of New Urbanism and Traditional Neighbourhood Design who laud its legibility, walkablity and traffic dispersal properties (Calthorpe and Fulton, 2001; Grammenos and Pollard, 2005). The physical layout of the city is also explicitly tied to social concerns, such as creating a sense of community, and these aspirations have countered rigid adherence to the grid in many cases. The most famous example of this type of planning is Seaside, Florida which was one of the locations used during filming of *The Truman Show* where the star, Jim Carrey, plays a man who discovers his life is actually a television show.

Industrial cities

> The great cities of the earth…have become…loathsome centres of fornication and covetousness – the smoke of their sin going up into the face of heaven like the furnace of Sodom; and the pollution of it rotting and raging in the bones and souls of the peasant people round them, as if they were each a volcano whose ashes broke out in blains upon man and beast (John Ruskin, *Letters to the Clergy on the Lord's Prayer and the Church*, 1880, in Hall, 2002, p. 13).

Ruskin's view of cities is clearly in stark contrast to that of Aristotle who saw the city as the very means of securing a good life, yet there were some very compelling reasons driving this emergent understanding of the cities as loathsome. Sherlock (1991) outlines the transition from pre-industrial to industrial cities as including a number of stages and conditions associated with manufacturing. The 'household system' describes the earliest forms of manufacturing where articles were made in the home and were used primarily by the family or local community. This developed into

the ‘guild system’ where craftsmen moved beyond being part-time farm labourers and worked exclusively at their speciality. This change was accompanied by a move to the towns. By end of the 16th century, the guilds had become powerful enough to concern the ruling elites and their work was moved out of towns back to less important rural areas. Guilds were thus replaced by the ‘domestic system’ which marked an important stage of capitalism because it was no longer the cottager buying the raw materials and selling the finished product but the town-based entrepreneur. Important among these were the entrepreneurs involved in the wool trade who generally owned the looms and charged for their hire. Eventually this system was succeeded by the ‘factory system’ which accompanied the development of power from water and steam. Most artisans moved to the factories and this led to concentration of labour in small communities around fast flowing rivers. At the same time, Tudor sheep farmers ‘by fair means or foul’ appropriated open fields and commons and freed serfs were gradually forced off their land which was becoming more enclosed by hedgerows. This led to the breaking up of feudal communities where everyone had a right to use land even if they didn’t own it and it also helped the wool trade prosper.

Agricultural productivity increased with new farming methods and machinery, but rural labour became cheaper and rural life harder. The advent of coal as a power source for iron making had the double consequence of favouring coal mines for the location of new towns, and with cheaper iron products, machinery became available for mass production. Sherlock (1991, p. 64) noted that the rail boom of the 1830s and 40s was mostly concerned with the transport of coal but it did stamp the seal on the process of urbanisation in England. The Industrial Revolution brought an end to the

leisured elite's rule as they were gradually replaced by a class whose power came from industry rather than land. This new elite set out to create wealth 'regardless of the cost in human terms' (ibid, p.67). They obtained moral support from the Whig reformers (who were enthusiastic about destroying the land owning Tory conservatives), who went along with the theories expounded in Adam Smith's (1776) *Wealth of Nations* where the State's interference in commerce was seen as a hindrance to the creation of wealth. For those advocating *laissez-faire* policies, even the most worthy protectionist motives were the antithesis of free trade and national prosperity.

The unbridled pursuit of wealth and the lack of any effective regulatory environment to preserve the amenities of cities had some rather ugly consequences for the rapidly growing number of urban inhabitants. Manchester is a good example of how just how quickly some of the new industrial towns were growing. According to Sherlock (1991), in 1744 Manchester's population was 24 000, but by 1801 (27 years later) it had trebled to 70 000. Such rapid urbanisation had dreadful consequences. Laurence (1999, p.296) reports that in Manchester in the 1840s, the average age at death for a male labourer was a mere 17 years. In comparison, a rural labourer's life expectancy was 38 years. Similar differences were seen between the urban and rural gentry whose life expectancy was 38 years and 52 years respectively. There was little improvement over the next forty years. The Fabian Society's (1887) *Facts for Socialists* informed the populace that in London, 'one person in every five will die in the workhouse, hospital or lunatic asylum'.

London, although epitomising many of the urban problems, was not alone in experiencing them. In 1891, Parisians were living at urban densities twice that of London, and many of Berlin's poor were housed in soldiers' barracks akin to those built by Frederick the Great at densities 7 times[29] that of London (Hall, 2002). In both London and Berlin, there were growing fears that city dwellers were becoming mentally unstable with *die Angst vor der Stadt* expressing the fear of 'social decomposition, suggested by evidence of suicide, alcoholism, and venereal disease, excessive rationality and a lack of political stability' (ibid, p. 35). In the United States, the *American Journal of Sociology*, 1897, acknowledged the widely held belief that 'large cities…are great centres of social corruption and degeneration' (in Hall, 2002, p. 37). It was becoming evident to all who lived there, that the cities of the Industrial Revolution were often unsavoury at best, lethal at worst.

In stark contrast to the pre-industrial cities which had been seen as 'centres of art and culture, of all that was good in civilisation' (Ferguson, 1994, p.25) the conditions of the industrialised city gave rise to the Romantic movement in literature and the arts. Though the condition of the working poor and impoverished was arguably most dire in English cities, a corresponding disenchantment with urban life was evident in North America as well. As White and White (1962, p.2) pointed out, though a select few spoke out in favour of the city (they cite Walt Whitman and William James) 'the volume of their voices did not compare with the anti-urban roar produced in the national literary pantheon by Jefferson, Emerson, Thoreau, Hawthorne, Melville, Poe, Henry Adams, Henry James, and William Dean Howells'. Furthermore, they warn, those who today 'express tender concern' for the city's future should recognise

[29] This was calculated using data cited in Hall, 2003: 33.

the strong anti-urbanist sentiment pervading American history. For much of both North America and Great Britain's recent past, those who could 'abandoned the city as the centre of human endeavour and turned instead to the worship of nature' (Ferguson, 1994, p.25). Short (1991, p. 73) suggested that the ability to buy a rural piece of land was of 'respectability, taste and decorum' and, furthermore, the 'socially sanctioned method of conspicuous consumption'. This trend for wealthy urbanites to move to the county was found throughout much of Europe. Sherlock (1991) describes how, from 1820-1840, there was a housing boom to accommodate the wealthy in areas a carriage ride away from the city. With the development of rail in the 1860s, the affluent began to move even further out to the 'real' country. Urban areas themselves began to expand due to the advent of rail, electric tram and in some cities, underground transport systems. These years therefore represent something of an inversion of the natural order where the power elite – the traditional inhabitants of the city centre – left for greener pastures. The suburbs, which until that time had been the realm of the poor and the powerless, became prime real estate.

In England, the conditions of the urban started to receive attention in the mid-1800s and in 1848 the first Public Health Act was passed which gave local authorities new responsibilities. Despite this, mortality rates due to disease remained high and typhus, small pox and cholera were not effectively brought under control until 1875 when local governments were required to build proper sewers. It was against this backdrop of urban misery that town planning with a social focus evolved and Hall reminds us that although it is 'numbingly unoriginal', it is also vital to bear in mind that twentieth-century planning movements were, in essence, a 'reaction to the evils of the nineteenth century city' (Hall, 2002, p. 7).

Thus Howard's conceptualisation of the 'Garden City' (developed in the years from 1880-98) and the derivatives conceived by Raymond Unwin and Barry Parker in Britain and Henry Wright in the United States can only be understood in this context. This first theme in planning symbolises not so much the advent of town planning, which already had an established history, but rather the birth of modern planning because it had a social purpose (Hall, 2002). Howard was very much concerned to alleviate the abysmal conditions of cities but he also wanted to address a depopulating countryside. Howard's solution was 'central urban renewal at lower densities, accompanied by new garden cities and garden suburbs on green fields' which were to be built by 'public agencies' and serviced by 'new technologies of electric power and low cost public transport' (Hall, 2002). This ideal had to compete with a number of other trends in planning that emerged during this time. Patrick Geddes and his American counterparts Lewis Mumford and Frank Lloyd Wright developed a second strand, which was also directed at over-crowding and its ill-effects. In contrast stands the 'monumental movement' which, though full of pomp and splendour, was devoid of any social objective. Finally, the particular brand of urban intensification proposed by Le Corbusier represents a fourth approach to urban planning (Hall, 2002, p. 8-9).

Despite the substantial differences between these planning ideals, perhaps the most crucial debate of this time pertained to the role of the state. The political fault line lay between those who were avidly against any state intervention, which was seen as inimical to the creation of wealth, and those who believed more regulation was required in order to redress the plight of the urban poor. Planning, in this context, clearly represented a form of political orientation and spoke of one's belief in the

rightful activities and methods of state enterprise. Although other matters of welfare worked out somewhat differently, housing received special attention within the framework of a debate which raged between those who maintained the poor had been reduced to a state of utter apathy and those who were convinced London to be on the verge of a socialist revolution. Adequate housing was seen as the antidote to a socialist catastrophe and those holding this conviction allied with others who had long maintained the urban workforce deserved a decent place to live. Housing thus became a pivotal point around which the growing social movement came to turn.

Although building regulations had been passed for drainage, ventilation, thickness of walls and space at the rear of buildings in 1875 (Sherlock, 1991, pp. 78-80), in the United Kingdom, the role of housing in achieving social goals can be attributed to the 1885 and 1890 Housing of the Working Classes Acts, the latter of which made provision for the 'redevelopment' of large areas of the city in order to build working class lodging houses. This allowed 'progressive local authorities to take control' (Sherlock, 1991, p.32), but the result was often more devastating than the original problem. Freeman (in Girardet, 1996, p. 80) noted that while 'slum clearance' was a powerful slogan used to justify the removal of old housing estates, it ignored the fact that the majority of the social problems found in such places were not a direct consequence of the built environment. Hall (2002, p. 46) argued that although the loathing and fear of cities was often distorted and sometimes exaggerated, 'the reality was horrific enough, and it stemmed from poverty'.

Modern cities

The problems of rapid, unplanned growth provided impetus for an urban planning movement based on rationality and efficiency (Troy, 2000). Newman (1997, p. 14) described the modern city as an 'expression of the industrial revolution' which was based on a formulaic or 'scientific' approach to town planning with predetermined plot ratios, setbacks, proportions of open space and standardised roads and housing. According to Wagner, a German planner in the early 1900s, districts with 10 000 inhabitants should have '13 hectares of woods, 2.4 hectares of playing fields, 1.6 hectares of sports grounds, and 0.5 hectares of walkways' (Van Rooijen, 2000, p. 221). Newman relates how 'each new suburb was rolled out as though it came from a factory' with little thought given to either human creativity of the local bio-physical environment. He points out that neither creativity nor the bio-physical environment can be mechanised without losing their essential character and they therefore represent a core part of the critique of modernist planning with its standardisation and formulae.

But beyond the good intentions of any single planner, or even planning philosophy, were forces acting on the form of cities all over the world. 'Advances' in transportation and cheaper mortgages driving change in real estate meant that unless constrained by geographical features, many cities began to spread and decentralise. The response in Britain was the Housing and Town Planning Bill of 1909 which aimed to:

> Provide a domestic condition for the people in which their physical health, their morals, their character, and their whole social condition can be improved…The Bill aims in broad outlines at, and hopes to secure, the home health, the house

> beautiful, the town pleasant, the city dignified, and the suburb salubrious (John Burns, 1908, in Hall, 2002, p. 54).

Housing, and its role in society can also be regarded as a point of difference between Europe and America. Hall (2002) argued that in early twentieth century America, there formed an alliance between real estate interests and middle-income home-owners who had no interest in housing programmes for the poor. In the United States, the German planning control mechanism of zoning was adopted with the first zoning ordinance passed in 1916 in New York. Zoning is based on the principles that 'like activities' should be placed together, and that residential and industrial areas should be separated (Gottdiener, 1994, p. 298). Zoning policy rests in the hands of municipalities and townships and it controls the height, bulk, and area of buildings (Pacione, 2001). Although ostensibly designed to regulate shading, fire danger, congestion and assist with the provision of services, critics of zoning point out that regulation of minimum site size, floor coverage, minimum number of bedrooms and a requirement that the house be detached can all equate to a very effective way of excluding particular social groups from a given area (Pacione, 2001). Hall (2002: 62, citing Walker, 1960) describes zoning as a 'static process of attempting to set and preserve the character of certain neighbourhoods, in order to preserve property values in these areas, while imposing only nominal restrictions on those areas holding a promise of speculative profit'. Zoning used thus was the antithesis of social justice.

In Europe, however, a strong 'working class consciousness was allied with an interventionist bureaucracy' (Hall, 2002, p. 42) and the attitude to housing therefore differed markedly on the other side of the Atlantic. These differences were

exaggerated by the aspiration of the post- World War I government to provide those who had fought for Home and Country with homes worth fighting for. Fischler (2000) maintained that prior to the Great War an adequate standard of living was an integral part of a reformist discourse expressed as both an economic possibility and political necessity. In post war fervour, however, providing decent living standards became a sacred duty, 'a debt to the dead which must be paid to the living, in terms of health and life and opportunity' (Rowntree, 1919, in Fischler, 2000, p. 144). This movement gained legitimacy through claims that a certain standard of living was necessary in order that a state call itself 'civilised'. The following quotation from A.C. Pigou (1914, in Fischler, 2000, p. 142) is a good example of this conviction with regards to the State:

> It is the duty of a civilised state to lay down certain minimum conditions in every department of life, below which it refuses to allow any of its free citizens to fall. There must be a minimum standard of conditions in factories, a minimum standard of…leisure, a minimum standard of dwelling accommodation, a minimum standard of education, of medical treatment…and of wholesome food and clothing. The standards must all be upheld…and any man or family which fails to attain independently any one of them must be regarded as proper subject for State action (1914, p. 36).

As a result, between the first and second World Wars, more than one million local authority houses were built and most of these were single-family cottage style dwellings with a garden, located at the urban periphery of major cities (Hall, 2002). They reflected many of Robert Unwin's ideas, such as a minimum distance of 70 feet between houses to ensure sunshine in the winter and an emphasis on cul-de-sac layouts. When combined with the new means of transportation, this kind of development inevitably began to encroach upon the countryside and while it might be

argued that this was a waste of good agricultural land, the following quotation illustrates the social concerns that were also mooted at the time:

> And then there are the hordes of hikers cackling insanely in the woods, or singing raucous songs as they walk arm in arm at midnight down the quiet village street….There are fat girls in shorts, youths in gaudy ties and plus-fours, and a roadhouse round every corner and a café on top of every hill for their accommodation (Joad, 1938, in Hall, 2002, p. 84).

Bruegmann (2000) stated that the real 'countryman' would obviously have very clear ideas about what would be the appropriate kind of building for the countryside. For the landed gentry, rural development would involve a great country house with an associated agricultural village. From this perspective, 'the strivings of the middle classes to obtain for themselves what had been the privilege of the landed gentry could only result in disorder and ugliness'. This conviction was based on more than aesthetics; 'It was deeply rooted in very basic notions about the nature of the natural social order' (Bruegmann, 2000, p. 161).

It was during the post-World War I years that the ideas of Patrick Geddes gathered strength. This famous figure in urban planning is most notable for his development of regional planning which entailed a survey of the resources available in a natural region and, importantly, of the human responses to it. This concept resounds today and Hall (2002, p. 149) has described it as the 'aphorism' of planning gospel 'Survey before Plan'. Although this elevated the role of geography, according to Geddes the process of surveying should also include an evaluation of traditional occupations and historic links to places so as to gain an understanding of the 'active experienced environment' (Weaver, 1984, in Hall, 2002, p. 149). According to Hall (2002), the ideas of Geddes and Howard are closely linked, but different, in the sense that

Geddes' ideas applied to the region rather than the city. Both were keen to ensure that if the people could not go to the country then the country should come to the town.

Geddes' meeting with Lewis Mumford in 1923 resulted in these ideas being conveyed across the Atlantic and made a strong impact on the Regional Planning Association of America (Hall, 2002). In these times, the private motorcar was seen as providing the means whereby the populace could take advantage of rural and semi-rural living. Electricity and transportation efficiencies also enabled industry to leave the congested city. As Mumford, who called Geddes 'master', (1925 in Hall, 2002, p. 161) wrote:

> Regional planning asks not how wide an area can be brought under the aegis of the metropolis, but how the population and civic facilities can be distributed so as to promote and stimulate a vivid, creative life throughout the whole region… The regionalist attempts to plan an area so that all its sites and resources, from forest to city, from highland to water level, may be soundly developed, and so that the population will be distributed so as to utilise, rather than to nullify or destroy, its natural advantages. It sees people, industry and land as a single unit [and cities were to] represent fuller development of the more humane arts and sciences.

Sub-urban and rural living was unexpectedly popular and the problems associated with urban sprawl became more apparent and more pressing in both Britain and the United States. As Roseland (1998, pp.15-16) noted, most North American cities were built:

> using technologies that assumed abundant and cheap energy and land would be available forever. Cheap energy influenced the construction of our spacious homes and buildings, fostered our addiction to the automobile, and increased the separation of our workplaces from our homes. Urban sprawl is one legacy of abundant fossil fuel and our perceived right to unrestricted use of the private car whatever the social costs and externalities.

The Broadacre Cities of Frank Lloyd Wright reflect this faith in the abundance of resources, but, importantly, his ideas also demonstrated a wariness of relying overly

on industry and factory jobs in the wake of the Depression of the 1930s. In his ideal world, everyone could be farmer and artist on his acre of land which was considered enough to be self-sufficient. Although the Broadacre concept was criticised at the time for making family units live in isolation, the general populace enthusiastically received the diluted version of suburban living on a quarter acre.

In England too, suburban living proved popular. Blowers and Young (2000, p. 92) describe the post- World War II era of British history as 'the apotheosis of state intervention in the creation of the welfare state' which they attribute to the 1945 Labour government. The 'compulsory collectivism' necessitated by the war fostered a sense of community and common cause which expressed itself in 'a generous social reform and reconstruction programme in health, housing and welfare'. These activities recast planning which was 'elevated to one of the central planks of social reconstruction' (Freestone, 2000, p. 3). The demand for low-density living had a noticeable impact on the surrounding agricultural areas and various methods of controlling sprawl were attempted. One of the most enduring was the British 1947 Town and Country Planning Act which was designed to shape both the city and the countryside. The Act also tried to find some equilibrium between private land ownership and public accountability by making all land development subject to permission from the local planning authority. Its goals included protecting the countryside from urban sprawl and the creation of New Towns. These planned new towns surrounded by greenbelts paid lip service to the ideas of Ebenezer Howard but were never the social experiment in communal living he envisaged. The greenbelt, however, became a central part of modern planning orthodoxy and sparked a perpetual debate between real estate developers and planners. An unintended effect of

both urban containment and advances in motoring technology was a plethora of ‘leap frog’ towns which essentially form commuter villages beyond the greenbelt (Pacione, 2001).

During the 1960s, attention shifted to the redevelopment of existing areas. One of the more infamous means by which this redevelopment occurred involved the building of tower blocks or high-rises. These started appearing in the wake of World War II in response to the increased demand for urban housing and were somewhat reminiscent of Le Corbusier’s grand housing visions. These were especially popular in the Eastern Bloc countries where such housing was seen as providing the ideal foundation for communal living (Girardet, 1996). But they were ugly, difficult to live in, and, as demonstrated by the collapse of Ronan Point in London in 1968, sometimes structurally unsound. According to Girardet, a number of British studies also found that ‘psychoneurotic disorders’ were three times more common among those living in multi-storey dwellings than among those living in low-level detached homes. Within the tower blocks themselves, the likelihood of having such a disorder increased the higher up one lived. He admits, though, that living in high-rises does not always cause stress pointing out that in Singapore and Hong Kong people cope ‘far more successfully’ (Giradet, 1996, p. 82) due to better design, better supervision and the mutual support provided by the extended family. This can be contrasted to those countries where high-rises have simply become ‘dumping grounds for the less fortunate’ where drugs, crime and vandalism are daily occurrences.

The Sustainable City

This brief history of urban events and change demonstrate some of the forces and rationalities driving the waxing and waning of different cities over the ages. More recently, however, it has become popular to explore these changes in terms of global limits generally and a given city or region's bio-physical resource management more specifically. Stories in this vein talk about ancient Mesopotamia, for example, where the city of Mashkan-Shipir become unliveable within a short time because the surrounding fields were destroyed by the mineral salts that were a consequence of their irrigation techniques. The Anasazi of Chaco Canyon in the American South-west gradually deserted their hunter-gatherer lifestyle in the 6th century AD in favour of the cultivation of crops. Their sudden abandonment of the pueblo is commonly attributed to overuse of the surrounding lands and declining productivity which left them unable to withstand prolonged periods of drought. Those who wish to draw parallels between these seemingly uneducated or ignorant choices of the ancients and our contemporary state favour these types of explanations. A very local example is that of Lakes Forsyth and Ellesmere, near Christchurch, both of which have been declared technically 'dead' in that they can no longer sustain the variety of life they once did owing to pollution and the invasion of pests and weeds.

Swyngedouw and Kaika (2000, p. 570) have noted that while the rhetoric might have changed, with new concepts like sustainability becoming fashionable, 'a deep anti-urban sentiment combined with an idealised and romanticised invocation of a 'superior' natural order has rarely been so loud'. So although it may be the case that sustainable cities are currently in vogue, the reasons behind this do little to celebrate the urban condition. Two main factors have led to the city as a target of action

directed towards bio-physical environmental sustainability. The first factor is the growing awareness that almost half of the world's population now resides in cities and towns. Increased urbanisation since the Industrial Revolution has increased the size, impact and importance of cities as ecological entities. The second aspect is the need for achievable *local* solutions to seemingly unassailable global problems (Atkinson and Davila, 1999; Mercer and Jotkowitz, 2000; Finco, and Nijkamp, 2001; Welch, 2003) and the city as an administrative entity provides for a number of possibilities. Local Agenda 21 is an example of situated attempts to address global bio-physical environmental problems such as species extinction, ozone depletion and global warming. Conceptual tools such as the ecological footprint model (Walker and Rees, 1997) have also been used. Walker and Rees (1997, p. 97) define the ecological footprint of a given population as 'the total area of productive land and water required on a continuous basis to produce all the resources consumed, and to assimilate all the waste produced, by that population, *wherever on earth that land is located'*. The concept has been employed to calculate and compare the footprints of various cities, countries (Earth Council, 1996) and even housing types (Walker and Rees, 1997). Rees (1997a and b) has even argued that we need to reformulate our idea of what a city is, based on its footprint, because this footprint generally extends far beyond the boundaries of the city as, for example, an administrative unit. He stated that cities as we understand them now are 'incomplete systems' that physically occupy less than 1 per cent of the ecosystem area upon which they rely. For Rees, the ways in which a city might reduce its ecological footprint includes integrated city planning and open space planning, better use of green areas and pursuing economic development that has no impact on ecosystems. Self-sufficiency is key.

A variation on this theme employing concepts from ecology to the city involves the evaluation of the 'metabolism' of an urban area. It is now common to speak of cities in terms of whether its metabolism is linear or circular. 'Linear' metabolic processes involve unthinking resource use with 'no thought for the consequences' and where inputs are unrelated to outputs (Girardet, 1996). Nutrients are taken from the land, made into consumer items which are then and converted to waste, destined for the landfill or some other 'sink'. 'Circular' metabolism, in contrast, seeks to reorganise the way a city functions, reusing outputs as inputs into other processes. In this way, 'Sewerage works are designed to function as fertiliser factories …[and] household and factory rubbish is regarded as an asset…[when] recycling is integral to the functioning of cities' (ibid, p. 23).

Fitting with the use of biological terms is Giradet's (1996, p. 86) description of the city as a parasite – 'an organism that lives, and is dependent on, another host from which it is nourished'. The parasitic tendencies of cities express themselves as a drain on energy converted from fossil fuels or nuclear material, waste which is often disposed of, or has consequences, beyond the city limits. Commonly, human waste (which has been described by Girardet (1996, p. 94) as a 'valuable substance' that can be used as a fertiliser) and chemical waste are mixed together resulting in a 'toxic cocktail' (p. 98) that is no good for anything. Cities are also the primary consumers of charcoal, timber and pulp, and these demands have led to deforestation in both surrounding and distant areas. This in turn causes a loss of topsoil, contamination, rising temperatures and reduced moisture. Forests also act as carbon sinks thereby converting CO_2 into oxygen and water. Cities also use huge amounts of water that must then be disposed of at a later date. Landfills become home to a multitude of

household and industrial wastes, some of which can be recycled employing the circular metabolism described above, but many others cannot. These landfills produce leachates which contaminate the land and adjacent water systems. The private motorcar is a major polluter emitting nitrogen oxides, carbon dioxide and carbon monoxide. These issues all combine to compromise the health of the city as a 'biological organism', a discursive metaphor evident in other terms including 'urban blight', 'green lungs' and 'arterial' problems.

Active urban ecology is a movement that emerged in the 1970s to specifically address these concerns. First mooted by Richard Register who founded the non-profit organisation *Urban Ecology* in 1975 (Roseland, 1997), early versions of the movement were very action-oriented and the relationships between humans and nature were not theorised comprehensively. This active urban ecology targeted building 'slow streets', restoring urban wetlands and waterways, planting and harvesting fruit-bearing trees on the streets, building solar greenhouses, obstructing the construction of a local freeway, and the publication of *Eco-city Berkeley* in 1987. The organisation founded the journal *The Urban Ecologist* and organised the first International Eco-city conference in 1990. Another significant achievement was the establishment of a set of principles that helped define urban ecology (Roseland, 1997, p. 3) and included:

1. Reorganising land use in order to encourage compact, diverse, green, safe, pleasant and mixed use communities near transit nodes and transport facilities;

2. Recasting transportation priorities to encourage pedestrian and bicycle traffic over automobiles;
3. Restoring unhealthy urban bio-physical environments such as waterways and shorelines;
4. Supporting local agriculture and community gardening;
5. Encouraging recycling, appropriate technological innovations and resource conservation;
6. Promoting environmentally sound economic activities among the business community;
7. Raising awareness of the local and regional bio-physical environment and sustainability issues.

The remaining three principles relate to social goals such as ensuring the availability of affordable housing, encouraging social justice and promoting 'voluntary simplicity' instead of over-consumption (ibid, p.3).

