Defensive Dispersal and the Nuclear Imperative in Postwar Planning:

A Study in the Sociology of Knowledge

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FACULTY OF GRADUATE STUDIES
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DEFENSIVE DISPERSAL AND THE NUCLEAR IMPERATIVE IN POSTWAR

PLANNING: A STUDY IN THE SOCIOLOGY OF KNOWLEDGE

BY

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Abstract

In the aftermath of the atomic bombings of Hiroshima and Nagasaki in the final days of World War II, an urban planning concept known as *defensive dispersal* came to be advocated by city planners, architects, atomic scientists, and military strategists. While planners had long argued for the decongestion of American cities before the war, the threat posed by nuclear weapons gave this argument a new impetus and rationalization.

Defensive dispersal advocates saw in the contemporary American city large concentrations of industry and population that would prove tempting targets for an enemy armed with nuclear weapons. The solution they put forth was that these populations and industries should be moved (or encouraged to be moved) out of cities and into smaller satellite towns. Furthermore, express highways would be needed to not only aid possible mass evacuations, but to assist in the clearance of inner city slums to reduce overall population densities.

Some prominent dispersal planners and architects worked on bomb-inspired studies and plans in cooperation with federal defence agencies such as the National Security Resources Board. As a result, certain important American urban policies would be influenced by dispersal concepts. The atomic bomb became, therefore, a potent argument for the very features of the postwar urban form that have commonly been cited as contributors to sprawl and urban decline: low-density peripheral development, deindustrialization, the Interstate Highway system and urban renewal.

As important as this school of thought was during the 1940s and 1950s, it is rarely mentioned in the planning, sociological or historical literatures today. A principal thrust behind this study is to determine the reasons for this academic incuriousness and what this absence represents not only for planning history and theory, but the social history of the Cold War as well.

So that this history and its relative obscurity may be better understood, this thesis employs two overall theoretical frameworks. The first is that of the *sociology of knowledge*, which posits that the mental life (or particular school of thought) of men and women is socially situated and should thus be examined in terms of its various contexts and justifications. As such, this thesis examines the theoretical, sociological, ideological, historical, political and design contexts in which defensive dispersal was promulgated. The second theoretical framework is that of the *new urban sociology*, which also holds that urban form itself should be analyzed in terms of these various contexts, with a particular emphasis on determining how certain aspects of urban form bring advantages for some, and disadvantages for others.

The history of defensive dispersal—that of planners in a time of global crisis—is also undertaken with a view to comparing the "atomic age" to the "information age". Planners in the early 21st Century are also practicing during a time of crisis, one born of environmental degradation and unsustainability. It is intended that, by uncovering the ways in which planners responded to crisis a half a century ago, planners might derive some instruction for a postmodern practice that seeks to intervene in these crises.

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Acknowledgements

This thesis has had what is probably considered to be an unusually long gestation period, for it is based on a paper that I had intended to write even before I commenced the city planning program. Because of this, there are many people I need to thank for making this thesis possible.

I first must thank Dr. Ian Skelton, who, in the first term Theory course, supervised this research as a theory paper, and continued to guide it through to a thesis. Owing to his encouragement and support, I was able to parlay this paper into several successful venues (see **Author's Notes**). Considering how this research has dominated my academic life at the University of Manitoba, I owe him a hearty thanks for assisting in this exploration for the past two and half years.

I would also like to thank Dr. Christopher Leo of the University of Winnipeg for offering me some important insights, in particular the observation that there was a name— the *sociology of knowledge*—for the framework I was intending to use. This emphasis made a significant difference in the final direction of the work.

Thanks also to Dr. Todd Gardner of the Census Bureau in Washington D.C., for agreeing to be my external reader. Having never met until the thesis defence, save for over the Internet, we found we shared an interest in the history of the atomic age (including the music!) He especially deserves my thanks for having come a very long way to attend the defence—and in the middle of a Winnipeg winter, no less.