These principles of urban ecology have influenced the development of terms like sustainable cities and urban sustainability, which generally try to combine these sorts of bio-physical environmental and social goals with economic development (Elkin and McLaren, 1991; Haughton and Hunter, 1994; Nijkamp and Perrels, 1994; Beatly, 2000; Evans, 2002; Freeman and Thompson-Fawcett, 2002; Adger et al., 2003; Portney, 2003). The principles associated with urban ecology have also informed particular planning movements such as Smart Growth (English, 1999; Geller, 2003), New Urbanism (McCarter, 1998; Talen, 1999; Duany, Plater-Zyberk and Speck,

2000), Green Urbanism (Beatly, 2000), Traditional Neighbourhood Design (Till, 1993) and the Compact City.

The compact city

One of the more popular articulations of sustainable urban forms is the compact city, defined by Burgess (2000, p.9) as cities that 'increase built area and residential population densities to intensify urban economic, social and cultural activities and to manipulate urban size, form and structure and settlement systems in pursuit of the environmental, social and global sustainability benefits derived from the concentration of urban functions'. Whilst specific reference to compaction is often absent or downplayed in policy statements and planning documents, urban growth boundaries (containment), zoning, urban renewal and infilling (consolidation) all serve to increase residential densities. The standard suburban quarter acre section or lot that was once a feature of North American, Australian and New Zealand cities has been replaced with much smaller versions, even as the trend for larger housing grows. The downsizing of sections, consolidation and containment are ostensibly advanced as efforts to manage urban sprawl, a term defined by Tregoning, Ageyeman and Shenot (2002, p.341) as a 'popular pejorative' for 'poorly planned growth that consumes precious open spaces, mars the landscape with ugly development [and causes] traffic jams, crowded schools and a host of other ills'. According to English (1999, p.36):

> Sprawl sucks the life out of older downtowns and neighbourhoods. It destroys community character and countryside. It reduces opportunities for face-to-face interaction among people, thereby making it more difficult to create, or retain, a sense of community. Sprawl forecloses alternatives to the automobile as a means of transport. And

> sprawl leaves older cities and towns with excessively high concentrations of poverty and attendant social problems.

In the contemporary planning orthodoxy, it is believed that the benefits of urban compaction include the preservation of agricultural land and greenbelt peripheries, and thus maintain the productive capacity of the surrounding land as well as the wildlife stocks that inhabit the periphery. The potential to reduce automobile use with an accompanying decrease in the use of fossil fuels, carbon dioxide emissions and traffic congestion is also listed as a benefit (Newman and Kenworthy, 1989). Mixed use (of commercial, industrial and residential) should enable employees to walk to work, thus decreasing the need for private automobiles (Grant, 2002). Although subject to a great deal of debate, proponents of the compact city list cultural and social advantages as well. Informal surveillance resulting from more people walking, cycling and playing on the streets should increase general street safety. A more compact form should also correspond to greater community activity, vibrancy and greater equality in access to resources because access to resources is no longer car-dependent (Hillman, 1996; Elkin *et al*., 1991). In a less car-dependent society, time that would otherwise have been spent in traffic jams could be spent with family and friends or on other leisure activities. Jacobs' (1961) *Death and Life of Great American Cities* (1961) and more recently Duany, Plater-Zyberk and Speck's *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream* (2000) are often invoked to add weight to these claims (but for further discussion see Breheney, 1995; Crookston, Clark and Averly, 1996; Jenks, Burton and Williams, 1996, 1998, 2000; Campbell, 1999; Jenks and Burgess, 2000; de Roo and Miller, 2000; and in New Zealand Gow, 2000; Dixon, Dupuis and Lysnar, 2001; Dixon and Dupuis, 2003).

The combination of these economic, bio-physical environmental and social benefits makes a compelling case for the compact city, however, there has been a growing reaction against this type of urban form. Troy (1996a, 1996b), one of the earliest critics of compaction, argued that the bio-physical environmental rationale was weak and that this urban form could mean a rise in real estate prices that would make healthy housing unaffordable and exacerbate inequality (also see Breheny, 1996, 1997; Ancell, 2005). The authors of the Demographia Surveys (Wendell-Cox and Pavletich, 2004, 2006) have adopted a similar argument based on their comparison of median house and median income multipliers of 100 cities. Those cities with multipliers of 3 or less were deemed affordable; those of 3.1 to 4 moderately unaffordable; 4.1 – 5 were called seriously unaffordable and those with multipliers of 5.1 and above were severely unaffordable. One of the factors leading to unaffordable housing markets was the type of residential land restriction associated with urban compaction. Of course, the other side of this scenario is that some people, particularly residential and commercial real estate developers, stand to gain considerable wealth from intensified land use (Logan and Molotch, 1996). Gordon and Richardson (1997) also raised questions about the desirability of urban compaction for its environmental and social effects and Crane's (1996) study of travel patterns in compact cities suggested that neo-traditional neighbourhoods, which are based on the concept of traditional, walkable communities, might actually raise the levels of 'vehicle miles travelled' because trips are shorter and cheaper but more frequent. Finally, there is also some debate as to whether or not the suburban garden, despite being much maligned, does not support more biodiversity than those areas (rural) or strategies (urban infilling) usually associated with sustainability. Certainly, the pictures

presented in Figure 7 indicate the suburban garden might be more accommodating in this regard. [30]

Figure 7: Visions of Biodiversity?

A new wave of criticism has also been directed at the social consequences of compaction. Bruegmann's *Sprawl: A Compact History* (2005) and Kruse and Sugrue's *The New Suburban History* (2006) do not deny that sprawl has its problems, but insist on a revised view of suburban development. Bruegmann argues that increased density – one of the aspirations of the compact city – is a blunt instrument that does little to illustrate how people actually live; higher densities do not necessarily equal environmentally friendly behaviour. In his history Bruegmann posits this latest anti-sprawl effort based on environmentalism as just the latest in a series of

[30] I would like to acknowledge Bob Day, National President of the Housing Industry Association, who made this point in a similar series of photos during his address to the Mckenna Institute (2005).

attacks on suburban living. He quotes architect Williams-Ellis' *England and the Octopus* (in Bruegmann, 2005, p. 117-118), which, he maintains, is 'drenched in class resentment':

> As the Joneses fly from the town, so does the country fly from the pink bungalow that they have perched so hopefully on its eligible site. The true countryman will know that the area is infected – the Joneses have brought the blight of their town or suburb with them – and in all probability they and their home will be followed by an incursion of like-minded people similarly housed, and the country will be found to have further withdrawn itself beyond the skyline in its losing retreat towards the sea.

Other arguments used in later anti-sprawl campaigns were the supposedly higher financial costs of unplanned growth and/or the 'social, intellectual and artistic poverty' of suburbia (Bruegmann, 2005, p. 125). Many of these arguments against sprawl, authors in this vein point out, are specious. Despite critics of suburban life, such as Lewis Mumford, insisting on a bland and monochromatic view of the suburbs, suburban living is an age-old phenomenon that persists because it meets many people's needs very well. This is evident in the establishment of the Save Our Suburbs (SOS) movement in Australia which started in Victoria but has since spread to other cities. Organised and run by volunteers, SOS aims to preserve residential amenity, discourage inappropriate development in residential areas and ensure that the responsibility for the planning of the suburbs remains primarily in the hands of local councils.

Advocates of the compact city argue that this is the most sustainable urban form, yet, a brief overview of some of the issues involved highlights the complexity of this seemingly straightforward claim. The movement's bio-physical environmental underpinnings are contentious – more assumed than proven. Many of the economic

arguments are a double-edged sword with the maximal use of infrastructure offset by higher maintenance and servicing costs. In social terms, residents wishing to escape the 'rat race' and the 'concrete jungle' do not always welcome the vitality and vibrancy of sidewalk living of the kind Jane Jacobs outlined in the *Life and Death of American Cities* (1961). More nebulous social goals, such as equitable access to healthy housing, can be made difficult or impossible in a market of reduced land supply.

Sustainable cities and urban sustainability

These issues discussed in relation to the compact city highlight the urban as a complex of not only bio-physical environmental concerns, but also social and economic forces as well. Indeed, as Lewontin (1997, in Swyngedouw and Kaika, 2000, p. 570) has pointed out:

> A rational environmental movement cannot be built on the demand to save the environment, which, in any case, does not exist…Remaking the world is the universal property of living organisms and is inextricably bound up with their nature. Rather we must decide what kind of world we want to live in and then try to manage the process of change as best we can to approximate it.

Economic and social factors have a central role to play in this making of the world.

Urban sustainability is a catch-all phrase that conveniently summarises many of our aspirations in this regard. The term is often invoked as justification for a wide range of decisions that culminate in the built form of the city which then performs on, and for, its inhabitants. Though decisions are often disguised as technical bio-physical environmental issues, the compact city debate highlights the role of less tangible elements in the formation and evolution of our cities. From the religious to the

compact city, I would argue, as have Fernandez-Armesto (2000) and Carter (1983, p. 114), that:

> The plan and built form of the town are direct reflections of the nature of culture on the large scale…and of social organisation on the smaller scale…It is a truism that the town epitomises in its physical nature the complex of political, economic and social forces which characterised the period of its creation.

This raises some questions about the role of established and newly identified political, economic and social aspects of urban change and sustainability. One of the more recent variations on the good city and sustainability is the notion of dematerialisation. According to Bridge and Watson (2000), dematerialisation has three distinct strands with the first pertaining to the degree to which manufacturing functions are separated by subcontracting (perhaps to different countries), just-in-time production techniques or specialisation. The second form of dematerialisation concerns the ways in which money has become disconnected from material things as is the case with futures markets, floating exchange rates and credit. The final strand they identify is based on the work of Castells (1996, 1997 and 1998) who argued that we now live in a networked information economy where place is less important than connectedness.

Though Castells' theory has been furiously negated by those who insist on the importance of place (see, for example, Sassen, 1998, 2000, Amin, 2000 or Gleeson and Low, 2000 for balanced critiques) his ideas have been adopted by a number of scholars who portray information as the most recent requirement in the changing fortunes of cities. In the days of the old mills, for example, it was essential to be adjacent to strong flowing rivers for production and profit. Several decades later the advent of electricity made this requirement obsolete. Proximity to rail was another advantage for those involved in the manufacturing of goods, yet this former necessity

is neither here nor there in an age of ubiquitous roading networks and airfreight. Indeed, whole cities now find themselves obsolete, particularly in those regions where the manufacturing industries have moved to take advantage of cheaper labour costs in less developed countries. In the Northeast of the United States, some cities are described pejoratively as being located in the rust-belt, an appropriate label for cities in slow decline. Eminem's *8 Mile* is a excellent portrayal of the monotonous yet corrosive hardships residents face when key industries move elsewhere leaving unemployment, crime and a wealth of other social problems. Such cities can be compared with those in the more salubrious and vibrant sun-belt states, and academic attention has shifted from the curiosities associated with industrial production to those of the service or knowledge and information industries. As Thorns (2002) noted, the raw material of these cities are ideas and knowledge and their new requirements are research institutions and access to 'knowledge-flows' (see also Newton, 1995).

Kanter, former editor of the *Harvard Business Review*, has argued that today's successful cities are either 'makers' engaged in manufacturing and production, 'thinkers' who work with ideas and concepts, or 'traders' who form focal points of exchange between different countries and cultures. Neo-liberalism and fiscal crises have ensured a shift from managerialism to entrepreneurialism with cities 'recast as players in a rough and tumble pursuit of highly mobile capital' played at both the national and international level (Gleeson and Low, 2000, p. 16; also see Low, Gleeson, Elander and Lidskog, 2000; Castree, 2006). While a different set of imperatives, such as attracting investment in primary and secondary industries, operate in less developed countries, the so-called 'First World' has diverted some of

its focus towards attracting skilled workers who are clever, mobile and willing to move to those places that provide a good quality of life.

The ways in which a city brands itself in order to take part in this competition is having a profound effect on the ways in which our cities are constructed not just physically but mentally as well. This idea has been a feature of Eade and Mele's (2002, p. 6) discussion of developments in urban theory. They note that urban imagery should be seen as a 'constitutive element in the social production of the city [where] the built form of the city and the interpretative schemas of different social groups are in active engagement… The imaginary… acts and is acted upon through the production of the city'. The authors thus recognise that these elements of place are contested (see also Jess and Massey, 1995) and that limited attention is given to the inequitable politics of place-making and the consequences of limited participation of certain under-privileged groups (also see Brody, Godschalk, and Burby, 2003; Jayne, 2003; Schollman, Perkins and Moore, 2001). Fraser (2000, in Fincher, Jacobs and Anderson, 2002, p. 31) expressed concern over this, arguing that politics based on actual material conditions is losing ground to the politics of identity at a time when 'an aggressively expanding capitalism is radically exacerbating economic inequality'.

A large part of this debate over branding and successfully attracting desirable, mobile workers centres on the sorts of activities and lifestyles that appeal most to this group (see Pawson, 1999, for a discussion of such 'urban entrepreneurialism' in New Zealand). An avid proponent of the power of information and innovation, Florida, author of *The Rise of the Creative Class* (2003a), insists that successful cities will be those that can attract 'creative' groups including those in their 20s, students, artists

and homosexuals. Sydney, Portland, San Francisco, and Seattle are Florida's favourite cities; interestingly enough, they also have the lowest percentages of families. On the other side of this debate is Kotkin, author of *The City: A Global History* (2005) who warns that the data Florida used to form his conclusions are outdated (based on the dot.com boom) and that 'many of the most prized members of the 'creative class' are not 25-year-old hip cools, but forty-something adults who, particularly if they have children, end up gravitating to the suburbs' (Kotkin, Nov, 2005). Using a study of artists and their role in the urban economy, Markusen (2006) is similarly sceptical of a straightforward causal relationship between creativity and urban growth. Furthermore, using Florida's figures, Peck (2005, p. 66) has pointed out that if roughly a third of the population can be seen as members of this desirable creative class, two thirds are left 'languishing in the working and service classes, who get nothing apart from occasional tickets to the circus'.

Thorns (2002, p. 75-76) has written about this division between the desired and unwanted in terms of the 'two faces' of the postmodern city, though others have called this phenomenon the dual city (Fainstein and Harloe, 2000) or even the 'city in quarters' (Marcuse, 2000). The first of these faces is the glitzier, ostensibly prosperous city of wine bars and casinos; the second is that of the 'excluded' relegated to 'urban ghettos' of the homeless and the poor. The separation of these two cities is masked by a media-generated illusion suggesting a common, shared culture and urban experience. Kotkin (2005) gives a good example of this in his portrayal of New Orleans prior to Hurricane Katrina. Referring to the limitations of culture-based economies of the so-called 'hip' cities, like New Orleans, he writes that its reputation

did not prevent manufacturing, trade, finance, engineering, energy and medical industries from decamping to other states. He noted:

> Lost in the ghastly images of New Orleans's poor is the fact that the city's whites, about 27 per cent of the population, are wealthier and more educated than their counterparts nationwide. They, of course, welcomed the new nightclubs, coffee shops and galleries that dotted their grander neighbourhoods. New Orleans epitomised the inequality of the hip cool city. While the national gap between black and white per capita income stands at about $9,000, in New Orleans it is almost $20,000.

One of Kotkin's arguments is that gross disparities such as those found in New Orleans lead to a tension that many find unwholesome and this affects the sustainability of cities in profound ways. Social infrastructure and making people feel safe and secure, are essential parts of a city's appeal in the under these new economic conditions, he argues.

These are exactly the types of issues Putman discussed in his book *Bowling Alone*: *The Collapse and Revival of American Community* (2000). His argument is that social infrastructure and community are aspects of social capital and that this form of capital is essential to a strong economy. His evidence that social capital is in decline, hinted at in the title, included the observation that while the number of individual bowlers increased by 10 per cent from 1980 to 1993, league (community-based) bowling actually decreased by 40 per cent. Amin (2000) adopts a similar argument in his discussion of social capital and the social economy. He noted that talk about 'the economy' often ignores voluntary, non-profit or other informal economic activities. Social capital involving cooperation, trust and friendship are necessary for a healthy formal economy and can be measured in the levels of voluntary work, civic

engagement or voter turnout. Though this argument has its detractors (see Florida, 2003b, for example, who argued that not everyone wants to live in a community-based civil society), authors like Amin believe that the social economy makes use of social capital, often through the establishment and operation of non-profit organisations which helps to create jobs and other assets. This debate does raise some interesting questions about the formal and informal ways in which citizens might legitimately participate in the construction of the city (see Brody, Godschalk and Burby, 2003).

All these factors – the creative classes, inequality, cities as growth machines, social capital and participation – point to urban sustainability as involving more than just a greening of the city. Whilst the city as an administrative unit is an excellent location in which bio-physical environmental policies can be implemented, the urban as a condition alerts us to the need to be mindful of established goals surrounding social and economic issues. This has led me to make a tentative distinction between sustainable cities and urban sustainability. This division is based less on the semantic underpinnings of the terms as the need to distinguish between sustainable cities as bio-physical environmental entities and locations (ecosystems) and urban sustainability which takes into account the urban as a condition. My investigation of urban practitioners' understanding and interpretation of urban sustainability will attend to these distinctions.

Chapter Five: Grounding the Study - An Introduction to Christchurch

Neither the use or the meaning of the terms 'urban' or 'sustainability' are as straightforward as their ubiquity suggests, yet my task is to explore what urban practitioners make of these terms in the context of their everyday professional practice. Exploring the interconnections between practitioners' various roles was important so I chose to ground my research, quite literally, in a particular place.

Figure 8: Christchurch, New Zealand

(www.christchurch.org.nz)

Located on the east coast of the South Island, the city of Christchurch was ideal in a number of respects: As New Zealand's second largest city with a population of approximately 325 000 people,[31] it is more typical of other New Zealand cities than Auckland which has a substantially larger population of one million[32]. The City Council has, or certainly has had in the past, a stronger social orientation than many other local authorities in the country and Christchurch is sometimes called 'the People's Republic', though it is more commonly

[31] The greater region has a population of approximately 800 000 people.
[32] This figure combines Auckland, Waitakere, Manukau, Rodney and North Shore. Wellington's population (if one includes the Hutt and Porirua) stands at about 330 000, Hamilton's at 125 000, Dunedin's at 121 000, and Tauranga's at 100 000.

referred to as ‘The Garden City. [33]

Figure 9: The Garden City

(www.christchurch.org.nz/PhotoGallery)

As a regional centre with a population of approximately 400 0000 people it builds on New Zealand’s traditional agricultural industries, and, in the last decade, larger-scale corporate dairying. Yet it is also connected to the global economy via more recent knowledge-based enterprises, such as electronics and information technology.[34]

[33] Christchurch has won a number of international awards based on its Garden City image, including the Outstanding Garden City in 1996 where Christchurch was chosen over 620 international competitors. Christchurch was also the Overall Winner of the Major Cities Nations in Bloom in 1997 to officially become ‘the Garden City of the World’. High levels of infilling have no doubt contributed to the city’s lowered success rates in this regard over the last decade, but it is still described as very beautiful.

[34] Interestingly enough, whilst Christchurch has not had a great deal of recent success in Garden City awards, the City Council did win a 2006 Performance Excellence Study Award in the local government sector. These awards ‘recognise *business achievement* and performance against the international criteria’ (CCC media release, 2006, emphasis added).

Urban form

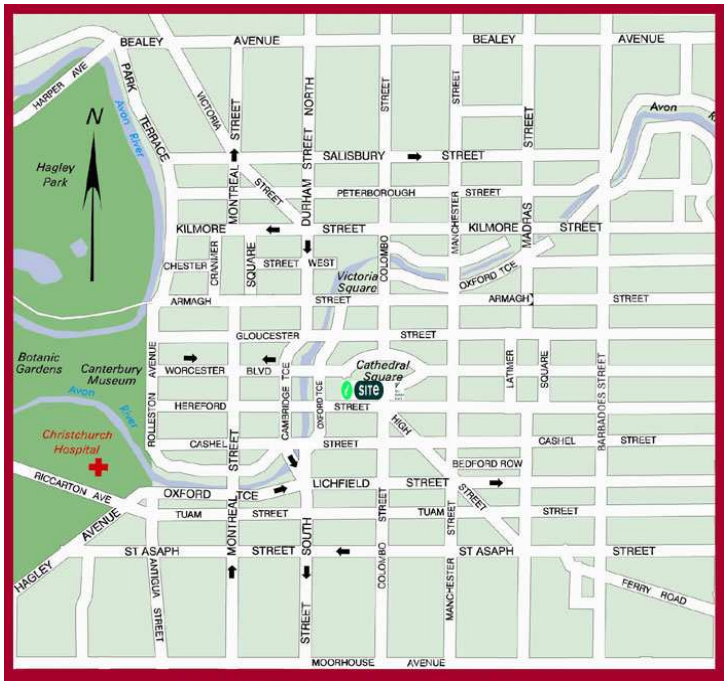
British colonists established the city in the mid 1800s according to careful plans that guided both physical form and social composition. The Canterbury Association, under the auspices of Edward Gibbon Wakefield, aimed to transplant a selective portion of British society into this new colony on the other side of the world. Consistent with his vision of Christchurch as a compact, agricultural settlement, would-be purchasers of the newly apportioned rural lots in what was to become Christchurch had to be members of the Church of England and be of 'good character' (Rice, 1999, pp.12-13). The Canterbury Association's plan was to 'set an example of a colonial settlement, in which, from the first, all the elements, including the very highest, of a good and right state of society, shall find their proper place' (in McIntyre, 2000, p.86).

The physical form of the city was influenced by new surveying techniques which allowed for precise parcels of land, of a quarter acre, to be laid out in a uniform grid-like pattern. These sections (lots) were sold at 'sufficient price' to raise the revenue necessary for schools, churches and other public works. The price also ensured that those with limited means could be excluded. The city was thus a manifestation of economic interests, moral ambition and social manipulation. The ownership of a home on a section large enough to eliminate any lingering memory of England's industrial cities were ideals that heavily influenced the city's development.

Also in a general and lasting sense, Pawson (2002, p. 201) has noted that the colony's fledgling towns, including Christchurch, 'encapsulated and symbolised the taming of the "howling wilderness"'. Correspondingly, rural areas were to look 'extremely controlled and tidy' to indicate sovereignty over nature (Egoz, Bowring and Perkins,

2006). This was not only applied to the bio-physical environment, but could be extrapolated conceptually to include the indigenous Maori who were also subjected to manifold attempts at civilisation, though not without more 'prolonged and effective resistance than standard sources reveal' (ibid). Early colonists' delight in the modification and cultivation of their surroundings had some interesting results, often making urban inhabitants more rather than less vulnerable to the vagaries of flood, earthquake, fire, storms and other 'natural' phenomena (ibid). Thus, it has already been noted that the separation of society form the wider environment can be unwise, even dangerous.

Figure 10: Central Christchurch Framed by the Four Avenues

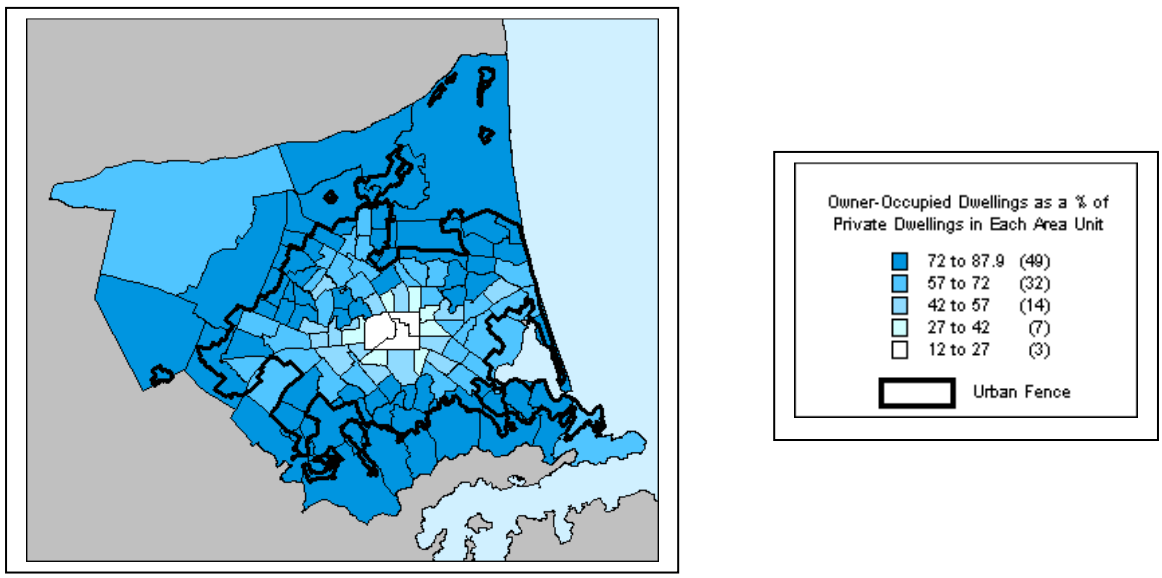


(www.christchurchnz.net/canterbury/ChchMap)

Though this severance of the rural/urban and nature/culture arguably remains, and may even be stronger (Swaffield and Fairweather, 1997; Newton, Fairweather and Swaffield, 2002), other aspects of New Zealand's urban areas have undergone

significant change. Though still high by international standards, levels of home-ownership in Christchurch (and the rest of New Zealand) have fallen dramatically over the last few years. Just over 71 per cent of Christchurch's homes were owner-occupied in 1991, but this figure had fallen to 65 per cent by 2001 (CCC, 2004). Census figures from 2006 are not yet available but studies undertaken by private research groups suggest this downwards trend has continued with the decrease in home ownership attributed to a national drop in housing affordability (Massey University, 2006; Demographia, 2006). As shown in the figure below, home ownership is higher in the outer suburbs (as high as 90 per cent in some cases) but the rates are lower among Maori, Pacific Islands people, single parent families, people on low incomes and those in the 25-39 years age bracket. In particular, sympathy for this last group of those of child-bearing age has raised public awareness of the housing affordability issues in New Zealand and has led to significant debate around land supply and zoning mechanisms in urban management.

Figure 11. Distribution of Home Ownership Rates in Christchurch



(www.ccc.govt.nz/publications/CityProfile/2001/HmOwnrshp.asp)

There have been substantial changes to the city's physical form as well. The compact agricultural settlement has given way to an urban area covering a fairly substantial 45,240 hectares of land with the same kinds of low-density residential areas that characterise much of urban New Zealand. Dwelling densities are much higher in and around the Central Business District. The average residential density with the four avenues that frame the CBD is 17 dwellings per hectare and 9 dwellings per hectare in the suburbs (CCC, 2004). The types of dwellings found in the city has also changed. The quarter acre section or lot has become something of a rarity owing to the City Council's Canterbury Regional Planning Scheme, implemented in the mid-1980s, of urban 'containment' policy based around green belts at the city's periphery. More recently, the Christchurch City Plan, which is a requirement of the Resource Management Act (1991), speaks of 'urban consolidation' which relies primarily on infilling. Infill housing[35] is one means of consolidating urban form by increasing housing densities within existing residential areas. The city is thus a mixture of medium density housing and commercial properties within the CBD framed by four avenues, with housing densities decreasing as one moves towards the periphery.