This thesis could not have been completed without the excellent access I had to numerous documents otherwise unavailable at the University of Manitoba. Thanks should therefore go to the efficient and helpful staff at the Document Delivery office at the

Elizabeth Dafoe Library, without whom my bibliography would have been considerably shorter.

Although he was not on my committee, I would also like to thank Dr. Ian Wight for some valuable contributions that helped tie the final chapter together.

In addition to thanking them for all the support they have given me over the years (and through three degrees), I owe my parents, Harry and Nancy Dudley, an intellectual debt. Like many other ex-pat Americans in Canada, they were radicalized in the 1960s, and while I was growing up our house was filled with left-wing, progressive and anti-nuclear literature. I doubt few kids in my subdivision got as much experience carrying placards and marching in protest rallies as did I. This thesis surely owes some of its existence to my upbringing, politicized as it was; so I would therefore like to thank my parents warmly for helping to keep me "active today, rather than radioactive tomorrow" for most of my youth.

Finally, I want to thank Karen Dudley, my wife and partner in all things. As an author, Karen is also an excellent and astute editor, and throughout the degree and the thesis she has been outstandingly supportive, catching my errors and providing me with insights when my own dried up. In the final weeks she aided in preparing and proofing the manuscript. In a way, she also "gave" me the idea to write the thesis back in 1987 when she bought me a copy of Paul Boyer's *By the Bomb's Early Light*, which was a seminal source for this work. (I also need to thank her father, Jack Smith, for repeatedly storing my thesis on his email server for safekeeping, which made me sleep a lot easier at night!)

Without Karen's support I could never have left my previous career to undertake this study in the first place. Thanks, Karen, for everything.

Author's Notes

This thesis is an expanded version of a paper submitted for Dr. Ian Skelton's Planning Theory course in the Fall of 1998. In October 1999 the paper was presented at the Association of Collegiate Schools of Planning Conference in Chicago. The following month a somewhat revised form of this paper was awarded the Student Research Paper Prize from the Society for American City and Regional Planning History (SACRPH) at their biennial conference in Washington D.C. After further revisions, the paper was accepted for publication in the *Journal of Planning Education and Research* 20 (4).

Although the *Chicago Manual of Style* (1993) has been used for text-based bibliographic and citation purposes, it provides little guidance for the citation of electronic sources, for which page number references are meaningless. In these instances, and following examples as provided on the internet, references given are to the number of the paragraph in which the information occurs (e.g., "para. 5").

The Canadian spelling of "defence" is used throughout. In those instances where it appears in the name of an American organization, article title, or quotation, the original spelling of "defense" shall be used.

Dedication

For Karen,
In memory of Rudy

Professions, like nations, keep their shape by moulding their members'/citizens' understanding of the past, causing them to forget those events which do not accord with a righteous image, while keeping alive those memories that do.

-- Leoni Sandercock, *Towards Cosmopolis* (1998)

Chapter 1.0

Introduction: On Approaching a 'Hole' in the History of City Planning

1.1   Preamble

During the past several decades, the urban pattern that has developed in North America—and imitated widely elsewhere—has come to be generally recognized as largely dysfunctional, inequitable, and ecologically unsustainable. Many cities in North America are now characterized by sprawling low-density development, while the financial and physical abandonment of their downtown areas proceeds unchecked, resulting in economic and often racial segregation. The urban studies literature is filled with research, analysis and explanations regarding these characteristics of urban sprawl and decline (for a recent example, see Fishman 1999), so much so that some scholars have found there to be too many competing theories (Bourne 1978, 30).

This thesis seeks to add yet another contributing factor to this debate. Like the debate itself, this factor is multifaceted and must be explored in a holistic fashion. Specifically, it cannot be studied in isolation from the planning theory/practice dialectic. What follows is not, as a consequence, limited strictly to an exploration of a unidirectional cause-and-effect relationship where the urban form is concerned, but delves much further into the interrelationship between city planning theory and practice. It does, on the other hand, share with much of the discourse surrounding 20th century urban malaise, an emphasis on the evolution of North American cities after World War II.