Grounding the research

While the city of Christchurch provided a suitable general location within which I might ground my study, three issues around urban planning, management and form provided conceptual focus. The first of these was The Southwest Area Plan which covered an established part of the city at the urban edge experiencing rapid new growth. The second topical issue was the advent and development of The Greater

[35] Infill housing, as defined by Plew in a study for the Christchurch City Council (1999, p.1), is 'one or more new townhouses built behind, in front of or beside an existing older house…[or] where the original older house has been demolished'.

Christchurch Urban Design Strategy; an attempt by the five local councils (comprising the now defunct Banks Peninsula District Council, the Selwyn and Waimakariri District Councils, the Christchurch City Council, the Regional Council (Environment Canterbury)) and Transit New Zealand to develop and implement a strategic plan for the Canterbury region based on a series of four growth options and scenarios. Both the Southwest Area Plan and the Urban Design Strategy can be seen as attempts to resuscitate the kind of strategic planning that had fallen from favour in the mid-1980s Finally, the Amendment to the Local Government Act (1989) and the subsequent requirement for Long-Term Council Community Plans was still too new to serve the purpose of grounding my research, at least in the initial phase, though it did inform the later stages of my research.

The Southwest Area Plan

The Southwest Area Plan was first mooted in 2003 and appears to have been used as something of a pilot for the more ambitious Greater Christchurch Urban Design Strategy which followed. The SWAP, as it is known, was based on a number of 'technical studies' which addressed key issues facing the area. These included: transport and the capacity of the transport network; protection of the quality and quantity of ground water, surface water, springs management and flooding; the ecology of the aquatic environment; the impact of land use change upon ground water; cultural issues; open space and landscape values; land contamination; versatile soils; and establishing 'sustainable' community facilities and focal points.

The City Council consulted the public about the Plan in March 2004 with a small-scale questionnaire (66 respondents) constituting a significant part of this process. Of

these respondents 80 per cent held negative views about the way development had been (mis)managed in the area. Aspects of their area that respondents saw as under threat from this 'lack of planning' included the rural atmosphere, access to the city and local facilities, green space and community spirit.

The initial impetus behind the development of the plan and its implementation appears to have slowed since its inception in 2003. While it has provided a useful focus for my research in terms of data collection, particularly the selection of certain interviewees, its relative importance appears to have been subsumed by the Greater Christchurch Urban Design Strategy and the Long-term Council Community Plan.

The Greater Christchurch Urban Design Strategy

The Greater Christchurch Urban Design Strategy is a response to a perceived need for greater coordination and cooperation between the six local and regional councils and Transit New Zealand. Calling on local leaders and urban design experts, a series of four options was devised with each accommodating the predicted population growth of 120,000 people by 2041 in different ways. The four options (and the manner in which they are described and conveyed) are worthy of a fairly detailed examination. 'The Issues', as outlined in the Urban Design Strategy booklet *So Many Options, Which Will You Choose?* (2005), are organised around four main themes:

- Land use and housing

…Where the Forum expects population growth and asks the public whether they would like the city to go out or up. Some implications for travel times, shopping and housing forms are presented.

- Transport

…Where traffic congestion is outlined as threatening the environment at 'increasing cost'. Traffic projections are for a 40-59 per cent increase.

- Community Identity

…In which urbanisation is making an impact on the character of our communities. 'Should we be concerned about old character homes being demolished to make way for blocks of two – three storey apartments?' we are asked.

- Natural Environment

…Open spaces, natural habitats, water, natural hazards and climate change are discussed.

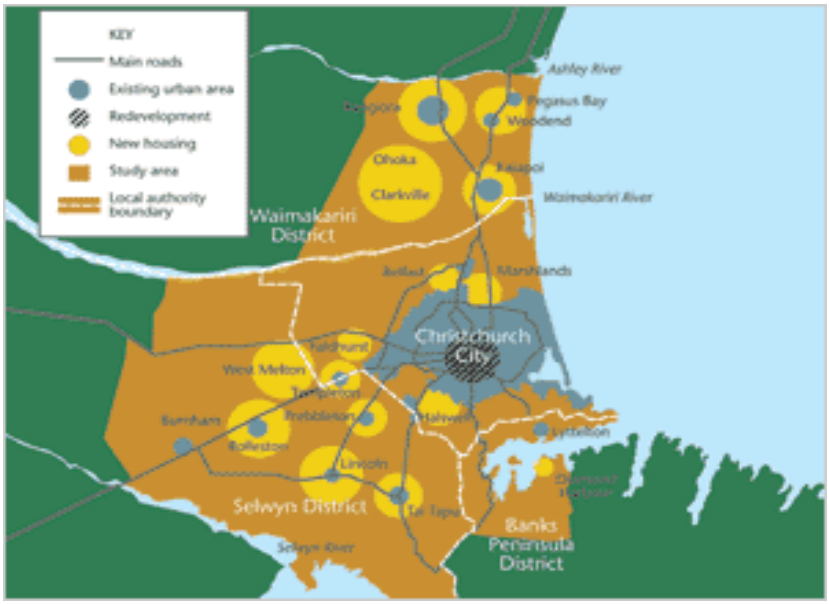
The website (www.greaterchristchurch.org.nz) also lists a number of trends that need to be considered, comprising population growth placing new demands on housing with a further 62, 000 dwellings required; an aging population; small towns are getting bigger and may even double in size; traffic congestion is rising and may increase by 40 per cent by 2021 and 320 per cent by 2041; water quality and quantity are being threatened with pollution found in 50 per cent of the shallow wells within Christchurch City; poor development is impacting on people's sense of place; infrastructure is already taxed beyond its limit in some areas and will need further upgrading; and councils and communities need to work together**.**

Keeping these considerations in mind, readers are asked to evaluate four growth management options. The first of these is 'Business as Usual' which is outlined on the website (www.greaterchristchurch.org.nz/Options/) in the summary in the following way:

- Development is between Christchurch and rural towns, and southwest to Rolleston and Lincoln, around Lyttelton Harbour and north of the Waimakariri River
- 21% of new housing is urban renewal (13,000 townhouses and apartments) and 79% in new subdivisions (49,000 new houses)
- Farmland/open space required for housing 120,000 additional people is 4,920 hectares equivalent to 26 Hagley Parks
- 320% increase in congestion by 2041/500,000 people, commute takes 55% longer (a 30 minute trip today would take 47 minutes in 2041)
- To avoid traffic congestion increases, new road construction, widening / maintenance costs $2 billion by 2041 ($206 per household annually)
- Walking, cycling and public transport are poor alternatives to driving
- Infrastructure for new subdivisions costs $560 million by 2041
- Increased water demand
- Threats to natural landscapes, such as the Port Hills, as development spreads

For those who might experience problems digesting this wealth of information in this format, a map depicting the anticipated layout of such a city is also provided (see Figure 12), however, this bullet point summary suggests that the ‘facts’ can ‘speak for themselves’.

Figure 12: Business as Usual Map for 2041



(www.greaterchristchurch.org.nz/Options/BusinessAsUsual)

The other three options are presented in a very similar in style despite a vastly different content, with each option varying according to where growth is to be directed. The map that accompanies Option A, for example, shows growth as concentrated largely within the city of Christchurch and a few existing towns.

Figure 13: Option A Map for 2041

(www.greaterchristchurch.org.nz/Options/A/)

Members of the public were invited to comment on these options during April and May 2005, and over 3,250 submissions were received. This was a record for local body consultations in Canterbury. The vast majority of submissions – 96 per cent – were in favour of growth being directed into existing towns and urban areas, rather than towards greenfield development and further sprawl.

In terms of my research, both the Southwest Area Plan and the Greater Christchurch Urban Design Strategy proved very useful documents. They not only helped me to ground my study in a particular place, they also provided an 'official record' of the issues participants saw as significant. These plans also signified another issue that was to become important in light of the interview data outlined in later chapters; this may be described as a technocratic discourse heavily reliant on statistics and numerical data. This approach, combined with the emphasis on consultation, indicates an uneasy tension between what Ericksen, Berke, Crawford and Dixon (2003, p. 30) describe as 'rational' and 'participatory' approaches to planning. This has consequences for the rhetoric that characterises these plans; while they may indicate return to the kind of strategic planning that was largely abandoned during the 1990s, the language used marks a distinct shift away from the *moral* content that characterised New Zealand's early urban planning and development towards a *techno*-rationality. This has implications for the 'DAD' model of consultation which often utilises a 'Decide, Announce, Defend' strategy (Twyford, in Ledbury, 2003, p. 8) and can employ 'experts' in a somewhat antagonistic relationship with 'lay people' (Brooks, 2006). In order to understand the significance of this transition and its implications, it is important to contextualise these plans within a more substantive overview of New Zealand's wider political, legislative and planning climate.

New Zealand's Urban Planning History

Until recently, New Zealand's approach to urban planning essentially reflected that adopted in Great Britain though it must be said that our colonial past was, if anything, even more heavily informed by romantic versions of the rural and a strong anti-urban sentiment. This has its roots in the timing of colonial settlement which occurred during the period of rapid industrialisation in England, a time which saw appalling living conditions for the majority of urban dwellers there (Meacham, 1998). Early urban planners emphasised both home ownership and section size[36] because as Freestone (1985, p.15) noted 'Culturally, the English country cottage was the model dwelling and if immigrants could not be yeoman farmers then they could at least tend suburban gardens'. Home ownership and sizeable sections with detached homes were not only thought to ensure physical health but moral probity as well. Malcom Mason, for example, in his position as head of the Health Department, newly established in 1904, wrote:

> Small houses and no gardens mean ill health, discontent, and a lack of interest in the home. Pride of domicile is one of the most powerful factors in the family life, and absence of it is accompanied by much that is antagonistic to the physical weal of the State…Between the mental effect of living in a small house with a horizon bounded by the backs of similarly uninteresting edifices, and living in a cottage with a flower garden in front and a vegetable garden behind, there is a very great deal. The public house and the theatre lose much of their attraction, while the effect on children is of the greatest moment (in Tennant, 2000, p. 28).

This theme is reiterated in later documents with Isaac and Olssen (2000, p. 110) stating that an examination of the proceedings of the Ministry of Health conference in 1919 revealed 'a broad consensus that saw in slums the cause of social pathogens'.

[36] Typically these were a quarter acre.

Until the mid-1980s the State, either by economic assistance programmes such as the Advances to Workers Act (1905) or state (public) housing provision, actively encouraged both owner-occupation and detached dwellings on large sections. The effects of unregulated land subdivision became evident in the early 1920s and this led to the Town Planning Act of 1926, its amendment in 1929 and, eventually, its replacement by the Town and Country Planning Act in 1953.

The administration of these planning functions was largely the responsibility of local government, but funding and planning priorities were still determined by central government. The State's emphasis during this time was to reverse the economic decline that was the result of the erosion of secure European markets for New Zealand's agricultural products. Subsequently, economic goals were vigorously pursued, often at the expense of bio-physical environmental integrity. Buhrs and Bartlett (1993, p. 90) noted that central government's involvement in the ownership, allocation and management of resources led to a kind of 'State vandalism' which may have helped address the trade deficit but did little for the state of the bio-physical environment. Though the rubric of 'sustainability' might be relatively recent, finding a balance between these two goals of economic growth and bio-physical environmental well-being has a much longer pedigree. The tensions between the two are illustrated rather very well in this excerpt from *The Heron's Beach*, written in 1923.

> One of the Chief problems of our time is the reconciliation of civilisation and the wild, of business and beauty. We have to overcome the extremists of both sides, those idealists who dwell in the clouds and those 'whole-hog' civilisers who would spoil everything that does not conduce to financial gain…There is an ancient rural myth that one tiny part of every field or garden should be left untilled for the fairy people, who will not dwell

> where spade or pruning hook have been. It seems as if there can be too much of cultivation and efficiency …the brownies' portion should be well guarded. In a young country like this we have inherited riches that are not for our generation alone, but belong as fully to those who come after us. Hurst (1923), from 'The Heron's Beach' (in Lochhead, 1994, preamble).

Though New Zealand had an established tradition of conservation and preservation (see Lochhead, 1994; Star and Lochhead, 2002), concerns for the environment were popularised in the wake of specific logging, mining and electricity generation projects, such as that built on Lake Manapouri in Fiordland which sparked the 'Save Manapouri' campaign (Wheen, 2002). Protests here in New Zealand around such matters reflected an increasingly vocal international environmental movement that had gained strength from various publications including Carson's *Silent Spring* (1962), the Club of Rome's *Limits to Growth* (Meadows and Meadows, 1974), and Schumacher's *Small is Beautiful* (1973) which questioned blind adherence to economic growth. Greenpeace started to make its presence felt, particularly in urban areas.

Since 1984, a significant year for New Zealand, almost all aspects of life in New Zealand have experienced rapid change of an almost unprecedented nature. Some of this occurred as a result of environmental lobbying and calls for greater public participation in decision-making but more influential, however, were those demands from the political right for conditions that favoured private enterprise, competition and market efficiencies. Surprisingly, these calls had their most dramatic effect on the 'schizoid' Fourth Labour Government elected in 1984 (Ericksen, Berke, Crawford and Dixon, 2003, p. 5). In contrast to the earlier era of central government-led 'Think Big' projects designed to stimulate the economy, 1984 marked the beginnings

massive restructuring and state withdrawal from the economic and social sectors. This 're-regulation', argued Le Heron and Pawson (1996, p. 5), was justified 'exclusively by economic analysis and theory' based around increased competitiveness, the free market and investor autonomy'. In the new, neo-liberal economy such measures as the State's agricultural subsidies were reduced or abolished, import tariffs and other protective measures were removed, competition was encouraged, and a far greater emphasis was placed on individualism and private enterprise. It is within this context that environmental lobbyists had to work.

The Resource Management Act (RMA) 1991

To facilitate private enterprise and free market economics within the confines of bio-physical environmental limits, the State (under the new National Government of 1990) introduced a new, innovative piece of legislation: The Resource Management Act (1991). The 'effects-based' Resource Management Act replaced the more prescriptive and interventionist 'activities-based' approach of the Town and Country Planning Act (see also Wheen, 2002). The Resource Management Act has been called effects-based because it is primarily concerned with managing the bio-physical environmental *consequences* of activities rather than governing the activities themselves. Within certain parameters so long as the bio-physical environmental effects of an activity are 'no more than minor', that activity is permissible. Under the Resource Management Act potential subdivisions, for example, need only meet minimum size requirements and have a minimal effect on the environment. This is very different from the Town and Country Planning Act where proposals for rural subdivisions, for example, had to establish that the subdivision would be an economically viable concern or an 'economic unit' and have the social impacts

assessed. As Jackson (1996, p. 173, emphasis added) noted in his chapter in the *Handbook of Environmental Law*, 'in urban areas subdivision becomes a *technical matter*, where the effects on amenities that follow subdivision can be carefully controlled by conditions imposed upon subdivision'.[37] This new flexibility was supposed to reduce processing times and allow for increased innovation and entrepreneurship and is consistent with the generally more liberal attitude expressed by central government at the time.

The Resource Management Act simplified or eliminated more than 50 laws and 20 major statutes relating to the environment and is now the primary piece of legislation governing resource use and environmental management in both rural and urban areas. The stated purpose of the Act 'is to promote the sustainable management of natural and physical resources' where sustainable management is defined as:

> Managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while-
>
> a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
>
> b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
>
> c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment (Part II, Section 5, *The Resource Management Act*, 1991).

Though a casual reading might suggest this wording to be reasonably explicit, there have been numerous critiques of this definition. As Grundy (200) noted, it alludes to the recommendations of the World Commission on Environment and Development

[37] This book, and this chapter in particular, was recommended to me by a planner with the City Council.

around equity and distribution without giving a clear signal as to their exact role. Likewise, the Treaty of Waitangi is specified as needing to be taken into account without clear instructions on how this should be achieved. Grundy points to a range of interpretations of the Act, some of which indicate a need for the balancing of needs versus an identification of bottom-lines. There are also 'narrow' versus 'holistic' interpretations (p. 69). Cocklin (1996) has pointed out that given these ambiguities there was, and still is, plenty of scope for a range of interpretations and applications of the Act. These contested meanings have been tested in the Environment Court and, as a corollary, a body of case law now exists around the Act.

There are a number of agencies and authorities involved in the implementation of the Act. The Ministry for the Environment and the Department of Conservation represent central government, and the Office of the Parliamentary Commissioner for the Environment constitutes an independent and often vocal organisation with an environmental focus. Hands-on, day-to-day implementation of the Act, however, falls mainly to regional, district and city councils. In terms of urban management, one of the more significant consequences of the Act is the requirement that local authorities prepare Regional, District or City Plans. While the Regional Plans tend to focus on specific issues, such as coastal management or air quality, District and City Plans establish policies and rules that the council will use to regulate resource use in their areas of jurisdiction (*Getting in on the Act*, Ministry for the Environment, p.6). Under the provisions of Section 75 of the Resource Management Act, local councils must identify any significant resource management issues and objectives that relate to their city, their reasons for adopting those objectives and policies, and the methods that will be used to implement the policies (Christchurch City Plan, 1995, p.1). In effect, these

plans lay out parameters which have been determined by assessments of the bio-physical environment's capacity to support a given activity whether that be residential subdivision or the location of commercial activities in residential areas and so on.

Proposals for rural and urban land use activities need resource consent and public notification is required in cases where the proposed activity might have a 'more than minor' effect on the environment, or might 'adversely affect' someone who hasn't given their approval. Local authorities are responsible for the processing of resource consents and they can also decide if the general public needs to be informed of the proposal. If a proposal is publicly notified anyone may make a submission. This addresses certain obligations around consultation and participation, but as only approximately 5 per cent of all resource consent applications are publicly notified (*Getting in on the Act*, Ministry for the Environment, p.7) the opportunities for public input on new developments are somewhat curtailed.

This effects-based approach to resource management is not without its detractors. Freeman (2004, p. 311) pointed out that the Act:

> offers no guidance on critical sustainability issues such as economic development, social development, justice and equity…or even fundamental environmental issues such as energy generation and efficiency. Neither does it offer guidance on key planning issues such as forward and strategic planning. In fact, such issues are clearly barred from consideration in planning decisions, where the focus is on more precise land use matters, specifically the environmental effects on land, air and water.

This tendency to bypass these issues and more focused concerns, such as the siting of community care facilities, has led to calls for the Resource Management Act to be situated within broader socio-cultural considerations (Gleeson and Memon, 1997) and

for the Environment Court to resist the narrow interpretation of the Act favoured by 'New Right interest groups' (Memon, 2002, p. 299). Other critiques expose some of the contradictory and fundamentally opposed interests that underpin the supposedly neutral legislation (see Skelton and Memon, 2002). Some see the legislation as going too far in protecting the environment at the expense of the economy, whilst others say it does not go far enough and that it is largely toothless.[38]

Of particular relevance for my research is the criticism directed at the Act with regards to its treatment of urban areas. Doeksen and Swaffield (1993, p. 133), for example, pointed out that while the intellectual antecedents of the Act are obvious in its title, its 'physical and locational scope is less clear' and that 'the greatest concentrations of human activity in the environment – the town and the city – are all but invisible'. Likewise, Perkins and Thorns (1999) also argued that 'Defining human social and community life naturalistically, as part of the bio-physical environment, or of ecosystems, is reductionist and ignores the significant social theoretical tenet that cities are a significant product of human culture'. A report from the Office of the Parliamentary Commissioner for the Environment (1998) made a similar point. The report stated that:

> New Zealand faces some real challenges to the sustainability of urban ecosystems. These issues are much wider and cannot be properly addressed by generic environmental management approaches and the management of effects via the Resource Management Act 1991. There is a compelling need to focus on improving the efficiency of resource use and integrated management of the urban environment, with people and communities being recognised as core elements of that environment (1998, p. 4).

[38] The stymied Meridian energy-generating hydro scheme for the Waitaki River and recent 'Save the Snails' from the miners furore in Tasman District are good examples of the former argument. The lack of prosecution and penalty in the face of demonstrable environmental damage provides good ammunition for the latter.

While the Parliamentary Commissioner for the Environment applauded the Resource Management Act for recognising the 'importance of the goal of sustainability' his report also pointed out that the Act makes it difficult to predict, manage and regulate the cumulative effects of activities, particularly as they affect local residents in urban areas. The Commissioner considered that input from residents and councils to be a site of potential conflict because the 'intent of the Resource Management Act can be thwarted by councillors and staff who ignore community preferences for resource management' (Parliamentary Commissioner for the Environment, 1998, p.3). This conflict can be exacerbated in urban areas because of propinquity and density. As a result the Commissioner encourages readers of the report to consider a sustainable *urban* development approach that involves 'integrating the requirements of environmental management, social equity and economic opportunity into all decision making' (in Hughes, 1999, p.8). The Commissioner conceded that this may not sit well within the current political climate, however. The report points out that, in the view of the European Commission Urban Environment Expert Group at least, 'Sustainable development will only happen if it is explicitly planned for. Market forces or other unconscious and undirected phenomena cannot solve the serious problems of sustainability' (Parliamentary Commissioner for the Environment, 1998, p.32).

While some applaud this approach, others obviously see it as requiring too much intervention from the state. In his report *The Extent to which Regulatory Control of Land Use is Justified Under the Resource Management Act*, neo-liberal commentator and advocate McShane (1998, p.49) maintained that:

> The Act was intended to replace controls based on the notion that local councils should indulge in social and economic

> planning, with controls which focused exclusively on environmental effects. In practice, District Plans continue to promote social and economic planning and many politicians and bureaucrats continue to insist that this is their right and proper duty.

According to McShane, certain clauses had been added into the Act in order 'to remind councils and others that they should not unduly interfere with the operations of the market which is the most efficient means of allocating resources' and he condemns references to such things as 'aesthetic coherence' in Section 79(c) of the Act because, in his view, this has 'done more to dilute and diffuse the environmental focus of the legislation' (p.40). He believes that this has allowed councils to engage in practices of undue interference and control.

This led to passionate and prolonged debate about what constitutes core business for local government. As Nixon (a former senior planner with the Christchurch City Council) pointed out, 'Councils have to come to terms with the reality that selecting growth options on the basis of social and economic outcomes and grand visions of what's best for the people, are past, certainly using the Resource Management Act and District Plans as a vehicle' (1997, p.24; see also Perkins and Thorns, 2001). While local authorities throughout New Zealand have interpreted and used the Resource Management Act in a number of ways, often writing District and City Plans with diverse emphases, in general, among New Zealand's larger urban local authorities[39] 'social and economic planning considerations have largely been relegated to the margins of the [district] plans, if they have been considered at all' (Perkins and Thorns, 2001, p.650).

[39] A possible exception is the Waitakere District Council which has tried to assimilate a range of issues within its Plan.

The Resource Management Act Amendment (2005)

Ericksen, Berke, Crawford and Dixon (2003) point to a number of reasons why the Resource Management Act (1991) failed to deliver on its initial promise including, for example, problems that arose from central government's implementation in terms of capacity-building. As a result, councils were torn in their understanding and application of 'sustainable development' and 'sustainable management', and in the nature of their relationship with Maori. There was also a 'lack of policy direction' on matters of national importance (ibid, p. 287). Lack of cooperation between regional and local or city councils further complicated matters. The result of these factors was a generally poor set of the plans that were a requirement of the Resource Management Act. Much of the optimism from business and green interests that was directed at the Act in its early stages dissipated in the face of continued environmental degradation and lengthy processing times for even the most basic of resource consent applications (see, for example, Fisher, 2003 for a Business Roundtable perspective).

In 2004, the Government subsequently announced a review of the Act which was to focus on ways of improving 'the quality of decisions and processes whilst not compromising good environmental outcomes or public participation' (Ministry for the Environment, 2006). More specifically, the review was concerned to get better and faster decisions on resource consents; provide a means of working with councils when decisions are too big for local decision-making as is sometimes the case in matters of national importance; and provide more national leadership through policy statements and standards.

Among the standards are fourteen pertaining to air quality and a further series are being developed around contaminated land, raw drinking water, telecommunications, biosolids and land transport noise. The Ministry is also preparing a set of policy statements directed towards biodiversity, electricity transmission, and electricity generation. According to the Ministry's website, these amendments 'provide for absolute standards to be set where appropriate, ensuring consistency when this is required' (Ministry for the Environment, 2006).

Reactions to the Amendment have been less than favourable with the business community continuing to be frustrated by lengthy processing times. Interest groups concerned with protecting the environment are similarly frustrated by the apparent subservience of the Act to business interests. At another level, little has changed with regards to concerns about the Act and the urban environment and the continued focus on the bio-physical environment in the Amendment is cause for concern. In short, it is difficult to find members of the wider public openly applauding the Resource Management Act Amendment.

The Local Government Act

Whilst central government has picked up on the consequences of the lack of a clear vision around the Resource Management Act, the need for direction has to be balanced against greater autonomy for local authorities. In order to implement the Resource Management Act (1991), central government devolved responsibility to local authorities and this, in part, provided the rationale for the amendment to the Local Government Act in 1989. This Amendment empowered local authorities to

oversee such diverse activities as allowing for trade to occur on a 'competitively neutral basis', directing local services and facilities, the preparation of annual plans and financial strategies. They are also responsible for recognising the 'identities and values of different communities' as well as the 'definition and enforcement of appropriate rights within those communities' (Parliamentary Commissioner for the Environment, 1998, p.7). Territorial authorities are also called upon to provide the means by which local people may participate in local government and local government decisions.

Memon and Thomas, S. (2006) and Memon and Thomas, G. (2006) contend that these reforms of the late 1980s were largely consistent with a neo-liberal political agenda, whereas more recent reforms are more diverse in terms of their objectives. The most important of these reforms was the Local Government Act Amendment of 2002 which saw the inclusion of a clause to empower local authorities to respond to community needs; a new focus on identifying and promoting social, cultural, economic and environmental well-being and 'sustainable development'; and a requirement that councils prepare and implement strategic 10-year community plans. This is supposed to encourage greater public engagement with political processes at the local level.

One of the key tools in achieving these goals is the requirement for Long-term Council Community Plans. The local authority's role is to facilitate community identification of desired outcomes around social, cultural, economic and environmental well-being. The council is then to report back to the community at least once every three years outlining progress made towards these desired goals. According to the City Council's website, the Long-term Council Community Plan is:

> Our map and our guide on how the Council, as an organisation, contributes to a successful and *sustainable* future for Christchurch. It contains clear instructions from the Council [sic] elected members on how to run our City with a long-term focus.
>
> It describes everything the Council does for the people and the environment of Christchurch (activities, services and capital works programme), and what it costs. It is essentially, the Council's 'contract with the community' and therefore a record of the Council's intentions that the community can use to gauge the organisation's performance and results.
>
> It also provides a record of the Council's intentions which the community can use to gauge the organisation's performance and results (ccc.govt.nz/LTCCP emphasis added).

The vision for Christchurch, as outlined in the Plan, centres round five themes: a place where people enjoy living, a place of inclusive communities, a thriving, healthy environment, the most attractive city in New Zealand, and a global economic destination.

While the Plan therefore has the potential to off-set what some see as the strong bio-physical environmental focus of the Resource Management Act[40], Memon and Thomas, S. (2006) and Memon and Thomas, G. (2006) question the extent to which the purpose of the Local Government Act Amendment will be fulfilled. They point to problems with the capability and commitment of not only local authorities, but also central government and community agencies in achieving these goals. Furthermore, and of particular relevance for my own work, although the Act adopts the World Commission on Environment and Development's definition of sustainable development, none of the difficulties associated with the concept that I have pointed

[40] Whether this 'strong environmental focus' exists, or is strong enough, is contested and this plays a significant role in my research results and subsequent discussion.

to in earlier chapters are resolved. Though too strict a definition negates the purpose of the sustainable development approach, which is to let local context inform the operative meaning, the lack of clarity surrounding the term begs some kind of national debate.

These difficulties combined point to hurdles which may severely impede communities' abilities to implement their visions, particularly around diverse socio-cultural aspirations which do not necessarily sit well in the climate of standards and 'objective limits' established by the Resource Management Act and its amendment. It is, furthermore, questionable whether certain commercial interests will support attempts by local authorities to combine social and economic factors in their decision-making. Under a critique based around excessive council spending and profligacy it is likely that some business interests will resist strongly attempts by local authorities to intervene in wider urban affairs.

Chapter Six: Results – A Prelude

Some of the material in my methodology chapter, particularly Law's (2004) work around multiplicity, methods assemblage and inscription devices, indicates a need for an explanatory preamble to the results presented in the following chapters. If, as Law contends (2004, p. 143), methods are performative in that they produce rather than uncover realities, it become important – even necessary – to be explicit about some of the conditions underpinning my own results. In this chapter I outline my research approach and situate myself as part of the research process.

Multiplicity and Discourse

The idea of the method assemblage is Law's response to the idea of multiplicity which, in turn, depends on a recognition that 'realities may change their shape or become more or less definite' (Law, 2004, p. 14). This malleability was, for me, clearly evident in results of my earlier work on infill housing which was considered by some to be the most suitable way of achieving a sustainable urban form (as seen in the compact city literature) but was, for others, the antithesis of both bio-physical environmental well-being and established cultural preferences for lifestyles associated with low-density living. People at both ends of this argument used the concept of sustainability to justify their position. This research left me wondering how 'the truth' around this topic had become so fluid.

Law's work alerted me to the idea that seeking the objective truth about urban sustainability is no longer possible as an academic exercise, and this awareness raised a whole new set of questions: If a true reality is not objectively available, nor does it

seem completely arbitrary. So what are the mechanisms by which we might identify and evaluate these various strands of multiplicity? Law suggested that we achieve this by attending to the 'enactments of relations that make some things …present "in-here" whilst making others absent "out-there"' (2004, p. 14).

The apparent arbitrariness of multiplicity is negated by various processes of *amplification* clearly evident in the discourse surrounding urban sustainability. These processes can be quantitative, as when constructs appear repeatedly in the data, thus generating particular themes around which consensus or conflict can be identified. Or they may be qualitative, signposted by tears, 'objectivity', hysterical laughter, intensity, dogged and enduring determination, or exhibitions of fanaticism.

On the other hand, allegory, as Law noted, can alert us to what is absent, though, in the case of my research, this absence was generally brought to my attention by comparing the theory and practice of urban sustainability. What, for example, was the place (if any) of the lived-in-ness of Thirdspace (Soja, 2000) in the Greater Christchurch Urban Design Strategy? How do the three strands (social, economic and bio-physical environmental) of orthodox definitions of sustainability come together in the city (or don't they)?

Inscription Devices

Inscription devices 'out there'

Latour and Woolgar's concept of inscription devices (see Law, 2004, pp. 19-24) refers to the mechanisms, including machines, by which realities are constructed. In terms of my own research, this is a useful idea on two levels. The first is to be aware

of the apparatus, tools and equipment that practitioners use to advance their own understanding of urban sustainability. These may include such things as pollution monitors, or less 'scientific' but no less effective means of constructing realities; observations like 'you used to be able to go out there any day and catch a fish, *but not any more*…' The meter, the counter, the fish, the observer (along with their possible deficiencies), and their place in the network that connects them, tend to melt away leaving mere statement of fact.

The interview schedule

The second level at which the idea of the inscription device was useful pertained to my own research approach. Whatever strategy I adopted would essentially 'make' my results and I would like, therefore, to outline my method in brief. Because my aim was to explore the interviewees' understanding of the term urban sustainability, it was important that I did not constrain, influence or pre-empt their responses with my questions or the order in which they were asked. In the introductory letter and/or initial telephone contact I typically outlined my project as an investigation of the main issues, opportunities and problems they, as urban practitioners, faced in their professional capacity. The 35 practitioners I interviewed comprised architects, Residents' Association Representatives, Regional and City Council employees (including planners, community advocates and so on) and councillors, real estate developers, and representatives of other local urban interest groups. I also interviewed several prominent central government politicians and civil servants. Many of my interviewees (CCC employees, architects, group housing representatives and so on) played a part in the development of Christchurch's general urban form. In terms of Resident's Association representatives, real estate developers, Councillors, however,

geography – the Southwest of Christchurch in particular - guided the selection process. This allowed me to explore area-specific issues, such as the most appropriate form of residential subdivision, traffic management, the use of recreation spaces and the like, from different points of view.

If 'urban sustainability' was an important part of their agenda, I reasoned the interviewees would likely introduce the topic in their own way. Though many of the issues they raised could conceivably fall under the rubric of urban sustainability, after three interviews none of the interviewees had explicitly used this term, nor had they mentioned sustainability more generally. After these three interviews I began introducing the term sustainability after the discussion of the main issues, and then I would instigate a discussion on the concept of urban sustainability. Though I did devise an interview schedule it was, more often than not, abandoned in favour of a very flexible, opportunistic approach. This is consistent with Prus' advice that ethnographic interviews be characterised by 'careful and receptive listening, open-ended queries, and extensive probing (1996, p.20).

Texts

Actual texts were also consulted: The Christchurch City Plan, The Southwest Area Plan, the draft Long-term Council Community Plan, The Greater Christchurch Urban Design Strategy, governmental and non-governmental publications. These included, but were not limited to, those from the Parliamentary Commissioner for the Environment, the Salvation Army, the Ministry for the Environment, the Ministry for Social Development, the Chamber of Commerce, the Resource Management Law Association, private research groups (such as Wendell-Cox consultancy, the New

Zealand Institute, the Centre for Housing Research Aoteroa New Zealand, the Centre for Research, Evaluation and Social Assessment, etc), local authorities and numerous other interest groups. I also spent time perusing various websites and promotional material, particularly that issued by the group housing companies. References to some of these texts are included in my results, whilst others served to inform my understanding of a range of issues broadly associated with my topic.

The city

The city itself can also be viewed as a kind of 'text' of sorts; not in the sense that it has an inherently fixed meaning that is uncovered, but rather as something to be interpreted and understood by its inhabitants. The notion that the cityscape is open to interpretation does not mean a random assortment of readings is likely, however, as this would deny the intersubjectivity of urban experience. In this sense, the city is perhaps better understood as an activity, or a performance, in which we take part. The products and processes associated with this performance is readily available for scrutiny, and in terms of my study, include the physical form of the city itself and its symbolic components as well as the activities themselves.

Chapter Seven: The Invisible Urban

Of all my results, one of the more surprising and most difficult to document, was the place of the *urban* prefix in urban sustainability. The urban aspect is interesting in that it was generally neglected, often entirely, and it is this observation that underpins my claim that this result was most difficult to document. As Law (2004) contends this is not necessarily a methodological failure, however; its intractable absence is actually very significant. Despite a growing number of publications and burgeoning literature devoted to urban sustainability, only two interviewees mentioned sustainability before I did (or rather, they referred to *un*sustainable practices) and none of the participants were first to use the term *urban* sustainability. Convinced that this absence of data was data in itself, I was alerted to the ways in which the city itself was constructed, in both a figurative and literal sense.

As outlined in the previous chapter, I generally began each interview by asking the interviewee about the main issues they thought the city (in relation to their profession) was facing. This generated discussion around a wide range of concerns; some of the more common were water quality and the state of the aquifers that naturally filter Christchurch's water, infill housing, greenfield development at the urban periphery and urban sprawl, new legislation affecting their practice, recreation facilities, funding for services and increased competition. 'Urban sustainability' was never used as a catch-all phrase for a combination of these issues, though depending on which definition one adopts, all of them could conceivably fall under this rubric.

The Least Sexy of Terms

If *urban* sustainability was never used, sustainability and sustainable development also suffered a similar neglect. In fact, the term was rarely invoked at all unless I introduced the term. The exceptions to this trend were members of two different urban interest groups who used the term with some regularity to describe *un*sustainable practices. The infrequent use of these terms could be due to a number of factors. In one instance, a prominent central government politician told me:

> I personally hate the label sustainability and it's not because of what it means. I just think it's a name that hasn't been taken up by the community and because of that it becomes like a mantra of some people onto other people. It's not something owned by the community and yet the concept behind it I love…. I love it because…Well parts are very frustrating and it's one of the most thoughtful jobs I've ever had and secondly it's not full of short sexy answers. It's actually quite a lot of weighing up. But you have to be smart enough to take people along with you. So you have to feed people stories or feed them …Start changing the mindset and that's why I hate to use the word sustainability. Because it's the least sexy term I have ever come across in my life. They don't even think it's about tree huggers. It doesn't even have that warmth to it. It's just a very cold term.

This politician was not the only one to dismiss the term as some kind of 'label'. Other interviewees dismissed it as 'a jargony word' that means very little (community advocate, CCC) or a 'boat' that the Christchurch City Council happened to be riding at the moment (real estate developer). Residents' Association representatives were, in general, most dismissive of the word, and my use of the term often prompted almost disgusted snorts or eye-rolling. These reactions are discussed in more detail later, but for now I would simply like to establish that although my readings of secondary data sources indicate that sustainability is an almost necessary component of funding or resource consent applications and promotional material, it did not appear to be a term used in everyday practice among these practitioners.

The City as the Antithesis of Nature

The interviewees were even less enthusiastic, knowledgeable or willing to engage with the urban prefix to sustainability. Only one interviewee from the Ministry for the Environment spoke with confidence and clarity about what might be called *the urban* in the sense Soja uses whereby proximal relations, dependencies and creativities are important. Indeed, the most common reaction was to ignore the urban altogether in favour of more focussed versions of sustainability associated with the bio-physical environment. The following excerpt from an interview with a former Christchurch local body politician is a good example that aptly demonstrates how sustainability is frequently divorced from the urban, even when the previous discussion was firmly centred on city functions and features, such as urban community facilities:

> Politician: Well I think it [Riccarton Racecourse] is a beautiful piece of land. We've got that wonderful market there on a Sunday. And if we do get this teahouse it will be a wonderful community facility. So I want the residents around the area to take a bit more of an interest in it… I hope they get as passionate about it and think about it as everything else. It's as important as the Port Hills. And this teahouse for me is a national icon to horse racing. Because it's the only one left.
> Interviewer: One of the things that I hear a lot about at university is urban sustainability…[3 second pause]. Does that mean anything to you?
> Politician: You know, I was born in Dunedin and we had a bach at Karitane, a crib [holiday home] as you call them down south. And you'd go over the fields with the dogs and have fun in the paddocks and…Kids today don't have that…wonderful experience of roaming around in the…environment like I did as a child. And I think that that's quite sad. And I believe that sustainability also means keeping our waters. Looking after our waterways and seeing that our aquifers are full. Wonderful filters. And so we have to look after it. So to me that means sustainability.

These sorts of comments illustrated that one of the systems of rules, to use Fairclough's (1995) terms, operating within the urban sustainability discourse was a

tendency to associate it with a model that is most closely aligned with ‘nature’ and ‘the environment’ and where the community and civic dynamics we had been discussing were discounted as lying outside the scope of this concept.

This division between town and country had two somewhat contradictory effects. As this next excerpt from an interview with a central government politician demonstrates, the ways in which going out into ‘the environment’ can inspire people to act in more eco-friendly ways:

> Suzanne: You said something interesting about people going and seeing weedy bits on the edge of the lake. It brings me to my urban question because in the urban environment we’re kind of…Well, what is urban sustainability?
> Politician: Well, people have got a huge problem on this issue. Let me tell you what happens in the life of a Minister for conservation of the environment. We get huge numbers of letters flooding in in January and February [the New Zealand summer months]. Because people from the towns go to the country and they all want it kept pristine out there in their favourite bays. They all want it kept… I do not believe that the hair shirt brigade is actually working. In fact it’s antagonising when they say ‘the end of the world is nigh’….Get stuffed. But people do go out to the countryside and they write these letters to us because the places they love are not as lovely as they used to be. So that drives a change and that is the edge on which we start driving some changes about energy and water and waste in our everyday behaviour in our homes.

While inspiring people to change their environmental practices is the first effect of a rural/urban dichotomy, such positive change can only occur if people make the necessary connections between adverse bio-physical environmental effects and their own behaviour once they are back in the urban setting. This leads to the second, somewhat contradictory effect where establishing sustainability as something that happens ‘out there’ in the so-called pristine natural environment can make the formation of these associations more difficult. The Minister was aware of this:

> So they want those things kept [but] they come back in here and they use electricity like you wouldn't believe and water like you wouldn't believe. Belch stuff up into the air and don't think it has any consequences and then complain about violence in the city and…Let alone dreadful things around transport…

This contradiction is part of a complex that was left largely unaddressed by the interviewees. This is because many of the interviewees were not in a position to be able comment on this fairly subtle aspect of my research question. There were several exceptions, however. Another well-placed, well-informed observer at the Ministry for the Environment, for example, had this to say about the rural-urban dichotomy:

> There's another fascinating problem that affects us in our current society, which you don't tend to get in simpler societies, and that is that the feedback mechanisms that tell us when we've messed up aren't direct anymore. So if you're a Maori tribe living in this country 300 years ago and you mess up your environment, you're dead. And you learn fast. That feedback loop creates a…My family comes from a farming background and they understand this. They see life and death and lambs and see those feedback loops and they know where food comes from. They watch it running around, they kill it and so on. And they know the consequences of getting it wrong and planting the wrong crops and those sorts of things. But in cities you don't get any of that anymore. Your food comes through a transaction that is electronic now from aisles in a supermarket where you get the choice. You've no idea where it comes from. You don't care. You rely on the labelling to tell you whether it's edible or not. So I think that the average person doesn't get the messages about the effects they have on the environment, except very local ones, and then only if they watch for them. And that's why you have this complete misunderstanding and disinterest in things like climate change and whatever because people can't conceive of it. Where is the problem? So again, cities have this fascinating dualism to them where on the one hand being creative exciting places and on the other hand being real risks.

Thus, these data already hint at a number of problems with the idea of urban sustainability. First, cities are simply not seen as being relevant to sustainability when it is constructed as something that happens 'out there'. The creation of this rural/urban

dichotomy generates contradictory effects where the ‘natural environment’ can inspire positive change, yet the city itself creates an insular shell that prevents urban inhabitants from being aware of wider bio-physical environmental problems. A similar charge could possibly be directed at this urban exoskeleton’s ability to manufacture actual and conceptual distance that covers up social concerns as well, though none of the interviewees made this claim.

The interviews also suggested yet a third problem, and, again, this pertains most obviously to bio-physical environmental sustainability: In some cases, not only was the city discounted as a site or condition of sustainability, it was actually set up as its *antithesis.* This was made most clear in those accounts of urban sprawl where the city was seen to be encroaching on some idealised version of more sustainable rural environments. This is implicit in the local body politician’s quotation (above) where sustainability is somehow tied to roaming the fields and paddocks with a dog or two, but this anti-urban sentiment was also expressed more explicitly. This was particularly the case in interviews where urban sprawl was seen as a concern. One architect, for example, described the suburbs as an ‘evil’ spawned by ‘a culture wanting its own piece of dirt’. He saw this as consuming the orchards and farms at the urban periphery, sucking in satellite towns and villages and described this process as ‘unsustainable’. This is somewhat ironic given these types of rural environments, with their heavy use of fertilisers, effluent run-off, or use of weedkillers which can be as damaging as any urban product or practice. This irony was never raised during interviews.

Urban Sustainability or Sustainable Cities

If ignoring the urban altogether or treating it as antithetical to more sustainable rural environments were two responses, another was to treat the city as a physically bounded location rather than a condition. It is implicit in the quotation above where people 'go out to the countryside' but it was also evident in those interviews where technical solutions to problems surrounding urban sustainability were the focus, such as waste disposal, curbing urban sprawl through 'containment' or 'consolidation' policies such as the preservation of a greenbelt, or water use. This marks a distinct turn away from planning orthodoxies of early last century where the wider urban environment, of which its physical form was but one part, was explicitly connected to social conditions and remedies (see, for example Malcom Mason's comment in Chapter Five). In some accounts, our contemporary neglect of the urban as a condition was seen as having been actively promoted by central government. One planner from the City Council told me:

> When the Regional Council did its policy statement back in the early 1990s and started out having a chapter on the built environment the Ministry for the Environment said 'no you don't have to have a chapter like that because if you get your policies on the topics right, then the urban environment will take care of itself'. And what they were saying was that if your water policies were right and the air policies were right, and transport and all those things were based on sustainable management principles, then you don't have to intervene in urban areas.

Several recent central government publications and documents have since sought to revise this orientation to some extent[41], however, the interviews with planners clearly showed that the legacy of this strong anti-interventionist, anti-urban stance that

[41] Urban Sustainability in New Zealand (2003); The New Zealand Urban Design Protocol (2005) including the Action Pack (2005), A Summary of the Value of Urban Design (2005) and Urban Design Case Studies (2005)

dominated the 1990s is still having a significant effect on current urban planning practice.

There was a sense that the only issues that should rightfully be addressed by the City Council are limited to air, water and energy policies whereas social and economic affairs are best left to the market. In fact, there was a strong suggestion that even fairly nominal attempts to address social concerns should be regarded with caution or even suspicion, and were labelled 'social engineering' by planners on more than one occasion. The following excerpt from an interview with a City Council planner was typical:

> It also gets back to whose values you're trying to promote if you're a planner. Which part of society is going to benefit from your decisions and that sort of thing. When I say that's to do with planning, it's a very dangerous area to get into if you're going to start engineering society and trying to tell people what's good for them and what values they should aspire to. I think the urbanists are guilty of trying to socially engineer. They're trying to tell people that mixed-use and high-density are good for them.

Ironically, in some cases, these accusations of social engineering has actively prevented the City Council from adopting the kinds of strategies, such as branding, place promotion and covenants, that have been used to such good effect by private interests.[42] While the extremely cautious attitude with regards to intervention might suit certain private interests very well, it explicitly rejects seeing the urban as a condition and emphasises the city as a site in which sustainability, in a fairly limited

[42] My use of the term 'good effect' here is based solely on the results of a Christchurch City Council census of recent greenfield subdivision residents where the responses were overwhelmingly favourable. Furthermore, the response rate of approximately 70 per cent is well above average (typically such surveys yield a response rate of about 30 per cent). Though there are many ways in which these subdivisions, many of which are symbolically gated or semi-gated, could be seen as inequitable and exclusive, the inhabitants were generally very satisfied with their new homes. The City Council's report is still in its draft stages and is as yet unavailable.

bio-physical environmental sense, might be achieved. It is this that forms the basis of my distinction between urban sustainability (which acknowledges the urban as a condition) and sustainable cities (which focuses on the city as a location).

The Country and the Town: A Natural Relationship?

To summarise, in following Law (2004) it is important to recognise that a paucity, or even absence, of data is still data. The lack of reference by the interviewees to *urban* sustainability is thus very revealing, indicating the urban prefix is not well understood, or is not seen as important, by many of my respondents in this study. This is an important result in terms of my study of urban sustainability. A second result is that while there was some evidence of an awareness and understanding of sustainability more generally, there is a distinct lack of enthusiasm for the term. While it certainly has its place in promotional material and research funding applications, it has largely failed to grasp the imagination of these practitioners in everyday practice.

Third, *urban* sustainability suffers even more than general sustainability in this regard as it is seen as something of an oxymoron where cities are posited as the antithesis of sustainability. Importantly, the very nature of the city accentuates this dichotomy as it shelters its inhabitants from the bio-physical environmental and social effects of their actions. Fourth, when sustainability is used in conjunction with the urban, it tends to highlight the role of 'nature' or more specifically, 'natural resources' in the city, such as air, water and energy and this approach inevitably employs spatial accounts of cities that are based on size, administrative function or physical characteristics that emphasise the city as a *location*. This approach, then, should perhaps best be described as building a sustainable city or sustainable urban form rather than urban

sustainability which, to my mind, invokes a more holistic view of the city, including its character, its history, its people and their aspirations, its economy and its bio-physical environment.

Chapter Eight: Multiplicity, Singularity and Defining Urban Sustainability

The sheer ubiquity of derivatives of the term 'sustainability' in promotional material, official documents, legislation and legal proceedings and, increasingly, everyday use, gives the appearance that the term is fairly straightforward, accessible and singular. This is particularly obvious in the official material where urban sustainability and sustainable development are presented as meaningful and unproblematic concepts. In fact, if we relied solely on such literature we would be comforted by an apparent consensus that we do actually know what sustainability means even though we may have some difficulties articulating an exact definition. Yet, this consensus is illusory as I outlined in Chapter Three; it is fraught with ambiguity, and it is difficult to operationalise and implement. As a corollary of this curious divergence, my task is not so much to define urban sustainability but to investigate how and why such an ambiguous and slippery term is employed with such frequency by an increasingly diverse group of individuals and organisations.

Law (2004) raised an interesting point regarding what we might call observations; that we also have to be sensitive to what is not there. In this vein, one of my results is that the use of the term sustainability appears to be largely confined to particular policy and social spaces such as policy documents, legislation, government publications, websites, promotional material, Environment Court proceedings and funding or resource consent applications. It is *not there* in everyday practice. The results outlined in the previous chapter led me to proffer one reason for this; it has been called the 'least sexy' of terms, and is one that has failed to grasp the popular imagination. My research participants saw it as faddish or just another piece of jargon that you have to

use in your reports or resource consent applications. While this points to a curious disjuncture between the different spaces of practice, I will now explore a number of additional reasons why urban sustainability and sustainability more generally are not used so often in everyday practice.

The Slippery Concept of Urban Sustainability

Having talked with my research participants about the main issues confronting the city, I then asked them if they had heard of sustainability (or, later, urban sustainability) and whether it meant anything to them. This inspired a range of more or less coherent definitions. In some cases it was clear that 'sustainability' was being used in a manner consistent with what might be called an everyday understanding that was synonymous with maintaining, prolonging or protracting certain processes or trends. One group housing representative, for example, responded to my question in the following way:

> Suzanne: I have heard a bit in academic circles about sustainability. Does that come in to your work at all?
> Group housing representative: Sustainability? …Well we're on a roller coaster at the moment. It won't carry on. We might have a rule of thumb that we might stretch this little roll out for another 18 months or a couple of years. It's well known that the builders are the first to suffer and the last to recover like the building industry as a whole because interest rates affect us badly.

In this case, further conversation made it clear that this interviewee thought sustainability meant prolonging the building boom New Zealand has been experiencing since 2002. He was a good example of a relatively small number of interviewees who appeared completely oblivious to the policy discourse surrounding sustainability and were unaware of its bio-physical connotations a la Brundtland. This is interesting given that this interviewee, as a group housing representative, is part of a

subset of people whom the central government hopes, or seems to expect, would have a reasonable understanding of the concept. This extract shows that although the terms sustainability and urban sustainability are ubiquitous in certain policy spaces and academic circles, they are not necessarily well understood by those who have a significant role to play in shaping the physical form of our cities and towns.

A further, very different, definition offers another clue as to why the concept of urban sustainability is not used more frequently in everyday practice and this next quotation represents the position of those who believed the term unduly complicated a rather straightforward idea:

> Suzanne: I'm looking at urban sustainability.
> Real estate developer: That's good.
> Suzanne: Does it mean anything to you?
> Real estate developer: It means to me that we shouldn't be hampering growth or interfering in markets unless there's good reason to do so. And I'm not hostile to a sound regulatory framework, in fact I'd encourage that, but I think we still have a long way to go to getting that here in New Zealand. Not only in New Zealand. It's a problem throughout the world.

This particular interviewee was aware of the confusion surrounding definitions of sustainability but was adamant that the solution was a very straightforward matter of encouraging economic growth. Further conversation clarified his view that bio-physical environmental and social concerns could only be addressed effectively by pursuing this model. Social inequities were to be resolved by 'making them [the poor] richer' and bio-physical environmental concerns would become irrelevant once the appropriate limits had been identified. In fact, one interviewee denied the existence of some bio-physical environmental problems altogether, suggesting that global warming, for example, should be dismissed as a 'greenie conspiracy'. In this view, urban sustainability is not used because it is associated with social and bio-physical

environmental affairs that are, in their view, dubious, confusing or irrelevant. This point of view is largely consistent with that of the ecological modernisers who understand sustainability to be achievable within the confines of existing systems and structures.