The historical and cultural discontinuities represented by World War II are such that the term "1945" has entered the vernacular of many disciplines—and history in general—as shorthand for a demarcation between two very different eras. This is certainly true for city

planning. The postwar period in planning history is replete with examples of thoughtless city building, and social and planning critics have long deplored its excesses. New Urbanist Peter Calthorpe, for instance, has even proposed the somewhat whimsical "stroke theory" to explain it: that World War II was so traumatic that our civilization suffered a stroke, forgot its own cultural heritage, and, like a stroke victim unable to express himself, consequently assembled an incoherent physical environment of architectural garbage (Kunstler 1996, 15).

The year 1945 also marked the moment when humanity first released nuclear weapons against itself. The atomic bombings of Hiroshima and Nagasaki made profoundly final a decision that had been in process for most of the Second World War: that cities filled with noncombatant citizens were legitimate targets in total war. While "conventional" bombings had, over the course of the war, incinerated cities such as Hamburg, Dresden and Tokyo, the atom bomb now made the destruction of cities instantaneous, indiscriminate, and complete. More dismal still was that humanity now knew, for the first time, the very real possibility of self-extinction.

This thesis contends that these two socio-historical currents are related; that the nuclear arms race, and the social, political, cultural and most importantly, *professional* responses to it, may have had some role to play in the evolution of postwar urban form in North America, especially the United States. Early postwar planning literature and government documents reveal that a prominent movement in the American planning profession proposed, in response to the nuclear threat, new ideas for cities that would go on to inform important urban policies. These ideas revolved around the concept of *defensive dispersal*: the thesis that major cities were such obvious targets for nuclear weapons that they would need to be built at far lower population densities, and to contain much smaller industrial concentrations than before.

This thesis will constitute not only an exploration of the defensive dispersal city planning movement and its goals and its ideas, but also an attempt to identify the real-world consequences of the policies the movement influenced. It will also seek to gain an understanding of the social implications of the defensive dispersal movement, and to situate this movement and its meanings both within city planning theory and history, and within the broader social history of the postwar era.

1.2   Problem Statements

The response of the city planning profession to the threat of nuclear weapons represents, for our purposes, a dramatic example of the planning profession during a time of a human-generated and global crisis. The interest to our own period of planning history—in which our profession is recognizing the need for planning processes that can ameliorate the threat of ecological collapse owing to thoughtless human enterprise—would seem obvious. Planners are now being called upon to cope with an environmental crises of global dimensions, yet "there is very little in planning theory to guide planners in a crisis, nor is there much documentation of *how planners have responded to crises in practice*" (Altermann 1995, 157 [emphasis added]).

This thesis shall therefore take the form of an historical case study focusing on the ways in which the city planning profession responded to a particular crisis, with the intention that such a history might prove instructive for a postmodern planning epistemology which seeks to inform the intervention of planners in a human-driven threat to the environment and to civilization.

There are, then, five principal concerns that lie behind this study, all of which revolve around the theory-practice dialectic as reflected in the history of the city planning profession's response to the atomic bomb:

1.) How did the *existence* of nuclear weapons influence the evolution of North American urban form?

2.) How did the city planning profession's *response* to nuclear weapons influence the evolution of North American urban form?

3.) How did the city planning profession's response to nuclear weapons contribute to the *acceptance* of the presence of these weapons in a democratic society?

4.) Why has this history been largely neglected, and what does this "hole in history" (Mitchell 1995) imply about city planning history, planning theory, and the social history of the nuclear arms race?

5.) What features from this history of the "Atomic Age" can inform postmodern city planning theory and practice in the "Information Age?" Specifically, what is the role of the city planning profession in a democratic society during a time of global crisis?