Both the literature and my interviews identified an opposing discourse to that of the ecological modernisers, one that centres on an awareness of the ways in which sustainability depends on appropriate responses to self-induced threats and risks. In complete contrast to the ecological modernisers' position, which involves a mere tweaking of the current growth model, those interviewees I identified as adherents of the risk model generally proposed far more widespread and radical changes. The interviews showed that more pervasive changes were required because of the interconnectedness of social, bio-physical and economic dimensions, yet here, too, the talk was dominated by references to unsustainable practices rather than sustainability. The scarcity of references to sustainability from this group seemed to stem from the overwhelming complexity involved in balancing the multitude of elements present in their version of the concept. This complexity was evident in the definitions they offered of the term where it was not uncommon to hear rather vague, circuitous, rambling or tautological accounts. The following is a fairly typical example:

> Suzanne: Have you heard this word sustainability?
> Residents' Association representative: Yes. Often. I've been to courses in town on it. Yes.
> Suzanne: So what does it mean to you?
> Residents' Association representative: What it means is that a ….a…an area…of forest, in land use, doesn't matter what it is, whether it's water, timber, soil, whether it's social structure, infrastructure, whether it's what – it all amounts to the same thing. That what you put in place doesn't interfere with the natural course of events so that the actual land and its use becomes unsustainable. Does that help?

This is a very good example of the ways in which interviewees could be clear about what was *un*sustainable, whilst being stricken by the messiness, the complexity, and the enormity of defining what *was* sustainable.

One of the most common ways of coping with the complexity of more expansive definitions of urban sustainability was to separate and reduce the issue to its more simple components. This was made obvious to me in an interview with a member of the City Council's planning team where I was told:

> Planning team member: Well, the first step [in dealing with urban sustainability] is doing a planning course or getting a conceptual framework or theory of how society and cities work. Now, it's only a theory and it could be wrong but where it might be saying an urban area is a system, a complex social system or economic system and environmental system, at least it *resolves complex problems down into things which you can at least comprehend*. And then you are able, through that, to identify issues. [Emphasis added]

The one area where the concepts of urban sustainability (or rather, sustainable cities) and sustainability were most likely to be confined was to the bio-physical environment. Definitions of urban sustainability that were limited to aspects of the bio-physical environment tended to be clearer and more succinct. These definitions were often accompanied by really good, clear examples of particular activities and processes that were relatively easy to understand and implement. The following are just two examples of this:

> Architect: Well everyone's got a different answer. When I'm asked that I say 'You need to define it', which is just bouncing around. The classic answer is in producing a house with little or no impact on the resources and the environmental benefits that are going to be enjoyed by future generations.

> Businessman: Well I come from farming where sustainability is so vitally important. And it comes down to recycling your rubbish and all that sort of thing.

Definitions in this vein tended to have a narrow focus and were confined to quite particular activities with easily implemented solutions, such as recycling. This strategy was employed with regards to even very complex entities such as the city itself. This was illustrated very well by one City Council employee who, when asked to elaborate on his version of urban sustainability, devoted his entire 10 minute explanation to the topic of waste water drainage.

Whether it is intentional or not, the Ministry for the Environment has helped to formalise the notion of sustainability as weak ecological modernisation based on technological innovation and limited bio-physical environmental measures in a range of its publications. One of these is a guide for industry called *Simply Sustainable* (Ministry for the Environment, 2005a, p. 2) whose opening pages state that 'sustainability actually ties in with what are generally considered to be 'sound' business practices, such as …minimising waste and maximising resources'. The guide advocates such 'radical' changes as 'green[ing] your office stationary' and 'choos[ing] energy efficient equipment and appliances' (Ministry for the Environment, 2005a, p.11). This is hardly a robust critique of, or comprehensive set of solutions to, deleterious business practice from our key environmental advocate; what it does do, however, is help legitimise sustainability as a limited bio-physical environmental concern.

The Birds, the Bees and Sustainability[43]

I began this chapter with the claim that despite widespread use in policy documents, official publications, resource consent applications and the like, terms like urban sustainability and sustainability more generally have not necessarily gained currency in everyday practice. There are a number of possible reasons for this. Sometimes the term was used in an everyday sort of way, synonymous with maintaining or prolonging processes or activities, such as the building boom. Others did not use the term because it was sullied by unnecessary and complicated social connotations when the matter was a straightforward one of economic growth constrained only by non-controversial bio-physical environmental limits. Those who did understand the term to be a complex of social, economic and bio-physical environmental concerns often had trouble when pressed to define it, largely because the steps necessary to implement it were both radical and all-pervasive. Those who adopted more simplistic definitions that focussed almost exclusively on the bio-physical environmental aspects were easily able to offer definitions and appropriate means of implementation; sustainability is a simple matter of recycling and taking public transport. The issue that these various definitions and prescriptions raise in terms of the literature is whether they can be kept separate and singular, whether it is merely a matter of perspective, or whether these understandings of urban sustainability clash, interact and interfere with each other. This is a question that will be discussed in Chapter Eleven.

[43] 'A bird's eye view' refers to a singular, distanced and presumably all-encompassing vision of an otherwise elusive reality… A bee's eye, on the other hand, has over eight thousand hexagonal lenses all oriented in a slightly different direction giving multiple perspectives on the same picture.

Chapter Nine: The Bio-physical Environmental Discourse and a Technocratic Approach to Urban Sustainability

Scattered amongst the results so far have been oblique references to the importance of the bio-physical environmental aspects of urban sustainability. Allusions to the bio-physical environment, though often ill-informed or vague, were a consistent part of the discourse surrounding urban sustainability. These results focus on the actors and institutions, functions and processes that both support and are supported by particular readings of urban sustainability. Primary among these is what I call a *technocratic discourse* that the focus on the bio-physical environmental aspects of sustainability makes possible and actively supports.

Urban Sustainability as Technical Process

Having completed a Masters degree involving a study of Christchurch residents' reactions to infill housing, one of the features I found most startling about the urban sustainability discourse was the widespread separation of bio-physical environmental and social factors. My previous studies had shown the two to be intimately connected as the policies aimed at the containment of urban sprawl, the preservation of ecosystems and so on, reverberated in everyday life in unexpected and often unwelcome ways. Sensitised to these links, I was surprised at how often, and to what extent, the urban practitioners I interviewed divorced these two spaces. Two ways in which this separation occurred was by situating particular constructs of nature outside the city and by exaggerating the differences between the two. Importantly, this separation of the urban and the bio-physical environment was also evident in policy and practice directed towards the city itself.

A number of interviewees made it clear that, in terms of urban sustainability, the city was less a place for people to live and more of a bio-physical environmental problem in need of 'technical' solutions. I use the word 'technical' deliberately here in order to both emphasise the stripping back of the city to its physical components, and to highlight the role particular kinds of knowledge play in the urban sustainability discourse. The following excerpt from an interview with a member of the City Council's planning team is a good example of this technical talk:

> Suzanne: What would a sustainable city be like?
> Planning team member: Um…A sustainable city? I don't know what it would look like but I know what it would have to do. It would have to be virtually closed loop on things like toxins. We would have to work out what level the environment would reasonably sustain. And make sure we didn't exceed that. At the moment it's being grossly exceeded.
> Suzanne: How would we know what that level was?
> Planning team member: We have to do a lot of research. We know that x level of toxins has an effect on y species and we do know a lot about that sort of thing. We need to find cleaner ways of doing things. It wouldn't necessarily need to generate its own energy but it would have to ensure that the energy that it did generate in some remote location didn't have adverse effects on the environment. A sustainable city would be more compact. New Zealand cities are pretty sprawly which encourages the use of the motor vehicle. And that encourages CO_2 emissions. On a wider scale it uses more resources in general like for rubber for tyres or energy to produce cars.

It is interesting to note the transition from the sustainable city *being* a particular way to *doing* particular things, and importantly, it is the city itself rather than its inhabitants that perform such functions as closing the loop on toxins. It is also worth noting how, in this discourse, it is the environment that has limits and that these are merely uncovered by our research rather than made by it. There is very little room in this technical definition of a sustainable city to suggest that active, living, real people actually have a role in urban areas. In simple terms, the effect of this discourse is to

remove people and socio-economic processes from the urban sustainability concept altogether.

This tendency was evident in many of the interviews, and it is also clear in much of the information, publications and policy choices I reviewed during the course of my research. The emphasis on numbers, densities and technical information is obvious in, for example, much of the discussion and official material pertaining to the Greater Christchurch Urban Design Strategy. In just one case, in April 2005, the five-council cooperative and Transit New Zealand released the *Greater Christchurch Urban Development Strategy (So many options…which will you choose?)* booklet outlining growth strategy options. As outlined in Chapter Five, this was the result of an attempt by the collective to collaborate over future growth in Canterbury. The opening paragraph (p. 2) informs us:

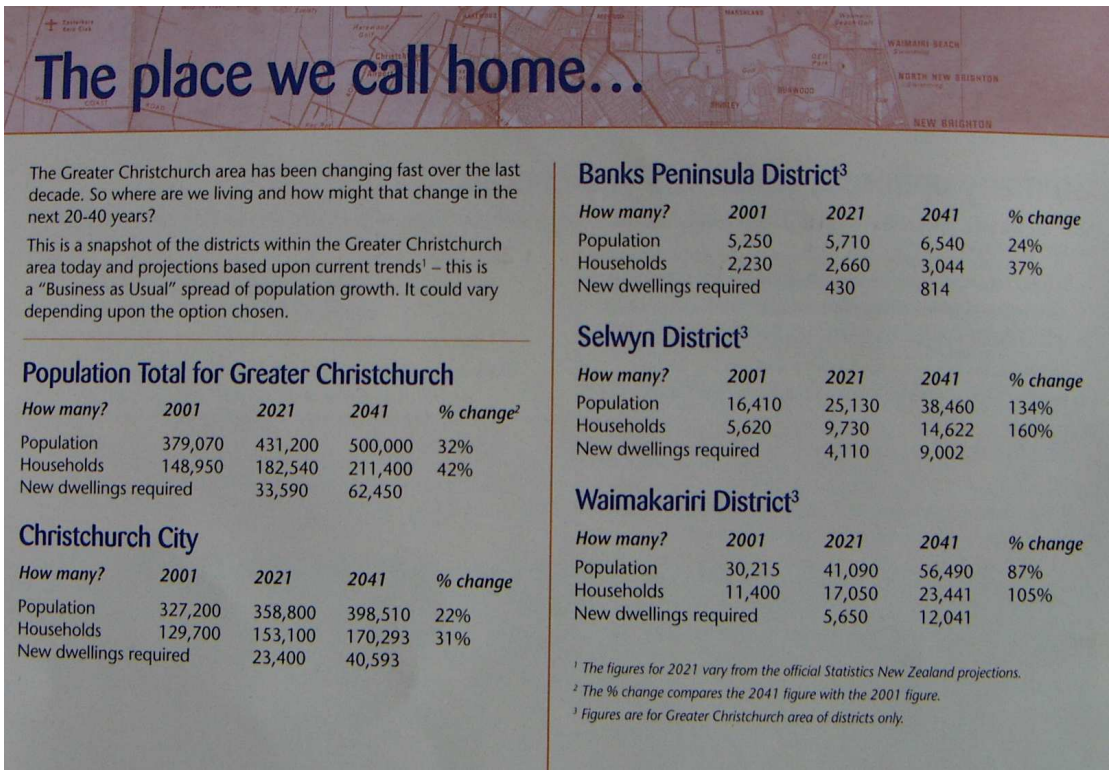
> Every month 400 more people make Greater Christchurch their home. That's in addition to the 380,000 people who already live here. By 2021, 430,000 people will live here and around 500,000 could make the Greater Christchurch area their home by about 2041.

Following the contents page, under the heading *The Place We Call Home*…we are greeted with the information presented in Figure 14 (page 171).

Whilst the language used suggests that the authors of the document clearly intended their work to be accessible and easily understood, the abundance of statistics and figures in the document do not always have this effect, as I witnessed in at a meeting of community leaders where the four options were being discussed. A central part of the problem appeared to be the incongruity of the statistical picture painted in the figure above with the kinds of issues identified as important in the *Christchurch City*

Council's Residents' Satisfaction and Quality of Life Surveys (Christchurch City Council, 2005), such as feeling happy and healthy, feeling safe in the home after dark, and being proud of the city. Indeed, throughout this document, much of the complexity of urban life is stripped back to a relatively simple evaluation of population, densities, acreage, hazards and financial costs. Even the nebulous 'community identity' is reduced, at least in part, to a question of physical housing forms. Thus, there are still very strong remnants of that early 1990s thinking identified by the council planner whereby if roads, water, zoning and so on are taken care of, communities, safety, equity, financial opportunities, etc. will take care of themselves and that planning the future of the city is very much a technical question directed towards the bio-physical environment.

Figure 14: The Place We Call Home: An Excerpt from the Greater Christchurch Urban Development Strategy.



The place we call home…

The Greater Christchurch area has been changing fast over the last decade. So where are we living and how might that change in the next 20-40 years?

This is a snapshot of the districts within the Greater Christchurch area today and projections based upon current trends[1] – this is a "Business as Usual" spread of population growth. It could vary depending upon the option chosen.

Population Total for Greater Christchurch

How many?	*2001*	*2021*	*2041*	*% change[2]*
Population	379,070	431,200	500,000	32%
Households	148,950	182,540	211,400	42%
New dwellings required		33,590	62,450	

Christchurch City

How many?	*2001*	*2021*	*2041*	*% change*
Population	327,200	358,800	398,510	22%
Households	129,700	153,100	170,293	31%
New dwellings required		23,400	40,593	

Banks Peninsula District[3]

How many?	*2001*	*2021*	*2041*	*% change*
Population	5,250	5,710	6,540	24%
Households	2,230	2,660	3,044	37%
New dwellings required		430	814	

Selwyn District[3]

How many?	*2001*	*2021*	*2041*	*% change*
Population	16,410	25,130	38,460	134%
Households	5,620	9,730	14,622	160%
New dwellings required		4,110	9,002	

Waimakariri District[3]

How many?	*2001*	*2021*	*2041*	*% change*
Population	30,215	41,090	56,490	87%
Households	11,400	17,050	23,441	105%
New dwellings required		5,650	12,041	

[1] The figures for 2021 vary from the official Statistics New Zealand projections.
[2] The % change compares the 2041 figure with the 2001 figure.
[3] Figures are for Greater Christchurch area of districts only.

Institutionalising a Technocratic Approach to Urban Sustainability

At times it was obvious that people's passion for protecting nature and the environment was the driving force of their focus on technical bio-physical environmental approaches to urban sustainability. These interviewees were fervent advocates of environmental restoration and protection and spoke enthusiastically of their personal habits and preferences for recycling, organic food, public transport and so on. In other cases, however, the focus on the bio-physical environmental aspects of sustainability seemed more a default position generated by the lack of clarity around wider urban processes and institutions, some of which (the Resource Management Act and the Environment Court) are particular to New Zealand's legal framework. The practical implications of these two institutions deserve more attention as they play such an important role in the building (both physically and mentally) of our cities and towns.

There were certainly a range of reactions to both the Resource Management Act and the Environment Court, but one of the more readily identified was a frustration over how to reconcile the various elements of the Act with the demands of legal process. The following quotation from an interview with a Regional Councillor is lengthy, but it is useful in illustrating how practitioners struggle with the different aspects of the Act and how, by default, the bio-physical environment and technical approaches to urban management emerge as the most appropriate focus of action:

> The [regional] councillors are creatures of statute in the sense that what they can and can't do is dictated very much by law…particularly the RMA. So if I want to think about issues like intergenerational equity, I have to think about it in terms of the RMA. The RMA bothers me about that. Because I was taught that in a democracy like ours parliament proposes and the courts dispose…So what legislators should do is write a principle which can then be subject to tests in particular circumstances…So if I

> go to the RMA and I look at the bit that talks about sustaining the life-giving capacity of air, water and ecosystems and so on and I ask how I can do that…And if I look at the part of the Act right next to that which talks about future generations and I ask how I am to do that, I have to say about those two pieces of the Act, frankly, I'm damned if I know. When I'm trying to decide on an issue 'yes', 'no' or 'yes with conditions', what's the test? At that point I say the Act is not actually a principle but an ethic. And it's an ethic to which I might subscribe but as a creature of statute called a councillor I don't know how to work with it. But right after that I come to a thing which says I have an obligation to avoid, remedy or mitigate the effects of my actions on natural and physical resources. Then my eyes open wide and I say 'here is a test'. That I can do. I can say this proposed activity is or is not likely to generate adverse effects. I can avoid, remedy or mitigate those effects [of that activity]. So the only one of these three related things in the Act which I think has any meaning to a creature of statute is that third one…That's the bit I can see makes sense in terms of what I understand the law to be and I understand the decision-making process in relation to the law to be.

As New Zealand's wider environment becomes increasingly litigious, it becomes all the more important to make 'accountable' decisions supported by the appropriate evidence. Given the ambiguities of the Act with regards to socio-cultural goals, it is little wonder that the bio-physical environmental aspects of the city are considered to be the safer and more certain option. While other actions directed at socio-economic goals might be defensible, they are certainly less robust in terms of tangible evidence and are subsequently more open to challenge. Because they are not justified clearly in the legislation, in subtle, but profoundly powerful ways, institutions like the Resource Management Act actually normalise the neglect of wider urban processes and functions.

Consequently, other forms of knowing are seen as less valuable and carry less weight. There was, for example, a great deal of talk from Residents' Association representatives about the lack of credibility they have with the local authorities and in

the Environment Court. As laypeople, they are not qualified to testify as 'expert' witnesses and they often have to go to extreme, and expensive, lengths to have their views heard in this forum. That only scientific or technical rationales are seen as legitimate has filtered out of the Court into more prosaic forms of dialogue between the Councils and urban interest groups or citizens. This was demonstrated to me in an interview with a Residents' Association representative. In this example, the calculations of professionals were elevated over the eye-witness accounts of residents who were concerned about flooding and drainage in their neighbourhood:

> As far as land use and the technology used to build buildings now, with earthquakes and so on, it's highly technical. And when they put in sections, they put down bores to find out where the water table is, they get a lot of argy bargy, they sit there for hours with their algebra and work it all out. But why don't they [the local authorities] come out here and have a look after the rain and just see what happens.

This particular quotation highlights sustainability as a highly technical process involving abstract forms of knowledge and calculations beyond the realm of the layperson, and even beyond most professionals who then have to hire expert consultants to translate everyday concerns into an acceptable format.[44]

This situation becomes more serious when one considers the *extended reach* of the Resource Management Act and the Environment Court in the affairs of the city. It is too early to make general statements about the effects of the requirement for the Long Term Council Community Plans but it is possible to comment on the ways in which the effects of the Resource Management Act permeate the obvious and more subtle features of urban living via this technical discourse. The most obvious (though not the

44 This has interesting parallels with the distinction that appears to exist between the sustainable city as an ecosystem and urban sustainability as a dynamic condition unfolding in the quotidian.

only) example from my research is the case of one interviewee who described how her Residents' Association had to translate its desire for low-density living into an argument that further residential development would have some kind of adverse environmental effect. She told me:

> And so we decided to go to the Environment Court and we had to have a planners' evidence, landscapers' evidence, recreational experts' evidence and we had to have about 4 or 5 experts. Mr P from Lincoln University gave evidence on transport because energy is an important thing in the Act and so we got him to say it's not energy efficient out here in terms of getting people into town. We pointed out things like hardly anyone on the hill had their children going to local schools. And so we had to have all those reports and pay for all those reports.

This quotation highlights both the importance of being equipped with technology-based, expert testimony in order to establish these environmental effects, and the scope of the Resource Management Act which demands that citizens translate their aspirations for their neighbourhood and city into a matter or bio-physical environmental sustainability.

The Objective City and the Fair City

One of the reasons the technocratic approach to urban sustainability appears so convincing, at least at a superficial level, is that it has the appearance of being objective. Though this obviously connects with my earlier discussion of science as monolithic, it is widely believed that this should allow all urban residents to enjoy equal right of access to the processes of urban planning and resource management and, should there be any disagreement, the Environment Court is there to provide unbiased and objective decisions based on the evidence presented. The idea that this process is fair and equal lends moral support to the technocratic approach to urban

management and practice. Yet, my findings suggest that this appearance of objectivity and equity is moot. This first came to my attention during an interview with a Residents' Association representative who highlighted how some of these processes associated with the Court can play out in inequitable ways that then have definite and enduring impacts on the urban form and the lifestyles of nearby residents. We had been talking about her legal battle with a real state developer:

> The developer had the best lawyer, well not necessarily the best, but one of the best. And we got who we thought was equal best. They had someone who never forgot anything and we had Mr M who was an intellectual. And we had him, but then the Environment Court double booked him and then they wouldn't let us change the date so that he could act for us. So we had another lawyer and we were hard pressed to find someone to equal the other lawyer. The other side suggested a QC who we could have and so we were stuck with this QC. He was nice, but he didn't actually know about stuff and I had to keep feeding him stuff and so we lost. And so after that, the neighbourhood were really fed up with it. They were fed up with it before then but you have to go to the end. And so we went to the end and we lost and the new people are there and that's fine. But we felt we didn't have a fair go. We lost Mr M and it wasn't like we had equal minds.

In the opinion of some of the other interviewees, many of the decisions made in the Environment Court were not the result of scientific or technical evidence, but of how deep the pockets were of the parties involved. As one City Council Community Advocate noted with pointed scepticism:

> The RMA says you can do what you like whereas [the former Town and Country Planning Act]…told you what you couldn't do. Now it's quite open for interpretation and for some people to make mileage out of it. And I think a lot of people make big miles out of the RMA. Sustainability, in the end, is just two lawyers debating it out forever and a day. It's just that one group of lawyers will be paid by someone longer than the other group of lawyers.

Indeed, profound disillusionment with this aspect of the Resource Management Act and the Environment Court was widespread and has led to a sceptical dismissal of the RMA as being an acronym for the Rich Man's Act.

Misanthropy in the City

It was my observation that some of the interviewees were intensely passionate about nature and the bio-physical environment. Sadly, it sometimes seemed that this concern for the bio-physical environment had pushed the needs and aspirations of other people to the periphery. One City Council planning team member, for example, told me 'I thought the world was a bad place and that people didn't deserve much help so I thought I'd help the environment instead'. Such comments were not uncommon. A different member of the City Council planning team, for example, responded to my question about the rights of communities to object to particular developments in the following way:

> Suzanne: What about if something is sound in a technical environmental sense but it's something that the community doesn't want?
> Planning Team Member: That happens all the time. That's your cell phone tower, your landfill. They fight them and it's more difficult under the RMA to fight it from a NIMBY point of view. Why shouldn't it happen if it's environmentally sound?

Some interviewees took this to the extreme and presented people not only as having little right to veto moves undertaken in the name of the bio-physical environment, but as some kind of pest that might actually have to be eradicated. One City Council employee, for example, told me that 'We almost need more disasters, or we need

more floods in the North Island. We need these events that wake people up to seeing the global picture'. Such a stance can appear cruelly misanthropic.

While this misanthropy, where more disasters are required to educate (or even eliminate) an undeserving public, was rare it was not uncommon to hear talk of the need for a 'top-down' approach which was a very pleasant euphemism for a quasi-dictatorship consistent with some people's use of the term 'eco-nazi'. Importantly, among this group it seemed that the ends justified the means and the implications for practice were a plethora of alternative regulations, restrictions and rules that would make people modify their behaviour. One interviewee justified his view by arguing that this would be not only good for the environment, but good for people as well because such measures would help them re-fashion their values and aspirations along more meaningful lines. So while these interviewees might be described as eco-centred, underlying this is a view of New Zealand society as profligate and unthinking in their resource use, over-indulgent and unaware of the consequences of their actions, and this serves as sufficient justification for their misanthropy.

Coercion and Consent

Others were less dictatorial preferring instead a 'carrot rather than stick' approach where education was key in persuading people to change their behaviour in the name of sustainability. This adaptation of behaviour has clear links to the concept of hegemony which is most effective when people come to believe they are voluntarily acting in their own best interests as opposed to being coerced. The following quotation is a both a good example of this concept in action and representative of those whose view is that education is key in the implementation of sustainability:

> Planning team member: Most people can't comprehend the scale of it and so they throw their hands up and say what can I do about it. So that curtails a lot of people. Then there're people who say the world is going to hell in a handbasket so I might as well make the most of it and it doesn't matter what I do. But the people who learn a bit about it and believe that they can make a difference will modify their behaviour. That's the majority.

While it may be optimistic to suggest that 'the majority' will change their ways with a little education, there was evidence that learning about the bio-physical environment could inspire people to think and act in new ways. There was little to suggest, however, that a reliance on the purely technical aspects of sustainability was the best way of doing this. I would generally asked the interviewees how they came to be interested in environmental issues, and it was rare to hear people speak of a conversion based purely on scientific evidence. More often, and in a manner consistent with Macnaghten's (2003) findings, it was when bio-physical environmental issues were tied to other features of everyday life or when they could put the information into some kind of context that people became interested in sustainability. This made the technical discourse more permeable and allowed connections to be made between the science and the art of everyday living. The following excerpt from an interview with a Christchurch City Councillor is a good example of this.

> Councillor: So I stood in for the Mayor and flew down and it was absolutely amazing looking down at [the landscape] from the air. I saw the wonderful river and landscape. It just looked so pristine and on either side it was so green and I thought this is something that we have to retain. And we got down to Spencer Park and there were crowds of people, there must have been about 3000 people, and I was quite taken aback and they had put up different photos of around Styx River and their plan was to make it what they call a Living Laboratory. It meant a lot. The Living Laboratory is made up of representatives from Ecan, Landcare, NIWA, CCC and Lincoln University and I would sit there and I wouldn't know all the gobbledy gook they were talking about half the time.

> Suzanne: Was there a bit of jargon?
> Councillor: Yes and I would think what am I doing here? But I've learned as time has gone on and I've come to realise their vision and how important it is that we keep the river clean and what's in the river and how the scientists would go out and measure the flows and cockabullies and see what's there and what's come back since they've been doing all these things. Now I'm starting to understand their jargon and what they're doing. And so it has become more important to me.

For this Councillor it was hearing the 'gobbledy gook' in the context of the Living Laboratory that made sustainability important to her, but others talked of other factors such as aesthetics, social factors surrounding poverty and hardship, health concerns or disquiet about the kind of world their children would inherit had helped people become aware of, and interested in, sustainability. It was this interest that stimulated change and made people willing to alter their behaviour; this has some important implications for *urban* sustainability and I discuss these in Chapter Eleven.

Saving the Environment by Keeping it Real?

Despite the urban prefix, much of the talk surrounding sustainable cities and towns focuses on the bio-physical environment. As a corollary, a technocratic discourse has become dominant and this both supports and is supported by this reduction of a complex concept to but one of its components. The finer points of any distinction between sustainability and sustainable development seem to have been lost, and now sustainability with a focus on the bio-physical environment acts as a synecdoche for the more comprehensive version of the concept. Consequently, the focus is turned away from social and economic affairs and the connections between the three components of what was the orthodox tripartite.