1.3   Purposes of the Thesis

The first problem statement is intended simply to establish that the atomic bomb, representing as it does a terrifying technological advance intended from the outset solely to destroy cities, could not have helped but to influence, in unintended ways, the development of cities, and the City as an *idea*. While this factor has essentially been ignored in the professional and academic planning literature, it is one of the contentions of the thesis that the mere existence of nuclear weapons technology has profoundly influenced the development of society in ways that have impacted the practice of city planning, and the situations and issues with which our profession has had to contend for more than half a

century. On this level, the thesis will place the atom bomb within the context of other previously noted influences on urban sprawl and inner city decline.

The second problem statement reflects the intent to explore the ways in which the city planning profession's response to nuclear weaponry, in the form of the defensive dispersal movement, exacerbated the complexity of the social impact of the atomic bomb and its implications for planning theory and practice by advocating changes to the urban pattern, and then assisting in the transforming of these theories into actual urban policy. Again, this will allow us to include the bomb as a factor in urban development.

The third problem statement revolves around the intent to situate the defensive dispersal movement in broader social contexts. The first is the political tenor of the 1940s-1960s, a time of intense intellectual repression (disguised with anticommunist rhetoric) that impacted professional life in myriad ways (Caute 1978; Heale 1998). The second context is that of the widespread social project that has sought to adopt the atomic bomb on a socio-cultural level and thus render acceptable its presence in a democratic society (Boyer 1985). This task, a not inconsiderable one, is in many ways, still underway.

This social context also informs the fourth problem statement, which examines the implications of the relative absence of this subject from contemporary city planning theory, history and discourse. In addition, we shall ask if this school of planning thought—as influential as it was in the 1940s and 1950s—has theoretical resonance a half-century later.

The fifth problem statement attempts to derive instruction from this period in planning history and apply it to postmodern planning theory and practice. What this history reveals is a crude but surprisingly close parallel in strategy between the defensive dispersal movement and such contemporary approaches as "smart growth", sustainable development and New Urbanism—this in spite of the fact that their actual goals are diametrically

opposed. Both the historical and latter-day movements place the city planning profession in the role of proposing alterations to the urban form in order to ameliorate the dangers to society imposed by human-made technological forces. The earlier threat came from atomic weapons, the current threat by unsustainable urban form, over-exploitation of resources, and an over-reliance on fossil fuels (Beatley and Manning, 1997; Calthorpe 1993; Hough 1995; Roseland 1998; Spirn 1984). The irony in this juxtaposition is that, as the thesis will reveal, there is a case to be made that many of the problems that planners seek to remedy through more sustainable practices may have been exacerbated by defensive dispersal.

The final statement is also intended to guide, in a more general sense, what this historical case study might teach us about planning methods in democratic societies during a time of crisis. Many environmental and social writers, scientists and activists contend that our unsustainable society and its petroleum-driven, globalistic economy is inflicting irreparable damage to the planet's ecosystems. How should the postmodern planner respond to crises on such a scale?

1.4   Scope of Thesis

Scale is, in itself, paramount to this discussion, and it might at first seem that the scope of this thesis is too broad; indeed it must be granted that any study that attempts to approach in a critical way the social impact of nuclear weapons risks dealing with issues of monumental consequence. We are, after all, talking about a technology capable of the ultimate negation of our civilization, and possibly all life on Earth.

The implications for this thesis are fundamental. On the one hand, it cannot help but take a broad approach; yet caution must be exercised on the part of the author to prevent

attempts to stray into closely related social concepts and consequences that are, nonetheless, outside the bounds of our focus (see section 1.7—**Limitations**).

This thesis is an expanded version of a paper submitted earlier in the course of the author's Masters degree in City Planning. This paper was later revised and submitted for publication (Dudley, forthcoming). In the process of formulating the goals of this earlier work into a thesis, the author thought at first to attempt to focus on one of the aspects dealt with in the original paper and to establish more firmly the case that a *particular* phenomenon of urban growth, such as industrial migration, had been influenced by the atomic bomb. When it was decided to remove to a further distance and encompass the breadth of the earlier work but in greater overall detail, it became apparent that it would not be feasible to contain the study within a single statement of purpose. A statement to the effect that "the evolution of postwar urban form was influenced by the atomic bomb" could not sustain the project. There is, in fact, another major thrust in this history, and it must be approached dialectically.

The second and equally essential part of this history is that of the role of the city planning profession in the early atomic era. Furthermore, within this historical theme is the interplay between planning theory and practice, which, in turn, cannot be analyzed without reference to the influence of the atomic bomb in and of itself on: urban form; the general social history of the postwar period; and the City as an idea. The corollary of this argument is that a thesis which relied only on an evaluation of the defensive dispersal movement in the city planning profession and the planning/ practice dialectic, while interesting, would fail to complete its argument if it did not account for the impact of real-world consequences on that dialectic.

The argument, then, is iterative: the atomic bomb impacted urban form and

therefore also impacted city planning theory and practice; and city planning theory and

practice in response to the atomic bomb influenced urban form and thereby impacted

planning theory and practice. The nature of this argument necessitates that the thesis pursue

an appraisal not only of the prevailing planning theory of the time that emerged in response

to the atomic bomb, but the real-world consequences of both the bomb and the plans it

inspired. It will be incumbent then upon the thesis to explore in some detail the primary

urban issues that may have been influenced by the atomic bomb and the defensive dispersal

movement: suburbanization, urban renewal, the construction of freeways, the growth of the

American Sunbelt and industrial deconcentration. We will also include a late-20th century

addition to this litany: the Internet, which saw its genesis in military plans to decentralize

computing and communications to defend against the bomb (Abbate 1999), and has now

been revealed to have numerous significant and inescapable implications for the planning of

cities.

1.5   Study Methods

This thesis is historical in nature. As such, it is based primarily on an examination of

documentary evidence from planning literature, atomic-related literature, and government

documents from the 1940s and 1950s. The evidence gleaned from these planning documents

and other historical sources shall be analyzed according to several major theoretical tenets

(see section 1.9--**Theoretical Approaches**). As this work also deals with the larger issue of

the social impact of the nuclear arms race, research and analysis from other disciplines,

notably history, are referred to as well.

The method in this thesis may be described as that of synthesizing two previously isolated bodies of literature: city planning history/theory, and the discourse surrounding the nuclear arms race. As these areas of research are synthesized, it is hoped that evidence shall emerge which supports the thesis' contentions. It shall then be inferred from the documentary evidence that there are valid relationships under discussion that warrant further study. The author, cognizant of the pitfalls of inferential and synthetic methods (Shafer 1980, 192-200), will make such inferences cautiously. One such temptation is to be unduly selective with one's evidence, the result being that "almost any historical thesis can be proved, if only supporting evidence is selected" (*ibid.*, 175).

To remedy such effects, the present selected evidence is being contextualized with that put forth by others (see **Chapter 6**). Certain major and more commonly cited explanations for postwar urban form will be discussed alongside a new interpretation based on the ideology and policies of defensive dispersal, as well as circumstantial evidence that can be gathered from the literature. In this way, the atom bomb and defensive dispersal shall be integrated within the narrative of the evolution of postwar urban form.

There is, in addition, an overall theme that informs the structure of the thesis, and that is the recognition that this history must be approached within its social contexts. The thesis will explore the social environment in which this literature emerged; the social consequences inherent in the proposed schemes; and the possible social impacts of defensive dispersal-related planning. The thesis will also attempt to provide a theoretical understanding of defensive dispersal and, in light of present conditions, to explore the ways in which the dispersal project did, in fact, succeed in its objectives. (For a more detailed explanation of this approach, which is based on ideas surrounding the *sociology of knowledge*, see **Chapter 1.9.1**).