This reductionism has become institutionalised in the Resource Management Act, whose ambiguities encourage practitioners to turn to the apparent certainty provided by an 'objective' portrayal of the bio-physical environment. This focus on the technical bio-physical environmental elements of sustainability means that, more widely, even community aspirations surrounding living densities, open spaces, community facilities, and the location of collective goods such as cell phone towers, have to be translated into a technocratic discourse around adverse environmental impacts. This process of translation ostensibly renders decision-making equitable at one level, but is profoundly altered from this ideal in practice. The realities of legal representation and funding opportunities expose the objectivity of some decision-making processes as somewhat farcical, even if the intent is to be fair and just and to ensure the bio-physical environment is protected from the adverse effects of activities.

That the bio-physical environment is seen to be as, if not more, important than people in the technical city is highlighted by some of the comments made during the course of this study. In extremely misanthropic accounts, people need to be exposed to deprivation and disaster for the good of the environment; their needs and aspirations made subservient to some semi-sentient, vengeful entity (as might be constructed from, for example, Lovelock's (1987, 1995) presentation of 'planet' Gaia). The technocratic discourse distances such interviewees from the social consequences of their nature-worship. More circumspectly, many others preferred a less hostile approach where education about the jargon-laden, technico-scientific aspects of sustainability are married to everyday life using real examples.

Chapter Ten: Sustainability as Composite – Untangling the Web

In the previous chapter I presented results outlining the ways in which urban sustainability was often reduced to a technical problem concerned with the bio-physical environment. While this approach has its problems, it also has an appealing simplicity that stands in stark contrast to the messier versions of urban sustainability I outline in this chapter. The results presented here reveal urban sustainability to be a more complicated business than engaging in simplistic strategies such as using energy efficient lightbulbs, and I would like to explore the aspects of this complexity in more detail. This includes looking at such issues as how the current growth model can be modified so as to be more sustainable (in the sense risk theorists might use the term), the discourses surrounding survival, the implications of different timeframes for sustainability and the role of risk and reality. Finally I present research results that relate to economic and social sustainability.

An Holistic Approach

In many definitions, sustainability is a composite of, typically, three strands comprising bio-physical environmental, social and economic aspects. Indeed, for many organisations and individuals establishing and maintaining a balance between the three is the essential feature of sustainability, a feature which sets it apart from other environmental or social movements. This tripartite forms the core of such reporting procedures as Triple Bottom Line, business models like The Natural Step, and organisational practice, such as that adopted by the Christchurch City Council and which was the topic of one interview conducted with a City Council Community

Advocate. Yet, as this interview shows, it is not always easy to implement or maintain such holistic views of sustainability:

> Community Advocate: I haven't really taken it [urban sustainability] on board much to tell the truth. Because I hate jargon. You know, words come in and words go out. What does it mean in reality. That's a good question. It doesn't really impact on my work as such. But sustainability was a really, really big thing about 2 years ago. There was a time when in any report that we had we had to do a grid and it had economic, social and environmental and we had to tick boxes and it was all about sustainability. For some reason that seems to have been diluted or… we no longer have to include this in our reports.
> Suzanne: Why was that?
> Community Advocate: I don't know. It just kind of faded out…

The City Council still employs a Sustainable Christchurch Leader, and sustainability is still a significant part of City Council literature, yet the initial impetus that popularised the term seems to have 'faded out' in practice. This made me wonder why the term had become relegated, primarily, to official policy spaces.

One of the reasons is the complexity of holistic approaches to urban sustainability and, ironically, this is both a benefit and a disadvantage. My research results suggest that more comprehensive definitions of sustainability stimulate and incorporate people's interests in a way that was largely absent from those technocratic and reductionist accounts of sustainability presented in the last chapter, and this can provide a powerful momentum for change. On this other hand, the complexity can be quite overwhelming and can lead to a kind of despairing inertia. The difficulties involved in even articulating holistic visions of sustainability is illustrated in this next, inevitably lengthy, quotation from an interview with two members of an urban interest group:

> Interviewee 1: I became aware of the environmental issues, economic issues… they are also causes for war. And I came to see that living in an eco-community could be a possible solution for the future in terms of economics, environmental and social issues.
> Suzanne: How do we balance those three things?
> Interviewee 2: It's not clear. The Natural Step provides a clear guideline of what is sustainable and what isn't. With finance it's quite clear. With the social it's more …
> Interviewee 1: Maybe with the social it's more blurred because we tend to screen out a lot. We take it as normal that so many percent of the population are over- or under-employed. It's institutionalised. We don't think that everybody has the right to work. Some are over-employed. There are health issues. Yeah, we complain about smoking and so on and yet in other ways, somebody's a murderer if you kill them with a gun but not with an environmental poison. That's just normal. If you kill someone over a long period of time, that's quite normal. That's accepted... And that's why the social fabric…It's been falling apart for a long time. There used to be large integrated extended families. Now it's the nuclear family and soon the main thing will be single mothers. And where does that lead? It's fragmenting more and more and we're not aware of the social implications of that. There's the increase of disease and children with disorders and whatever and they're all kind of connected in and it's difficult to point out this particular thing, or this particular poison caused it.
> Interviewee 2: One key thing would be where there is insecurity in the family where a mother in under stress and on her own. The children suffer the effects of that stress and insecurity and what do people seek? They seek comfort foods, they eat badly, they seek meaning in material things rather than in relationships and this affects the environment in terms of consumption and so forth.
> Interviewee 1: That's a problem. There's no clear-cut solution. It's like politicians love it when you have a clear-cut solution. Do this and the problem will be solved, but that's not the case. I think that's the thing about sustainability and moving to an integrated consciousness of interconnectedness that you can actually not solve things with a clear cut thing…When you do something here, it will influence everything around you. So that's why you have to go quite carefully when you implement social changes.

Indeed, it seemed that most of the interviewees, even those most fervent about the idea, acknowledged there were difficulties with the holistic version of the urban sustainability concept and the results suggest a strong consensus on this point.

More contentious were the mechanisms by which these complexities might be resolved, and this constituted something of an ideological battle. In some respondents' view, only a dedicated planning team could be sufficiently informed about the relevant issues to address sustainability to an adequate extent. Not surprisingly, such opinions tended to prevail among members of the City Council's planning team though it was also evident elsewhere. The following quotation is a good example of this kind of talk:

> Planning team member: We've had a social expert who's gone out and surveyed a lot of things. Two retail experts have written quite substantial reports that we then try and bring together to actually argue that what the market sees as business as usual actually is unsustainable and there is some degree of management necessary to make the whole system work well for everybody. And it's not a case of being anti-competitive. Markets still need to flourish and they change and efficiencies are created all the time. But it's a case of saying if you do that then it will destroy that and you need to demonstrate that it won't happen. And it's taken a hell of a lot of research to get that.

Others tried to negotiate a sort of balance between state intervention and market efficiencies:

> Planning team member: A good city is one that promotes itself and its own identity but keeps its options open for new technologies and different changes…You don't have to commit the city to a particular long-term direction which could end up being wrong. Make strategic incremental decisions which keep the form and direction of development achieving certain outcomes but at the same time enabling the existing identity of the garden city to be maintained.

The competing view, of course, was that only the market could successfully accommodate all the relevant concerns and distribute the benefits appropriately. Allied with this position, however, were a number of areas open to dispute. Some respondents believed, for example, that a certain level of intervention was required to create the right conditions to maximise market efficiencies. Establishing and

regulating for bio-physical environmental 'bottom-lines' was one example of this. Another was a degree of zoning for residential, commercial and industrial because, as one respondent noted, without zoning someone could build a mall right next to another mall and thus erode the profits accruing to the first mall. Too much competition might not serve anyone's interests. Other respondents were convinced that only a truly free market would be responsive to the complexities of urban and seemed loath to admit to any benefits of state intervention.

Building Urban Sustainability: Renovating and Demolishing

If two of the main challenges of more holistic accounts of urban sustainability, and sustainability more generally, were the expanded sphere of the concept and the degree of interconnectedness between the three strands, an additional problem was whether the current system (of political institutions, planning orthodoxies, economic growth models, bio-physical environmental limits, culture and so on) could be modified incrementally to achieve sustainability or whether this entire system required a radical demolition and rebuilding. A small group of interviewees were, for example, keen to see the whole monetary system dismantled with such practices as interest bearing accounts and, subsequently, inflation and the need for economic growth eliminated altogether. Our current system would be demolished and replaced with alternative currencies, such as the Green Dollar scheme, and policies more in line with those used in some Islamic countries where the practice of usury is illegal. Equity and justice would take more central roles in policy formation and this would require a whole new set of institutions, such as 'eco-communities'. A thorough revamping would be required because as it stands, the interconnections that exist between social, economic

and bio-physical environmental aspects of sustainability actually support the maintenance of the status quo or, as one interviewee put it, 'the rush towards hell in a hand-basket'. Mere 'tweaking' cannot bring about the widespread changes necessary to address their holistic view of urban sustainability.

In contrast were others who were dismissive of the type of radical approach that would see the demolition of existing institutions and structures. They favoured a process whereby 'the system' was gradually modified or renovated in order to achieve sustainability. Such steps might include the recognition and accounting of bio-physical environmental externalities[45] or the substituting 'eco-friendly' products for those that were more damaging to the bio-physical environment. These are the types of measures the Ministry for the Environment outlined in its *Simply Sustainable* (2005) directed towards the business community whereby greening office stationary and cleaning products and using energy efficient equipment and appliances will move us towards sustainability.

In some cases the interviewee thought they were being quite radical when they were actually advocating fairly orthodox measures. In one example, an interviewee from the City Council argued that people's values surrounding intangible assets of the city or 'soft infrastructure' such as community feeling, voluntarism and so on should be recognised more fully. He described how this might be achieved at some length:

> CCC employee: Well, you might need a more complex tool, such as the Sustainability Assessment Model.
> Suzanne: How is the benefit to society calculated in this model?

[45] Many bio-physical environmental externalities are not given a 'cost/price' in classic economics. The field of environmental economics seeks to include such externalities as costs and thus change the face of accounting.

> CCC employee: This is a very simplistic index which takes the total value of the positive benefits above the line against the absolute value of those below the line.

While this seemed to be a simple way of including social benefits in accounting processes, I was curious as to how the benefits were calculated.

> Suzanne: But how is the benefit to society calculated?
> CCC employee: This is on a willingness to pay basis…And the willingness to pay, for oil for example, is the crude price and the pump price. Because that's what society is obviously willing to pay… It's easy for decision makers to look at hard figures because they're hard figures. Even if they just look like hard figures but they're not actually hard figures! It's easy to use them in an assessment. If there are hard figures on the economic costs of option A and option B and then there's all this fluffy writing about the benefits and costs, how do you assess that? Everyone assesses it differently so that's why I think a monetised model is useful because people are used to dealing with costs in monetary terms. It has the robustness of having been produced by accountants and can be peer reviewed by accountants rightly or wrongly. And it helps the decision maker to compare the options in a way that they want to but they haven't been able to before because it hasn't been presented in that format before.

I then became curious as to how robust this model was in terms of including values around community, aesthetics and so on:

> Suzanne: Are there still things that are important that aren't incorporated into this model?
> CCC employee: Yes there are. …[Things like] social capital, the less tangible environmental things. What's the value of being able to walk down a [nice street like the one shown on a poster in the interview room] like this as opposed to walk along a drain? What's the value from that? There're a whole lot of things. There are a whole lot of things that don't lend themselves to valuing but you need to think that they are important and say that they are important. And put some effort into valuing them because otherwise they will be discounted and ignored.

Because this approach commodified intangible, qualitative aspects of urban life it is rather a better example of tweaking or modification of the status quo than any radical

challenge. While this seems to present a challenge to current financial orthodoxies on a superficial level, because it, I this is more an out as a good example of incremental change, or the tweaking, to existing institutions because it actually legitimised current monetary policy rather than challenged it. It did this by converting often intangible, qualitative aspects of urban life into a quantity with a financial value that could then be bought and sold like any other commodity. In this way it stands in contrast to the approach of those who would see many of our current accounting procedures, financial incentives and monetary policies as major impediments to 'true' sustainability and that need to be totally dismantled. Once again, therefore, the concept of sustainability appears to accommodate a full range of attitudes and beliefs which are enacted and implemented in vastly different ways.

Competing Demands and the Tragedy of the Commons

An important point underlying the above quotation concerning the monetised model is the persuasive force of 'hard figures'. Despite this persuasive power, strangely, in much of the talk surrounding urban sustainability economic dimensions were often alluded to obliquely. I call attention to the strangeness of this sideways approach because money, budgets and profit seemed to be on everyone's mind, though few were willing or able to articulate their position in the context of urban sustainability. In other words, while talk around sustainability seemed easy enough when limited to bio-physical environmental concerns, the interviewees became less confident and less coherent when asked to balance these with other competing demands, particularly those of a financial nature. The following excerpt from an interview with a City Council planning team member is a good example. He was telling me about a programme Environment Canterbury is running:

> That programme, there's a strong emphasis on education rather enforcement. Carrots rather than sticks. They get all the people in the area together and tell them about their waterways and the state of them and ask them what they want. People always say they want clean water. So then they say well this is what you have to do.

Given that people want clean water and that we also know 'what we have to do' I asked why the streams were still heavily polluted. The issue suddenly became more complicated:

> Planning team member: Well the focus is on getting [farm] stock out of streams. It might take years because it can cost $30-40 thousand to build a bridge for stock. And to fence off all the streams…We're talking about quite a lot of capital expenditure.

Again and again I encountered examples where efforts directed at implementing even the more simple aspects of bio-physical environmental sustainability failed in the face of 'economic realities'. This was the case with even the most basic of steps as shown in this next quotation from a fervent advocate of recycling:

> Suzanne: Well I'm looking at urban sustainability...
> Businessman: Oh, it is a nice ideal, but it has to have a practical bent to it and recycling is a good way. People are getting used to it. We've got a shredder here, and this morning Joy said 'you can put more through the shredder, we've got somewhere for the paper to go'. And someone who breeds mice wants the paper! That's great because we go through reams of it. I think there're probably avenues for more and more of that. That must be the next move – to take the compostable material out of the rubbish bins. But that takes time and it might not be financially viable…

In both these examples, even seemingly straight-forward, easily implemented bio-physical environmental sustainability is exposed as complex when set against financial imperatives. Significantly, this was rarely discussed. Instead there appeared to be a fairly widespread endorsement of a fiction that being green and being

profitable are always compatible. The ‘clouds of positive affect’ identified by Netting (1993, in Stone, 2003) that surround sustainability seems to provide a convincing veneer of congruity. This is sustainability’s dirty secret: green business is not always profitable, and being financially viable sometimes means compromising one’s environmental ethics.

The all-too-frequent incompatibility between these two led to a kind of discursive war of words centred on survival. While eco-activists have long drawn on doomsday rhetoric and alarmist accounts of imminent disaster, my results indicate that certain business interests have begun to use a similar approach in order to justify their actions. This is evident in the following quotations which highlight some of the similarities in the discourse adopted by both eco-activists and economic interests:

> Urban interest group representative: It [urban sustainability] means an ideal which the planet will enforce one way or another. We will reach a new equilibrium that is sustainable. But sustainability of life as we know it now, human society, Western lifestyles, are a pipe dream. So what does it mean now? It means an interesting future where we are on a path to try and achieve sustainability. Where we try to make the crash landing which is now inevitable as soft as possible while we adjust and try and make provisions for breakdowns of systems.
>
> Suzanne: What does it [sustainability] mean?
> CCC Planning team member: To me it means we can continue doing something in perpetuity.
> Suzanne: Do you think we can continue on in perpetuity?
> CCC Planning team member: Continue what? It depends what it is we’re trying to do. If humans maintain their current behaviour we’ll probably be dead before much longer. But I do think we are improving in some ways with our relations with mother earth. I’m not sure that we’re going fast enough. We may still be on the path to self-destruction.
>
> Real estate developer: The reality is that as a businessman your main concern is survival. It doesn’t matter if you’re a big company or a small one you don’t know if you’ll be there in 5 or 10 years time. Your competition may rub you out. Many

> people think that big business controls the world. They don't control a damn thing in my view. In fact I see corporates as being particularly vulnerable because they can't move fast enough. They're bureaucratised and if you look back at the leading companies 20 or 30 years ago you wouldn't know half the names. They've all been rubbed out or merged. Gone under. The life cycle of a company is remarkably short. It's the same in the development game. You can be a rooster today and feather duster tomorrow. We're only as good as our last deal. If we stuff up we're goners. It's hard to be right all the time. We carry the risk of these things all the time. So survival is the main thing.
>
> Suzanne: Is there a problem with profitability and being green?
> Businessman: Well, if it's not profitable it doesn't survive. Totally green…I suppose the alternative is that we drown in our own shit. You can't make money without resources. But there's still this feeling in New Zealand that it is bad to make a profit. But if you don't have profit, you don't have businesses.

In all these examples, the interviewees used the notion of survival as a justification for their actions and as a way of prioritising their cause by adding this compelling element. The above quotations do more than establish survival as a key component of the discourse around urban sustainability therefore; they also suggest that the policy spaces of the economy and the environment not only overlap, but that they actively compete for support and resources. Many interviewees, including this planning team member, were able to provide examples of this:

> Suzanne: You said that we knew how to be more sustainable but, if we know that, why isn't it happening?
> Planning Team Member: It's the tragedy of the commons. Because the effects are externalised. Money drives the modern economy. Say for example there's a company that produces chairs and one of the by-products is something that gets tipped in the rivers, for them to clean up that waste would cost them money and that would reduce their profit. That waste going into the river has a negative effect but they don't feel the effects themselves. The effects get averaged out across the community and the ecosystems. So that's the tragedy of the commons argument.

While it may seem self-evident that the goals and aspirations of private interests and environmentalists do not always align, such incompatibilities do not generally feature in official versions of urban sustainability. Instead these tend to portray the concept as involving win-win solutions for both business and the environment. Yet, many of the interviewees were keenly aware of the difficulties associated with being both profitable and green and blamed this divergence of interests for the failure of the concept to generate widespread understanding and support, or to modify people's behaviour in meaningful ways.

Risk and Reality: Global Problems and Local Issues

A further problem with stepping beyond relatively limited bio-physical environmental definitions of sustainability is making connections explicit between some of the more serious global problems and their local manifestations. Indeed, the difficulties involved in making these ties was a source of frustration for some interviewees. I have already noted one case where the interviewee commented that 'we almost need more floods…to make people aware' of global environmental issues. Though this represents the most misanthropic of examples provided by the interviewees it does raise questions about what sorts of evidence urban practitioners need in order to understand global risk and the consequences of their own actions in the local environment. The following excerpt is a good example of this:

> Suzanne: What about some of those global issues, like peak oil?
> Real estate developer: You have no idea how tough it is to make money. Hugely tough. It's hard to make money because it's so competitive in most industries. There are so many issues to deal with and cost overruns and all the rest… They have to pay the wages and the subcontractors and …So that would be

> the least of my worries as far as the oil situation is concerned. I would tend to the Lomborg thinking. I'm yet to be convinced.
> Suzanne: What would convince you?
> Real estate developer: Good hard evidence like signs at the station: 'No gas today, none left'. I feel quite comfortable with that possibility and I think these guys [planners] should be worrying about real issues that we face everyday here and not getting off on all that esoteric stuff.

Though some would think it absurd to deny the concept of peak oil, this practitioner was not alone in his scepticism. These two positions were contrasted very nicely in two interviews with people from different professional practices who had a common interest in a particular piece of council-owned land. The first interviewee is a fervent advocate of bio-physical environmental sustainability in urban environments and was familiar with many global issues, while the second is a Residents' Association representative who has been very active in this role over the past few years:

> Interest group member: Whatever time I have left over is spent with the Agenda 21 forum which is another organisation. And our current project is looking at a big area of City Council-owned land at the showgrounds. The land adjacent to the showgrounds is the Curletts retention basin which is an area of open-space and floodplain and a lot of people have been using that land for recreational purposes and we're doing interviews with all the users of the park and some potential users to see how the park can be managed in terms of sustainability to achieve better resource efficiency on the site to reduce traffic generation and so on. So we're looking at an example of sustainability planning.

> Suzanne: What about in the future? What sort of issues do you think will come up?
> Residents' Association representative: We had a group approach us to speak at our meeting 2 or 3 months ago and they were a professional body made up of professional people like civil engineers and architects and all this sort of thing. And they want to see it [the Showgrounds] utilised properly and so forth. And it was quite funny, they said that in 10- 20 years time of course, the number of cars on the road will be considerably decreased and of course we just laughed at them. This was their idea. Because we're going to run out of fuel and all that and you know, and there's just not going to be the cars around. I'm not sure how

> they think we're all going to get around! Go back to horse and cart?! I just don't know what planet they're from. So this was quite laughable. Of course, they're developing other forms of fuels and so forth. You know, petrol probably will run out some time but they'll be developing other forms of fuel. I don't think we'll be back to the horse and cart.

This certainly shows the diversity of ways in which global bio-physical environmental risks are understood and, as corollary, acted upon. This was made clear in the recommendations each was making for the showgrounds and their proposals for development of that land. The first interviewee considered it in terms of resource efficiency and the minimisation of private travel to the site by connecting it to local people. The second interviewee saw it as a resource for the city at large based on a conviction that easy personal automobility will continue indefinitely.

The focus of sustainability and the scale of the problems accommodated under this rubric clearly leads to additional problems around clarity, and if this is the case for relatively well-defined and well-publicised bio-physical environmental problems, one can only imagine the confusion that would be generated should socio-economic issues like Third World debt be added to the mix. So while the limited bio-physical environmental sustainability of the last chapter had its disadvantages, so too does the holistic perspective which tries to forge connections between a range of different, sometimes contradictory and often nebulous, issues and goals. While large scale, self-generated risks need to be addressed, it is often difficult to find the beginning of the thread that ties causes and consequences together in everyday life.

Sustainability: A Matter of Time?

Along with the possibly irreconcilable positions of certain business interests and environmentalists, another area in which the urban sustainability discourse becomes unclear centres on the treatment of time and the timeframes within which urban practitioners work. The confusion that results from adopting different timeframes for sustainability is evident in the following excerpts:

> Group housing representative: The country's full of people who are short sighted. Auckland city has a massive problem now with transportation and it's the capital of New Zealand in terms of population and industry and so on. The transportation system is in a mess. Many years ago [the mayor] wanted to put an underground rail system through Auckland but he was laughed away and now look at the problems they're facing. A lot of the costs to the country [could have been saved, but it was] hoo haaed away. All it is is 'save the dollar' mentality. Short term. No long term thought going in to it.
> Suzanne: Do you see the same kind of thinking in the building industry?
> Group housing rep: We've had it: The leaky building syndrome.

> Suzanne: Do you have any thoughts on how some people use the term [urban sustainability]?
> Residents Association representative: Well, that's a hairy question. Probably some people would use it to their advantage for a quick buck. So actually getting in and saying I can do this, I can develop this and that because at the time economically it's very viable. But in 20 years time it isn't. Take the centre of the city for example. You're going out [for shopping and entertainment] to the suburbs [suburban malls] now and the whole centre of the city is fading. We haven't got any underground to get in there easily and parking and everything. So probably for a quick buck is probably when it's used. Economics at the time. Sustainable at that particular time but what about the future?

One of the factors prompting a pursuit of the 'quick buck' is the quest for certainty. This was a theme that emerged quite strongly in interviews with urban practitioners in the private sector. The flavour of their comments was that trying to see the future of

10, 15 or 20 years time was too difficult. It made better economic sense, therefore, to work with the certainties of the moment:

> Group housing representative: Sustainability? I suppose there are bits and pieces like your heat and that sort of thing. Energy efficient heating and people trying to push solar panels and that sort of thing. But when you start getting out of the norm there's a cost. There's one guy a few months ago trying to push these solar panels but to set it up was going to cost 15-20 grand! Just to set it up. To recoup that money might take 10 years! I can't see the value to me personally in doing that, because you don't know where you're going to be in 10 years. And all you're doing is setting it up for someone else. But that's purely looking at it as a dollar value.

> Real estate developer: That doesn't mean that in 20 years from now that everybody will have the same opinion [about the success of the subdivision] because trends might change and the emphasis might go away from having all those parks and everyone wants to go to live in the middle of town because you can't use your car anymore. It's hard. You can only look so far ahead into the future. You can only make it sustainable to those people who first come into it and for the next, this is ball park stuff, for the next 10 years. Anything further than 20 years is getting…well…crystal balls don't go that far out.

The effort to reduce long-term uncertainty clearly fed certain kinds of behaviour some would consider unsustainable, such as not including solar hot water facilities in new homes or planning subdivisions that do not enjoy good access to public transport.

This does raise some interesting questions about the appropriate timeframes for sustainability and the structures that subtly support a focus on the immediate future. At least two examples from the interview data suggest that year-by-year accounting, for example, does little to encourage a more long-term approach:

> Urban interest group representative: It's difficult to convince people to look at the long term picture and not just the short term. Politicians look until the next elections, managers look until the financial year ends. It is to convince them to look

> further than that instead of just fixing something now even though it is conventional economics. There, the future is discounted. So how do you convince people? The economy seems to be the bottom line to convince society currently but even when it is good economic sense it doesn't always work…I'm trying to get the 'Business X' to see that they have to spend an extra $27 000 per year and some one-off costs and with that investment they can have a 20% reduction in paper use. And this will save them more than $300 000 per year. But they won't get it in the first year. So the first year, it's money out, but from year two onwards they get a quarter million dollar gain and it will be on-going. However, they only look at this year's deficit.
>
> Real estate developer: For a company like ourselves when we look at developing big sites obviously we look at the financial returns that we might be able to get from it. And the way we do our financial analysis is similar to a lot of large companies, we do discounted cash price, so we look at the value of our money over time. So the longer the period of development, the harder it is to get it to work financially. Because we're looking at the net present value of the property we'll be getting. So if it's going to take ten years to get a million dollar profit, the value of that million dollars in 10 years is nowhere near as much as it would be if we got it in 5 years. So when you keep that in mind, when you look at master planning a big project like this, the more areas that we can operate in and develop at the same time, the shorter the time frame that we can get the overall project, the better the financials will be. And it's not necessarily the better they'll be in total dollars, but in the value of those dollars because it's shorter time. It helps if we can shorten that period.

Once again, such examples raise interesting questions about how institutions and structures around commercial practices, including discounting and annual tax returns, might be established or modified to encourage a long-term view.

Social Sustainability

Thus far I have focussed on bio-physical environmental and economic aspects of sustainability because, in the first instance, 'the environment' ostensibly dominates this discourse whilst, in the second case, economic interests constitute a less overt but

no less powerful influence. I have not, however, said a great deal about the social dimensions of urban sustainability and it is to this task I now turn.

One of the primary reasons why social sustainability has had such a modest role so far is because it was not often the focus, or even a part of, talk about urban sustainability. This is not to say that social issues were not addressed at all, just that such talk rarely came up in this context. This lack of engagement with social issues under the rubric of urban sustainability accounts for the paucity of data reported here, and I have to resort to what has become a well-worn argument; that a lack of data is still data. This is particularly interesting given cities are essentially agglomerations of people first and foremost.

I have already noted some distinctions in the literature that have led to my categorisation of three types of social sustainability (maintenance, development and bridge sustainability[46]) and here I outline the ways in which the data spoke to these themes. The first of these is maintenance sustainability and it was certainly possible to identify scattered examples of this within the interview data. However, it was far more common to observe great conflict over what to maintain and what to change in order to achieve bridge sustainability where certain aspects of society are believed to be in need of change in order to bring about bio-physical environmental sustainability. The next quotation is a good example of this as it illustrates the difficulties of persuading people to walk to their place of work or school when there are values, such as safety or social status to consider.

[46] 'Maintenance sustainability' refers to the preservation of socio-cultural characteristics in the face of forces of change; 'development sustainability' addresses poverty and other inequities; and 'bridge sustainability' concerns changes in behaviour in order to achieve bio-physical environmental goals (see pages 56 to 62).

> Residents'Association representative: I don't know where the people in Milnes Court are going to go to school. I don't think they're zoned for Halswell. And I think the first Milnes are zoned for Rowley. Now Rowley would not be a school that those people would want to send their children to. Not because they couldn't walk to school but because Rowley is a very low socio-economic area. And they won't want their kids to go to school with kids who are disadvantaged. Most parents don't want that in case their kids get mixed up with the naughty ones. So I don't know what's going to happen to those children or where they go to school now because Halswell and Oaklands have closed rolls. I don't know where people from Aidanfield are going to go.

In this case, walking to school (bridge sustainability) was pitted against avoiding behavioural problems (maintenance sustainability), but more commonly, the conflict was situated between bridge sustainability and (over) consumption which has come to inform particular lifestyles and accepted notions of quality of life. The following is just one example of this kind of talk:

> Interest group member: We are educating all the time of course. And our children have 5 years at home and what they get there in terms of education is random. And then they go to a school system that doesn't do anything particularly wonderful in terms of giving them an interconnected, holistic view. And that's just a small part. A greater part is them out there exposed to all the other stuff in society, the bulk of which, or the best funded of which, are all those commercial messages. This is what you need in order to be successful and enjoy life. So we're educating them in exactly the wrong way for survival, for sustainability. Why is this education, why is advertising happening this way? It's to serve the bottom line. The bottom line is money and to keep the system functioning.

It was a reasonably strong theme, particularly among well-placed civil servants. As one Regional Council manager, for example, pointed out 'You can teach people about the environment and regulate against adverse effects, but how do you regulate against a need for 7 bathrooms'? Another senior member of the Ministry for the Environment

also mentioned this in a discussion about the fragility of cities and what happens when the systems that actively support life in the city breaks down. He view was that:

> When you cut the lifeline stuff, the order that goes with them and the security, you get anarchy. And you get a crude tribalism reasserting itself. If order breaks down and the supplies of life's necessities go, which these days includes lattes and chardonnay, you get absolute chaos.

This raises some interesting questions about our ability to reconcile quality of life (as indicated by the bouquet and taste of one's pinot noir) and a bridge sustainability based around bio-physical environmental limits.

There was less conflict between these two forms of social sustainability and the third strand that I labelled development sustainability. This is because the development side of sustainability *was very rarely mentioned*. If it was brought up at all it was generally subsumed rather quickly into one of the other two strands of sustainability that I have already outlined. The following highlights this tendency:

> Residents' Association representative: Sustainability is really about not making things worse. So that you can have development so long as it doesn't actually wreck the environment. It's a bit like the boiled frog, that analogy. You have a frog and the water is cold and you put in a little bit of hot water and the frog doesn't notice, and a bit more. And you raise the temperature quite a bit and the frog hasn't noticed it until the point where the frog is dead. And that's a really good analogy for sustainable development. You can reach a point, and it's a fine line, and you can keep raising all these things, you can keep adding subdivision after subdivision but it reaches a point where you've got total chaos and unsustainability or the death of rivers or the death of communities. Sustainability to me means that you really do have to balance things and so sustainability is about environments, it's about people and it's about communities so if any of those things get out of kilter then you have not got a sustainable system.

Only one respondent made an explicit connection between bio-physical environmental degradation and social development. He argued that the only way to solve environmental problems was to make people richer. In short, my results show a widespread neglect of this aspect of sustainability within the wider discourse; a somewhat surprising outcome given its importance in the original arguments for sustainable development.

A Balanced Tripartite?

In summary, the holistic version of sustainability encompasses, and attempts to balance, at least three dimensions; the social, the economic and the bio-physical environmental. This is what gives sustainability its novelty in relation to other, longer-standing ideals and it also accounts for some of its broad appeal. On a superficial level, at least, there is something there for everyone.

Dig beneath the surface, however, and there are some fundamental problems with the concept of holistic sustainability, not least of which is its incredible complexity. The results demonstrate significant problems even articulating a coherent account of holistic versions of sustainability, and this begs more substantial problems with its implementation. This is due in part to the ways in which each of the three dimensions, traditionally treated as distinct, actually melt into each other, overlap and collide in sometimes irreconcilable ways. This is why incremental tweaking of the current system appears unlikely to fully achieve holistic sustainability and subscribers to this version of the concept tend to be more radical in their orientation. Nothing less than demolishing and starting again with new ways, new values and new institutions will bring about a balance between the three elements.

The very survival of the human race is often presented as justification for this radical upheaval, and here we see a counter-discourse in operation as those who could be described as ecological modernists adopt similar terminology. The stance of the latter group is underpinned by a sense that the New Zealand economy is very fragile and that New Zealanders are constantly on the verge of economic ruin with only the most tenuous grasp on an economy at the mercy of global caprice. Actions taken in the interest of short-term financial survival were therefore privileged over distant, 'esoteric' goals such as urban sustainability. The absence of 'good, hard evidence' surrounding either bio-physical environmental limits or social deterioration and injustice make holistic versions less potent, particularly when there are more pressing concerns to attend to here and now.

Of the three pillars of sustainability, social dimensions received the least consideration and were subject to the greatest degree of confusion. While social concerns were often seen as important, importantly, they were not often the focus of talk within the context of urban sustainability. This title is ostensibly reserved for bio-physical environmental issues even among those who saw clear connections between the two. When the social was included, it was usually in the context of either bridge or maintenance sustainability. That these, too, are sometimes irreconcilable was not often made explicit. This points to some significant gaps in the discourse around urban sustainability and highlights some difficulties with the concept as it is expressed even in its more holistic forms.

Chapter Eleven: Discussion

I began this thesis with the observation that the term 'urban sustainability' was gaining currency in official documents and publications (see Appendix One), and seemed to be used with increasing frequency in various other media. Much of this material suggests that the concept might be *difficult* to implement, but not that it might be practically *impossible*, conceptually *contradictory* or inherently *flawed*. There is, however, a growing critique exploring and exposing the term's chiasmatic quality, such that its practical utility and conceptual coherency is questioned. Some of the arguments against the concept are almost as well-established as the concept of sustainable development itself, having erupted in the wake of the publication of the Brundtland Report in 1987. Other critiques are more recent and stem from developments in urban political ecology. Analyses from this emergent field suggest a need to explore the urban sustainability problematic in terms of the politics immanent to the concept that pertain to the very nature of things, to the 'urban' and to 'nature'. Furthermore, the role the concept urban sustainability plays in the transformation and preservation of social and economic goals also needs to be explored. It is this background that frames the discussion of my results.

Locating the Visible City

The first of my results to be discussed here is that of the 'visible city', a title that suggests the existence of an elusive counterpart: the 'invisible city'. This distinction, and the positing of an invisible urban, may appear curious given the city is both obviously and evidently there, and to deny it, as Rescher (2005, pp. 29 - 30) has noted, would be 'not just false but absurd and wildly eccentric'. Indeed, in this light, a

focus on the perceived or ‘representational spaces’ (Lefebvre, 1991) of the city seems quite justified. Yet, much of the literature reviewed in earlier chapters Lefebvre, 1991, Soja, 2000, Merrifield, 2005) indicates that a distinction between perceived space, conceptual representations of space and spatial practice is important therefore, here, I would like to explore why and how this is the case.

My data indicate an overwhelming preference for the idea that cities are manifestly out there, created of tarmac and trees, housing and sewers. It exists, it can be planned, manipulated and administered as an apolitical entity bound to the clear dictates of rationality and reason. This is the spatial city which is physically obvious to us, responsive to quantification in terms of densities of housing, people and functions. This perceived city of ‘representational space’ finds its counterpart in the conceptualised city of ‘representations of space’ found in the City Plan, the Greater Christchurch Urban Design Strategy and the Southwest Area Plan (Lefebvre, 1991). All of these, as I have shown, tend to treat the city as representational space.

This tendency is substantiated by the interview data which suggest a heavy emphasis on the physical city in their descriptions of their everyday professional practice. This focus has been reinforced by messages, both subtle and explicit, from central government as was clear in many of the publications observed as part of this study and a number of interviews. One interviewee, a City Council planner, not only confirmed the emphasis on the perceived spaces of the city but also hinted at the significance of this focus in terms of its effects. As he outlined it, if the physical manifestations of the city, such as air, water, transport and energy, are managed appropriately those nebulous and more subtle aspects of the urban environment will

supposedly ‘take care of themselves’. He saw this as the legacy of the ‘New Right’ ideology of the 1990s, exemplified in the Resource Management Act, which essentially discouraged a focus on anything other than the technical and tangible. This understanding of the city has some interesting implications for the interpretation and application of a concept like urban sustainability.

The technocratic discourse and the visible city

My results indicate that the urban sustainability discourse is profoundly reductionist in that it is predominantly delineated by particular readings of the bio-physical environment counterpoised against less overt, but no less powerful, economic imperatives. It is informed by a realist ontology where nature and the environment are independently extant, objectively knowable and singular, and are therefore able to be revealed to us through scientific principles and practices applied in the urban *setting*. This reading of ‘the environment’ provides us with a number of unproblematic, rational and ‘useful places to start’ in our pursuit of urban sustainability, and include such measures as providing recycling facilities and public transport.

Consistent with a spatial (di)vision of the city and the country, nature and the bio-physical environment are located somewhere ‘out there’ beyond the urban periphery. Artificial administrative boundaries and the remnants of a green belt insulate the city from the country and this hides many of the intricate functional and conceptual interdependencies that exist between the two. While these, such as the need for coordinated growth management, have recently begun to be acknowledged in the Greater Christchurch Urban Design strategy, the interconnections are more often overlooked. The prevalent view is a separation of the city and its hinterland, the

consequences of which are manifold. It ensures nature does not 'talk back' to urbanites to any significant extent; nature-based aesthetics are portrayed as innocent and devoid of political content; and, finally, the spatial orientation encourages an over-reliance on technical solutions to environmental problems, often in a manner consistent with the tenets of ecological modernisation.

The interview data indicate fairly widespread support for this approach, particularly among some interviewees from the private sector whose answer to social inequities and bio-physical environmental problems was to 'make people richer'. The National Party, too, finds it convincing, particularly as it appears to accommodate Member of Parliament Nick Smith's endeavour to be both 'rich and clean' through the identification of appropriate technologies. It is also complementary to the views of some members of both the City and Regional councils' planning teams who favoured a new emphasis on 'neutral' scientific data collection over more contentious processes of advocacy and negotiation. This version of the sustainability discourse finds its institutional home, by accident or design, in the Resource Management Act and in the Environment Court which is the forum for the settlement of environmental disputes. This is presented as neutral terrain in which to solve such disagreements using expert accounts and factual data.

There is a simplicity about this model of urban sustainability which, when combined with the ways it supports certain powerful interests, is quite compelling. It is a city allied to order, reason, profitability and environmental friendliness, overlaid with the kind of social responsibility vague references to sustainability usually connote. However, the problem with this spatial city is simply this: *nobody lives there*.

Locating the Invisible City

The notion of a sustainable city responsive to an unbiased, rational management is attractive on some levels, however, the urban practitioners with whom I spoke clearly had problems ignoring the often intractable disorder that insisted on colouring their everyday professional practice. As a result of this observation it is necessary to discuss some of the ideas underpinning this untidy and insistent, if largely invisible, city. I include in this discussion some of the material developed by Soja (1999 and 2000) on Thirdspace, Flyvbjerg (2001) regarding context, and Law (2004) on multiplicity.

The data clearly showed technocratic versions of urban sustainability to be marvellously appealing on the one hand, but almost impossible to implement successfully on the other. Some examples from the data illustrate this failure: The Environment Court, for example, is clearly able to be negotiated more successfully by some groups than others. The pejorative 'Rich Mans' Act' is a not-so subtle indication of whose interests that are thought to be served by this institution. Those who can afford to pay a range of expert witnesses to advocate their cause are more likely to engender a positive result than those who *merely* have a NIMBY agenda. Another set of examples cluster around 'environmentally friendly behaviour', such as using public transport, which has public support in theory but is often less successful in terms of actual patronage.[47] These examples clearly relate to Hanson and Lake (2000) and Portney's (2003, p. 128) concerns around the viability of technical solutions:

> If a city has an internal air pollution problem, so the argument goes, correcting the problem is a job for professionals…[But] if

[47] Indeed, a group acting on behalf of residents in Northwood has recently lobbied Environment Canterbury to stop public transport entering their semi-gated subdivision.

> air pollution is a purely technical problem, then why have we not corrected the problem years ago?

I would argue that the phenomena that intrude on the successful implementation of such strategies are simply those associated with actually *being*, though, as Blumer noted, 'this require[s] us to recognise that a human group consists of people who are living' (1980, cited in Plummer, 1998, p.85). It is this lived-in-ness that Soja was concerned to explore in Thirdspace (2000), that Flyvbjerg (2001) attempted to engage with in his discussion of phronesis (practical commonsense), and it underpins Law's (2004) concept of multiplicity where different realities come into being through practice.

Thirdspace

My data showed an overwhelming emphasis on what can be considered elements of the Firstspace or 'representational spaces' of cities (Lefebvre, 1991; Soja, 2000). Most of the technocratic solutions discussed above rightfully belong in Firstspace and here, urban sustainability manifests as pollution levels, the inclusion of greenbelt and greenways, waste products or the provision of public transport, all administered within certain boundaries and zones. Secondspace overlays this city and provides symbolic content. This is a conceived space of plans, art and other abstractions, including such ideas as the Garden City. This space is also informed by concepts like sustainability but, most significantly, it falls short of accommodating the dynamic quality of Thirdspace. It is this active aspect of urbanity that makes the city *lived in*, rather than a mere physical site that reflects social concepts and it matters because it is here that urban sustainability is actually *made*. It is in Thirdspace that the messy, often

difficult and sometimes contradictory concept of urban sustainability is practiced and made real.

Often, it is where resistance to the technocratic or fanatical versions of sustainability takes place as they impose upon residents' quality of life, established traditions or other widely accepted and agreed upon commonsense understandings (Godschalk, 2004; Vallance, Perkins, and Bowring, 2005a and b; Vallance, Perkins and Moore, 2005). Thirdspace is where 'maintenance' and 'bridge' forms of social sustainability often come into conflict and the data contained plenty of examples of this: infill housing versus low density lifestyles, public transport over private motor vehicle use, electric heat pumps over solid fuel burners, water conservation over multiple bathrooms, reduced electricity demand versus hot outdoor spas in winter, and so on. Negotiating this conflict is very problematic in a democracy where issues around quality of life play an important role in election promises and strategies, and in urban residents' evaluations of what is appropriate urban form and practice.

Given its importance, one might wonder why Thirdspace and the conflicts and cooperative ventures that activate it are so often overlooked by central and local government. One answer is that the emphatic focus on technocratic versions of urban sustainability is supported by an ideology that appears to confuse an *understanding* of this Thirdspace with *social engineering*. For planners especially, the minutiae of daily life now lie strictly outside their sphere of professional practice, though ironically, this hands-off, laissez-faire approach has just as much effect as that of hands-on intervention. Also ironically, this studious avoidance of everyday urban social life is taking place in a climate of quite shameless promotion of values and ideals when it

comes to private interests and marketing.[48] Those in this industry are well-aware of the value in understanding everyday, prosaic concerns about anything from pimples to retirement homes.

In terms of sustainability, there appears to be a tension between 'telling people what's good for them' and ignoring the quotidian to the point where technical solutions fail due to a lack of understanding or because they do not connect closely with what appears to be happening in everyday life (Macnaghten, 2003). While cleaner energy generation or the reduction of toxins are sensible places to start in a technical sense, my results suggest that this approach fails to connect with people as they go about their daily lives in Thirdspace. The interviews reveal an important irony in this regard as even the participants who enthusiastically espoused professional allegiance to technical fixes simultaneously struggled to implement them in their everyday practice. They were continually confronted with their own ambivalence, budgets, personal preferences, schedules, and frailties. This is consistent with the findings of others (Ingold 1993, for example) who use different terminology but likewise conclude that much of the discourse around sustainability culminates in 'a process of separation, detaching us from the domain of lived experience' (Macnaghten, 2003, p. 81).

Phronesis and practical wisdom

It is in everyday life that abstract concepts like urban sustainability are played out. It is also in this area that possible contradictions and ambiguities attached to such concepts become problematic in definite ways. What, for example, does 'urban sustainability' mean to the home owner who would like to install an expensive solar

[48] A particularly good example of this, as outlined by Eric Schlosser (2001) in his *Fastfood Nation*, is the new trend for private enterprises to supply schoolbooks with promotional material on the covers.

hot water heating system, but who may be thinking of moving to a different area to be closer to a particular school? What can the concept offer those who would replace a single, detached dwelling on a wooded quarter acre section with three townhouses surrounded by impervious surfaces? Does the concept help private enterprise balance the business imperatives of today with the potential market of an uncertain future? How does urban sustainability guide a decision between the greater perceived safety of a gated community and social exclusion and inequality? These examples from my research illustrate that what is practical is not always consistent with what is ideal and this raises questions about how a difficult, ambiguous and contradictory concept like urban sustainability can help guide such decision-making. In many ways, it appeared that the concept was fulfilling Overton and Scheyvens' concern that it had 'little to inform practice beyond principles and platitudes' (1999, p.1) though this might be because we are too accustomed to believing there is one, single, best answer. This situates Law's (2004) work as important in this discussion.

Multiplicity and singularity

Many of the interviewees made bio-physical environmental concerns a core part of their version of urban sustainability and this can make it appear as if the concept is singular in meaning. Law is critical of the notion of a singular world which he describes as involving 'definite and limited sets of processes' which reveal a pre-existing world. 'Plurality', though closer, is also insufficient because it suggests merely a conglomeration of different perspectives where realities do not necessarily collide. 'Multiplicity', on the other hand, acknowledges that practice (which is a feature of Thirdspace and relies on phronesis) produces not only different *perspectives*, but different *realities* as well. These realities are constantly bumping

and crashing into one another through variations in practice as would, for example, the treatment of 'alcoholism' in the ward, textbooks, out-patient clinics and so on.

My reading of the data is that, like alcoholism, urban sustainability also gathers around it many different realities and practices, some of which can contradict other accounts in the most fundamental of ways. Take, for example, the real estate developer's definition of urban sustainability as not 'hampering growth or interfering in markets unless there is good reason to do so'. Urban sustainability as he practices it presents economic growth as the appropriate goal of sustainability, and the market as the best distributive mechanism of its benefits. 'Interference' should be undertaken only in extreme circumstances. A host of other convictions that make up the hinterland of this reality are implicit or were made explicit in other parts of the interview: the cornucopian human mind, human supremacy over nature, our ability to identify and respond appropriately to bio-physical environmental limits, the easy reconciliation of economic growth and social development, and so on.

This hinterland is enacted via a method assemblage of indices, research projects, traditions, organisations, facts and evidence. This particular interviewee, for example, called upon the findings of the Demographia Survey of median house and income multipliers (to justify his anti-zoning stance), Bjorn Lomberg's *The Skeptical Environmentalist*[49], which contains 'hard facts' and 'other data' that suggest 'we don't

[49] This has been described as a book that:

> Challenges widely held beliefs that the global environment is progressively getting worse. Using statistical information from internationally recognized research institutes, Lomborg systematically examines a range of major environmental issues and documents that the global environment has actually improved. He supports his argument with over 2900 footnotes, allowing discerning readers to check his sources. Lomborg criticizes the way many environmental organizations make selective and misleading use of scientific data to influence decisions about the allocation of limited

have a [bio-physical environmental] problem'. The way in which this picture of reality is constructed ensures certain actions are seen as reasonable and rational (non-intervention in, for example, social affairs) while others (such as redistribution via taxation or even zoning) are 'unsound', irrational, overly interventionist.

This hinterland supports a reality that collides heavily with others that also fall under the rubric of urban sustainability but which tend to emphasise social or eco-centric aspects of the term that posit economic growth as antithetical to bio-physical environmental sustainability and social well-being. Accordingly, the practices, the hinterland and the method assemblage that supports them are quite different to that of the real estate developer. The 'facts' that support the call for stricter bio-physical environmental guidelines or even a radical overhaul of the current growth model are different, as are the appropriate distributive mechanisms for benefits and externalities.

The results in *practice* are very different too. These can range from activities like recycling facilities and services becoming essential features of urban management, to alterations to the very physical form of the urban environment – in our houses, in our subdivisions, and in the extent to which cities are compact or dispersed. Such practices are what make these differences more than one of perspective. They create realities which actively collude, crash, devastate or annoy each other and they all swirl more or less convincingly under what appears to be a singular term, drawing upon a belief in a single best answer. As a Foucauldian interpretation of the work of Law (2004) and Flyvbjerg (2001) shows, however, a single best answer is only possible in theory. Everyday life, on the other hand, often renders such theory

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resources. The Skeptical Environmentalist is a useful corrective to the more alarmist accounts favored by green activists and the media. (www.lomborg.com/books.htm)

impractical and although my research suggests that this singularity as it appears to coalesce around the concept of urban sustainability is illusory, it does have physical consequences in terms of the built environment, and these are worthy of closer investigation.

The built environment and materiality

Discourse analysis has been a useful approach in this thesis because, in Fairclough's words (1995, p. 40), it exposes 'systems of rules', that make certain things possible but not others. As Benton and Short (1999, p. 2) have pointed out, 'Environmental discourses are less innocent statements of the physical world and more politicised representations'. These systems of representation employ metaphors, natural relationships, agents and so on that constrain and support particular realities, and as such, they are consistent with what Law (2004) presents as components of the hinterland. Some examples from my research include the existence and rightful role of markets and regulatory regimes, the natural relationships between social, economic and bio-physical environmental concerns, and indeed, what might be included in a definition of 'nature'.

In terms of my research, one of the more interesting critiques directed at discourse analysis is a general lack of interest in its geographical implications. Murdoch (2004), for example, argues for a return to Foucault's original focus on the materiality or *governmentality* of discourse where specific discursive practices are reified in the built environment, the physical form of which explicitly enables or constrains particular lifestyle choices, daily activities and movements. This approach entails a closer look at the sets of rationalities that accompany particular discourses. These

discursive fields comprise programmes, plans and procedures that incorporate and rely on various inscription devices that are subsequently forgotten or not made explicit, leaving the illusion of a singular, inarguable reality. Thus, particular rationalities, such as the compact city or, here in Christchurch, the Greater Christchurch Urban Design Strategy, are literally made concrete. Abstract ideas like 'sustainability', 'equality' or 'lifestyle' subsequently take on a physical form which in turn, naturalises further spatial practice (Zukin, 1999; Knox, 2005). This transmission from rationality to reification is evident in a comparison of the rhetoric used by, for example, the real estate developer with an explicit goal of influencing urban form through zoning reform and Malcom Mason's (1904) commentary on the moral effects of small houses which mean 'ill health, discontent, and a lack of interest in the home' with a corresponding pejorative fixation with the 'public house and theatre' (in Tennant, 2000, p. 28).

This raises some important questions about the impact of the largely technocratic and reductionist discourse that I identified in the course of my research. What is being naturalised? What is being marginalised? Whose interests are best served by these processes?

Urban political ecology and economy

Much of the power and popularity of the technocratic rationality that informs spatial practices stems from its appearance of neutrality. Owens (2005), for example, has noted that many political and ethical choices masquerade as technical ones through the application of supposed objective or scientific techniques. Knox (2005) also

makes some interesting points around this theme in his assessment of the most recent enchantment of the suburbs. In the context of my own work, though many of Christchurch's newer subdivisions meet the requirements outlined in the Resource Management Act of having a 'no more than minor [the bio-physical environmental] effect', they are similar to those Vulgaria Knox has identified and which are characterised by 'competitive consumption, moral minimalism, and disengagement from notions of social justice and civil society' (2005, p. 34). This provides a useful foundation from which to explore the questions posited earlier around marginalisation, politics and the promotion of some interests over others. Such discussion is particularly timely given the growing disparities in income and opportunity in New Zealand.

In line with other Anglo-American countries, including Australia, the United States and United Kingdom, about ten per cent of New Zealanders hold more than fifty per cent of the total wealth. Conversely, the bottom half of the population hold less than 3 per cent. Unlike other industrialised countries, New Zealand stands out because sixteen per cent of the population own (owe) 'negative' wealth. Comparable figures for other countries include United States at 8 per cent, Canada at 6 per cent and Australians at just 4 per cent (Skilling and Waldegrave, 2004). According to the BigCities Project, on average, $10.00 of every $100.00 is spent in New Zealand servicing interest payments.[50] Such financial burdens have consequences in other areas of life. In Christchurch, for example, approximately 255[51] people live in 'temporary' dwellings in the city. According to the Salvation Army's report *From Housing to Homes* (2005) these figures are set to rise as the cost of renting and home

[51] Based on figures obtained from the BigCities Project, www.bigcities.govt.nz

ownership increases in relation to real income. According to the *Demographia* (2004, 2006) report comparing the affordability of housing in various cities worldwide, Christchurch is 'severely unaffordable' owing to the substantial gap between median household incomes ($42,700.00) and median house prices ($225, 000.00). Other statistics paint an even more dire picture: The Ministry of Health (2001) estimates that one in seven women experience domestic violence and New Zealand is one of only five OECD countries where child homicide figures have increased over the last 20 years (Doolan, 2004). Only the United States has a higher proportion of its population behind bars.

The illusion of wealth and good health has formed part of Thorns' (2002, pp. 70-76) discussion of the postmodern city. He noted that changes in production, labour process, the state, ideology and space have resulted in two distinct lifestyles. First, there are the 'yuppies' devoted to an 'individualistic lifestyle built around conspicuous consumption' and who see such consumption as a kind of identity project (Warde, 1996). The second are the 'underclass of the excluded' (Thorns, 2002, p. 76). The former are able to participate in the successful, extravagant city of the theme park (Baudrillard, 1988), along with its cafés, malls and casinos, while the latter are increasingly asset and cash poor. Thorns (2002, p. 76) noted that this gap is 'masked by the illusion' of common cultural experiences that frequently dominate popular media and that use, in the case of Christchurch at least, popular synecdoches like The Garden City to generate a sense of belonging and shared experience.

In addition to this established branding purpose, economic sustainability is also served by the illusion of health, glamour, fun and opportunity. As Newton (1995, p. 161)

argued ‘The future prospects of cities and regions in advanced industrial societies depends on whether they can continue to compete, both locally and globally, as places where it is attractive and profitable to work and… visit’. In the emergent discourse surrounding the so-called creative city (see Florida, 2003; Kotkin, 2005; Peck, 2005; Friedmann, 2006; Scott, 2006), liveability and quality of life tend to take priority over genuine discussion about needs and rights based on material conditions (Fraser, 2000, in Fincher, Jacobs and Anderson, 2002; also Eade and Mele, 2002). Other urban manifestations support this: glitzy casinos, ‘hip’ bars and clubs, shopping malls, well-tended public gardens with water sprinklers strategically placed to discourage the unwary vagrant. While these facilitate a particular version of quality of life that is consistent with a discourse of global competitiveness and the creative city, they can actually work against citizens feeling safe and confident because they fail to deal with more fundamental unmet social needs that correlate with violent crime and insecurity. Though less glamorous than glittering new convention centres and spectacular art galleries, dealing with such social concerns is crucial in considerations of urban quality of life. Without a better understanding of these dynamics, we run the risk that neither the needs of the under-achieving under-creatives, nor the creatives themselves will be met.

Much of this, along with the withdrawal from civil society and the disregard for social justice, is hidden to some extent by the discourse of urban sustainability which carries within it connotations of humanitarian concern (Vallance, Perkins, Bowring, 2006). Though the discourse is ostensibly dominated by bio-physical environmental issues, to say something is ‘sustainable’ is to suggest one has at least considered all three elements of the orthodox tripartite, *including* social sustainability. This apparent

philanthropy should be of greater interest to political economists concerned with the distribution of wealth and opportunity, deprivation and hardship in cities.

An appropriate focus for such concern might include a closer investigation of the institutions, both extant and potential, with the capacity to address such a range of disparate issues. Hanson and Lake's view (2000) is that we need to develop and strengthen those institutions that would help us identify sustainable practices in particular contexts and learn how to facilitate these practices, perhaps, as Rydin (1999) suggests, with a focus on how we might actively 'talk ourselves into it' via institutionalised processes and functions. This is similar to the Redclift's advice of nearly a decade ago (1997; see also Le Heron, 2006) where he urged us to look beyond particular aspects of the environment that we will leave to future generations and think about the institutional setting we will need to create in order to manage sustainability. He identified a lack of institutions able to cope with the negotiation of the trade-offs and benefits of different pathways to sustainability; a lack of institutions able to balance the advantages and disadvantages of the promotion of different values; and a lack of institutions concerned with actively changing our behaviour. I would add that there is also a need to redress the widespread focus on the short-term, some of which is institutionalised in annual accounting procedures and election cycles, for example. This was a strong theme in my own research but Low (2002) has also identified this as a significant problem. As Le Heron, in his discussion of Redclift's work has noted (2006), the sustainability literature tends to ignore or undervalue many of the features of common institutional settings in which many ecological and economic decisions are made.

In this regard my research results suggest a need to examine instruments like the Resource Management Act and the Environment Court, and the City and Regional Plans and the way these empower, elevate and legitimise certain forms of knowing, particularly technical understandings, whilst at the same time devaluing others. Furthermore, the extended reach of the Resource Management Act, the Plans and the Environment Court makes it difficult to find other fora in which to discuss issues surrounding community, quality of life, values, equity and justice. This suggests a need to re-conceptualise the city in new ways, and promote the development of flexible institutions capable of generating novel solutions to these age-old problems. Ideally, such institutions would need to be able to cope with the messiness of holistic versions of sustainability and be able to address the conflict between incremental 'muddling through' that parades as rational and considered, and radical or catastrophic change (Lindblom, 1959, 1979; Forrester, 1984; Carvalho 2001; Huber, 2000, Yanarella and Bartilow, 2000; Low, 2002; van Bueren and Heuvelhof, 2005).

An emergent, and therefore as yet untested, instrument - the Long-term Council Community Plans that are a new requirement under the Local Government Act - might go some way towards redressing this shortage. As I write, the Christchurch City Council is in the process of hearing over 400 submissions on its draft Long-term Council Community Plan. Nearly 2000 submissions were made and this represents an almost unprecedented level of interest from the public. As the City Council's CEO Lesley McTurk pointed out, interest of this kind 'shows a high level of engagement by the community…about the way our city looks and feels, and the services they see as important' (CCC website, 2006). The Council's website also states that many of the submissions (1047) were critical of the proposal to 'rationalise' community

libraries and the mobile library service. Submitters' description of the libraries as being 'at the heart of local villages', combined with their role as generators of cultural and social capital, is illustrative of residents' resistance to particular technocratic rationalities that undermine quality of life and the distribution of goods and benefits in the city. Though the efficacy of the Long Term Council Community Plan is yet to be tested, early indications are that at least this new instrument might recognise alternative ways of knowing, though commentators like Memon and Thomas, S. (2006) and Memon and Thomas, G. (2006) remain sceptical.

One reason why faith in the ability of such new institutional arrangement to bring about change is limited stems from the observation that their normative function is compromised by the very conflict that characterises much of the discourse and the practice of urban sustainability (Flyvbjerg, 1998; Hajer, 1995a and b, 1999, 2000; Sharp and Ricahrdson, 2001; Desfor and Keil, 2004). Good communication and shared understandings form the foundation of successful institutional change, yet much of my data suggests the existence of widespread conflict, tension, incompatibility and confusion. Though definite trends are evident - and these form the basis of my distinction between ecological modernists and those more aligned with the risk model of sustainability – there is enormous variation in the data from the interviewees and other texts. The systems of meaning that constitute the urban sustainability discourse overlap and interact in unpredictable ways depending on the context in which they are generated and applied. This has led to a proliferation of prefixes and caveats attached to the concept of sustainability[52], which one supposes

[52] 'Strong' and 'weak' sustainability are often used here to discriminate between those who put 'nature first' and those who put 'money first' (Urban interest group representative).

ought to clarify matters but which might actually make the concept more inaccessible to lay-people and professionals alike.

Bringing the Country to the Town: Nature and the City

With the exception of the Parliamentary Commissioner for the Environment (who published *Cities and their People* in 1998), only recently has central government turned its attention to *urban* sustainability. This neglect of urban areas is no doubt a consequence of the potency of the anti-urban sentiment outlined in Chapter Five which saw cities presented as unnatural and 'bad' and the country as natural and 'good'. This is a little ironic given this dichotomy is based on a highly selective, romanticised reading of nature. White and White (1962, p. 233), for example, pointed out that much of the behaviour we consider most brutal and appalling is actually quite natural. This is an argument John Stuart Mill also used:

> Nearly all the things which men are hanged or imprisoned for doing to one another are nature's every day performances... Nature impales men, breaks them as if on the wheel, casts them to be devoured by wild beasts, burns them to death, crushes them with stones like the first Christian martyr, starves them with hunger, freezes them with cold, poisons them by the quick or slow venom of her exhalations, and has hundreds of other hideous deaths in reserve, such as the ingenious cruelty of a Nabis or a Domitian never surpassed (in White and White, 1962, p. 233).

Nonetheless, this anti-urban, pro-nature legacy has had an impact on the ways in which the urban sustainability discourse is playing out here in New Zealand where two tendencies appear to swirl uncomfortably together. The first is consistent with the technocratic discourse discussed above where the city is a site to be managed in an efficient, rational way based on scientific readings of pollution, emissions, residential densities, reserves contributions based on property value (rather than the functionality

of the space), and so on. The focus is on the hard infrastructure of the city, and this is seen as the appropriate vehicle through which sustainability can be achieved. The second trend relates to the ways in which sustainability as an ethic is often tied strongly to romantic notions of nature as pure, benevolent, and at risk from human machinations. As a result, the interviews revealed a widespread inability to reconcile the urban-as-anti-nature and the sustainable-as-technical.

The implications of this uncomfortable tension are important in the context of recent cyborg-inspired neo-organicist literature where established dualisms, like that of country-town and manmade-natural are reconstructed in relational rather than dichotomous terms (Castree, 2004; Gandy, 2005; Marvin and Medd, 2006). Because the natural and the unnatural co-constitute each other, the city can be seen as a giant cyborg hybrid of machine and organism that acts as a kind of exoskeleton; a concept that has become a cornerstone of the emergent discipline of 'landscape urbanism'. Ironically, and of great relevance to urban sustainability, while this exoskeleton supports city life as we know it, it can also insulate us from a greater awareness of nature's agency and actively hide or mitigate bio-physical environmental feedback loops. These feedback mechanisms might inspire a new awareness of the relationships between people and 'the environment' and lead to changes in everyday behaviour (Fischler-Kowalski and Haberl, 1998).

There was little data in my interviews to suggest how this contradiction between the insulating and supporting functions of the city might be deliberately and consciously resolved. It is interesting, however, to note how unplanned so-called natural disasters impact upon the city. As I write this, a small, rural South Island town called Fairlie

(population approximately 1000) is celebrating having its electricity supply reconnected after two days (or two weeks in some parts) without transmission due to heavy snow. During the same period, New Zealand's largest city, Auckland (population approximately one million), experienced a power outage of four hours. Media coverage clearly constructed these events in terms of Auckland having been brought to its knees while the hardy folk of Fairlie simply got on with it. This is a good illustration of my point that the rural is seen as inherently more sustainable in every way – bio-physical, economic and social - whereas urban dwellers are fundamentally disabled by their context which is removed from nature, intimately connected to an unpredictable global economy and where social relations are characterised by anonymity and anomie. The message from this incident was clear: the further you are from nature the more vulnerable you are when the lights do go out.

That we require new ways of inviting nature back in to the city is the focus of urban political ecologists. It is important that equal emphasis be given to both the ecological and political aspects because, as Clayton and Radcliffe (1996) noted, 'As humans have developed into a cultural species, we have acquired the ability to regulate the pattern of interaction between members of the community and its environment via socially transmitted information rather than biological feedback processes'. In the city, directly experienced feedback is often very partial or in the form of commercial marketing such as advertising. In this context, the environmental justice movement is keen to point out that some sectors of society are more likely to suffer feedback in the form of adverse environmental effects than others. This happens on a global scale, for example, when toxic waste is transferred to impoverished countries, but such injustices have also been shown to occur here in the 'People's Republic of

Christchurch' (Pearce, Kingham and Zawar-Reza, 2006). In such cases it is not only nature's agency that needs exposure but also the mechanisms by which some interests are served over others through the modification and movement of environmental externalities.

Chapter Twelve: Conclusion

At a superficial level, the term ‘urban sustainability’ allows us to conveniently and succinctly express bio-physical environmental, economic and social ideals without actually having to be explicit about the finer points. Yet the aphorism ‘the devil is in the detail’ is particularly appropriate when applied to ‘urban sustainability’ as anything more than the most cursory of investigations exposes this concept as one that is complex, contradictory and contestable. My research has shown that, despite the ‘urban’ prefix, and a growing focus in policy making circles on the city as a location (see, for example, MfE, 2002; MfE, 2003*;* DPC, MED, MfE, MSD, 2003; MfE, 2005b, c and d), the ‘urban’ condition is largely absent from the urban sustainability discourse. It is ironic that despite cities being essentially conglomerations of people, the social dimensions of urban sustainability are generally misunderstood, or simply overlooked altogether. Also neglected in the sustainability discourse is any real engagement with the problems generated by the artificial separation of ‘society’ and ‘nature’, and the country and the town. Furthermore, vague references to sustainability hide fundamental problems around reconciling economic growth and bio-physical environmental well-being, as these goals are not always – perhaps not even *that often* – compatible. Indeed, my research suggests that bio-physical environmental issues have taken a prominent role in the sustainability discourse, with their solution often presented as an unproblematic and apolitical application of scientific objectivity and technological innovation.

If even the more moderate accounts of global warming, ozone depletion, looming resource scarcities and waste disposal problems are to be believed, then the focus on the bio-physical environment is undeniably important and probably long overdue.

Yet, my research raises serious questions about whether this approach is sufficient. Certainly the concept's pedigree in terms of equity and social justice appears to have fallen from the discourse, as have questions about changing the quality of growth, managing risk, and merging the environment and economics in decision-making. Less well-publicised parts of the Brundtland Report (WCED, 1987), for example, also tried to bring our attention to the consumption practices of the more affluent, the unequal distribution of power and influence in our society, and the ways in which these feed many sustainable development challenges. My research has shown that a better *understanding* of the social aspects of sustainability is often mistaken for social *engineering.* Yet, without a better appreciation of the complex ways in which people encounter, understand and apply concepts like sustainability in their everyday lives, many of the technical measures concocted in the name of bio-physical environmental sustainability are doomed to fail. Another unfortunate irony, then, is that the emphasis on 'the environment' and 'nature' in the sustainability discourse not only serves inequities and injustice, but has a detrimental effect on the economy and the bio-physical environment as well.

As a result of these deficiencies, I believe that now, almost 20 years after the publication of the Brundtland Report, the concept of urban sustainability presents us with two choices. The first, more pessimistic, choice involves *dismissing the concept altogether.* My research indicates that urban sustainability is an idea that is perhaps too ambitious and, spread too thinly over economic, social and bio-physical environmental terrain, has fallen short of its potential. Though the term suggests a balance between the three elements of the orthodox tripartite, my results make it clear

that in the cacophony surrounding the term, some voices speak much louder, and more stridently, than others.

The second, rather more optimistic choice is to engage with and implement the concept of urban sustainability in a more robust way. This will involve a return to the issues raised in the Brundtland Report and address better ways of integrating the three elements of the orthodox tripartite. This does not necessarily mean a reconciliation of the different interpretations and applications of the concept uncovered during the course of my research into one 'true' version of sustainability. Rather, I would advocate recognising the multiplicity inherent in the concept as it is acted out through various feats of 'imagineering', discourse and everyday practice. It would involve taking the best of the different approaches advocated by various interests and working out new ways for them to co-exist. In this way, 'sustainability' is neither a goal nor an ethic so much as a process of negotiation, compromise and cooperation.

My research routinely highlighted cases where this approach *was not* taken, and occasions that might act as positive and instructive exemplars were rare. The few instances that might serve to illustrate my point were generally the result of some isolated initiative rather than a new way of thinking filtering into urban governance: a collaborative effort between a real estate developer who wanted to market his subdivision as 'eco-friendly' and a publicly funded organisation oriented towards environmental education and awareness; a fortuitous meeting between a City Councillor and a foreign investor which resulted in improved environmental and economic outcomes in an area experiencing rapid growth in the northwest of Christchurch; a Residents' Association representative who perseveres in this often

thankless position because of his personal connections at Ecan and the City Council who feed him ‘interesting bits and pieces [he] needs to know about’.

These examples indicate that understanding sustainability as a negotiation between disparate interests will generate a new range of challenges that go beyond objective assessments and technological fixes, not least of which will be balancing the recognition of those many voices with *practical action*. Rising to this task is likely to involve the development, or formal recognition, of new institutions, methods, connections, decision-making fora and collaborations between individuals, groups and agencies. Systems theorists have long advocated a multidisciplinary approach to sustainability, but I would go further and argue for an approach that goes beyond disciplinary boundaries in order to achieve those necessary connections with everyday life and professional practice. While there are a multitude of possibilities here, I see new foundations for improved interaction between the public and private sector as particularly critical. My research suggests that, at present, the relationship between the two can be quite antagonistic or even combative. As a result, much of the expertise, many of the resources available to, and ideas produced by, the public sector are denigrated by private interests as ‘esoteric stuff’ or even ‘nonsense’; conversely, many of the methods and innovations the private sector uses are dismissed by central and local authorities as mere marketing tools or tricks. I see the potential for widespread and truly worthwhile benefits to be derived from a better collaboration between the two, such as those achieved in those all too rare examples outlined above, including better information flows, improved community support and acceptance of new developments, better environmental outcomes, and so on.

The development of new institutions and methods may have to be accompanied by the dismantling or modification of those already well-established, however. Current practice in the building industry, for example, is so moribund because of a reliance on 'accepted solutions', regulations and consents procedures that innovation is almost impossible, except perhaps in terms of decoration and stylistic affectations. In this case, as in others, local and central government agencies might obtain better outcomes by moving away from their role as rule enforcers and instead don the mantle of facilitators in the negotiation process, bringing together those disparate voices in a collaborative effort.

Home to over 85 per cent of New Zealand's population, generators of both wealth and wastes, physically bound yet intricately connected to range of far-flung places and people, the city has huge potential in terms of sustainability. If anything, references to urban sustainability are more commonplace than when I began my research 3 years ago. Yet, though the concept continues to gain momentum in the short term, there is a strong possibility that it will become a defunct and meaningless term soon enough. This would be unfortunate because the inclusion of social, economic and bio-physical elements sets urban sustainability apart from other movements with a more limited mandate and holds the promise of a balanced approach to urban management. It is my hope that this research provides some insight as to how the paradoxes within the concept might be addressed and its promise upheld.

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Appendix One

This appendix supports my claim that references to the terms ‘sustainability’, ‘sustainable development’ or ‘sustainable management’ and ‘urban sustainability’ are increasingly ubiquitous. The selection also indicates a preference for inclusive definitions, such as that used by the WCED, i.e. 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (1987, p. 40). This comprises bio-physical, environmental and social goals, however, it is clear that the Ministry for the Environment has been most prolific in terms of publications. A perusal of these documents also suggests that the amalgamation of these three elements is difficult; despite favourable beginnings, such publications often emphasise one dimension over the others.

Legislation

‘Sustainability’, ‘sustainable development’ or ‘sustainable management’ features in numerous pieces of legislation: *The Environment Act* (1986), the *Conservation Act* (1987), the *Resource Management Act* (1991), the *Fisheries Act* (1996), the *Hazardous Substances and New Organisms Act* (1996); the *Energy Efficiency and Conservation Act* (2000); and *The Resource Management Amendment Act* (2004).

Governmental Publications

Recent governmental publications with either sustainability or sustainable development in the title include:

Towards Sustainable Development (MfE, 1992); A document prepared for the United Nations World Summit on Sustainable Development, Rio de Janeiro, 1992.

The Government's Approach to Sustainable Development, (Beehive, 2002). In Chapter 1: Introduction – What is Sustainable Development –Vision, Principles, Explanations, we are told that 'for New Zealand the central issues are growing our economic wealth in a way which enables us to provide for ourselves and future generations without compromising the quality of the environment'. Social development must go hand in hand with economic development, and both must be seen in an environmental context' (p. 10). In Chapter 2: Where Do We Focus First, the priorities are identified as: creating more innovation, more skills, more wealth; improving the well-being of our children; improving participation of Maori and Pacific Island peoples.

Monitoring Progress Towards a Sustainable New Zealand (Statistics New Zealand, 2002). Adopts the WCED definition of sustainable development. Statistical indicators are used to address such questions as 'Is the environment resilient and healthy…with vibrant cultural identities…with living standards that meet the needs of all', 'Is the economy innovative and growing…and in balance with the environment…and providing work'?, 'Are people healthy and well educated', Are people safe and able to participate in all aspects of the community now and in the future'. No overall conclusions are drawn.

The Sustainable Development for New Zealand Programme of Action (DPC, MED, MfE, MSD, 2003)*;* Adopts the WCED definition of sustainable development. The Programme of Action targets five areas: Quality and allocation of freshwater, energy, sustainable cities, investing in child and youth development, and measuring progress and updating the programme of action.

Sustainable Development and Infrastructure (Maramar Consultancy for MED, 2003). Describes sustainable development as ‘a goal that emphasises a long-term (intergenerational) and holistic perspective, integrating economic, environmental, social and cultural dimensions’. Discusses some of the links between economic growth and infrastructure, and, interestingly, connects society attitudes and trends to infrastructure and growth issues. Addresses some urban infrastructure issues.

Other publications that refer to either sustainability or sustainable development, but which do not include the term explicitly in the title include:

The State of New Zealand’s Environment (MfE, 1997). Outlines the Government's environmental strategy, *Environment 2010* as incorporating ‘new ethical and ecological dimensions’ that are ‘explicitly based on the ethic of sustainability which obliges us to sustain the natural environment not just for our use, but for its ecological functions, its intrinsic value and its potential value to future generations’. Interestingly, the report tells us that ‘under this ethic, the environment is no longer the economy's servant but its host, and extinctions and environmental degradation are no longer acceptable prices to pay in the pursuit of economic growth’ (ch1.2 html).

Population and Sustainable Development (MED, MSD, DoL and Statistics New Zealand, 2003) was prepared by the Ministries of Economic Development and Social Development, the Department of Labour and Statistics New Zealand. Makes connections between the ways in which New Zealand's population will change over the next 50 years and future development and well-being.

Simply Sustainable (MfE, 2005a). Aimed specifically at those in business it provides five steps towards sustainability comprising:

1. Switch off when not in use
2. Green your office stationery
3. Recycle all that you can
4. Choose greener and safer cleaning products
5. Choose energy efficient equipment and appliances

Walking the Talk to Sustainability (MfE, 2006). Provides practical steps on how to 'walk the talk'. Largely similar to the steps outlined in *Simply Sustainable* (MfE, 2005).

The Parliamentary Commissioner for the Environment is funded by Parliament directly and answers to the Speaker of the House and the Officers of Parliament Committee rather than the Minister for the Environment. The Commissioner's focus is 'environmental sustainability' (http://www.pce.govt.nz/about/pce_about.shtml). Publications from this Office with a focus on sustainability or sustainable development include:

Towards Sustainable Development: The Role of the RMA. (PCE, 1998a). Discusses the purpose of the RMA ('sustainable management of natural and physical resources', p. 2), its strengths and weaknesses.

Creating Our Future: Sustainable Development for New Zealand. (PCE, 2002). This report reviews New Zealand's progress towards sustainable development, with a focus on environmental management performance since the 1992 Earth Summit in Rio de Janeiro. 'The report highlights the opportunities and challenges in maintaining a

healthy environment, social well-being, and a strong economy'. Outlines a preference for 'strong sustainability' which recognises the 'limits within which an economy and society must operate if we are to function in a sustainable way' (p.2). It is 'ecological limits' that determine whether activities and interests are 'sustainable'.

Governmental Publications with a Focus on Sustainability in Urban Areas

Recent governmental (including the PCE) publications with a focus on *urban* sustainability or sustainable development in urban areas include:

Cities and their People: New Zealand's Urban Environment (PCE, 1998b). This reports on the management and state of New Zealand's urban environment, identifies important issues and risks, 'and poses a series of questions regarding how we may advance the sustainable development of our cities and towns'. The definition used in the report is that of the WCED (1987).

People, Places, Spaces (MfE, 2002)*;* 'Reflects the Government's commitment to sustainable development in urban areas', an approach which encompasses 'social inclusiveness, economic prosperity and environmental quality (p. 2).

Urban Sustainability in New Zealand (MfE, 2003)*;* An information resource for urban practitioners. It defines urban sustainability as 'a process of managing urban change to improve our quality of life by delivering better social, environmental and economic outcomes, for all people, in the present and in the future' (p. 4).

The Sustainable Development for New Zealand Programme of Action (DPC, MED, MfE, MSD, 2003) includes 'sustainable cities' as one of its five areas of action. A sustainable city is not defined, however, the desired outcomes of the action are the development of cities that are 'centres of action and economic growth' and 'liveable cities that support social well-being, quality of life and cultural identities' (p. 19).

The New Zealand Urban Design Protocol (MfE, 2005b) *including the Action Pack* (2005). The Urban Design Protocol 'forms part of the Government's Sustainable Development Programme of Action' (p.2). The protocol identifies seven design qualities fundamental to good urban design: Context, character, choice, connections, creativity, custodianship, and collaboration. Does not define sustainability.

A Summary of the Value of Urban Design (MfE, 2005c) *and Urban Design Case Studies* (MfE, 2005d). This publication does not invoke the terms sustainability or sustainable development but instead talks about balancing 'social, economic and environmental'. In a pragmatic approach, readers are asked to attend to local character, connectivity, density, mixed use, the public realm, integrated decision-making, and user participation.

New Zealand Websites

A google search for New Zealand sites including 'sustainable development' yielded about 998 000 hits, and 'sustainability' a further 155 000 hits. These figures were something of a surprise to me considering our population stands at little over 4 million people. A search for 'urban sustainability' generated fewer hits (155 000), however, it

was interesting to the content of some of the sites found as a result. Reurbanise (www.reurbanise.co.nz), for example, defines urban sustainability as the 'viability of urban living' and focuses on steps to maintain the feasibility of urban living given the end of 'cheap oil'. In addition, they are preparing for an economy which is shrinking rather than growing. Other sites included examples of private/public partnerships (e.g. sustainable.wellington.net.nz), private business interests that are intent on developing a 'sustainable approach' (sustainable.org.nz, greenfleet.org, nzbcsd.org.nz), research institutes (e.g. landcareresearch.co.nz, branz.co.nz) and all manner of other urban interest groups.

These figures and examples add weight to my claim that these terms are now commonplace. Though a thorough assessment of so many sites was impossible, I would also argue that allusions to the concepts sustainable development, sustainability and urban sustainability were, for the most part, rather vague. My evaluation of this material is consistent with those who claim that although these terms might be conceptually cloudy and often impractical, they have become increasingly popular and influential in sometimes unpredictable ways.