1.6 Importance of Study

When this project originally commenced in the autumn of 1998 for a Planning Theory course, it was thought that the theory paper would be concerned simply with an examination of a collection of articles written by planners about the need to alter cities to protect them from atomic explosions; it was not until later in the research that the author realized that there was a great deal more to this history than originally thought. What was even more perplexing was that, as seemingly important as the initial findings were, there was almost nothing that could be found in the planning literature that examined this topic from an historical and critical perspective. Nor was there any indication that urban histories considered the atomic bomb as an influence on urban form. As a result, the connections that were found between plans, planners and policy that might be ascribed to the nuclear arms race were based on the author's own research. Since that time, three relatively recent studies have come to light which examine defensive dispersal: "Shaping the regional city" (Parsons 1989), "The Bomb and the suburbanization of America" (Bosworth 1997), and *The Decentralization of American Cities: Four Case Studies* (Hare 1994).

The late K.C. Parsons, former Vice-President of the Society for American City and Regional Planning History, presented a paper at the 1989 National Conference on American Planning History, entitled "Shaping the regional city: 1950-1990: The Plans of Tracy Augur and Clarence Stein for dispersing federal workers from Washington D.C." (Parsons 1989). This paper dealt with defensive dispersal plans for the American capital only, and did not carry the analysis to a more general scale. Another conference in 1995 pertaining to popular culture and the nuclear arms race saw a paper delivered by Professor Thomas L. Bosworth of the Department of History, University of California, San Diego, entitled "The Bomb and

the suburbanization of America" (Bosworth 1997), which offered support for the notion that the bomb—particularly during the tense years of the Korean Conflict—helped spur the drive to the suburbs. Bosworth's work, in relying for the most part on mainstream sources (such as articles from newspapers and news magazines) made no reference to contemporary city planning literature or to the specific policies identified in the present author's original research (Dudley forthcoming). In 1994 Timothy George Hare submitted a Master's Thesis in History to the East Stroudsburg University in Pennsylvania entitled *The Decentralization of American Cities: Four Case Studies* (Hare 1994), one chapter of which deals with defensive dispersal, albeit with no particular attention given to the city planning profession. There is in addition a recent and fascinatingly interdisciplinary treatment of this subject that discusses the ways in which defensive dispersal thought contributed to the evolution of American *film noir* (Dimendberg 1997) (For a more detailed discussion of these papers, see section 1.10 **References to Defensive Dispersal in Current Literature**).

Apart from these examples, however, the critical literature on this subject is scant. The one exception to this observation is that there is some consensus that the American Interstate Highway system was politically justified on grounds of national defence (see **Chapter 6.3**)—specifically, the need to evacuate large cities in the case of a nuclear attack. What is significant about this admission, when it is made at all, is that there is no real recognition in these accounts that there was anything *remarkable* about this fact. That few urban historians tend to see nothing extraordinary in the fact that the design of Interstate Highways might have been influenced by the existence of weapons of mass destruction is, itself, extraordinary, and has serious implications for the content of the present study.

On one hand, the history of the bomb's impact on planning and on cities has been virtually ignored for several decades; on the other, if it does enter the general discourse—as

it does in the case of the Interstates—it seems to be acknowledged in a parenthetical fashion that denotes no overall significance to this fact, and no connection is made to the influence of the defensive dispersal movement. Finally, as is revealed in the work of Parsons and Bosworth, when the impact of the bomb has been addressed, the topic has been compartmentalized by geography (in the case of Parsons) or by a narrow range of sources and the bounds of a single discipline (as in Bosworth's work). Absent from both of these papers is a critical and theoretical appraisal of the defensive dispersal movement in the city planning profession, and few links have been made to the policies identified in this thesis. As well, Hare (1994) accomplishes a broad overview of dispersal and some of its resulting policies, but does not dwell on the planning profession or in any way relate dispersal to contemporary planning theory. What remains, then, is a serious gap in the scholarship of city planning.

When the nature of a study is such that it represents the contribution of new knowledge to a discipline, it is more than usually incumbent upon the researcher to offer a thorough justification of his/her assumptions and conclusions. In particular, the author should make some attempt to explain why such knowledge should have failed to interest diligent others. In this case, the task is a particularly desirable one, as it is in regards to the atomic bomb, a social force of such potency that its absence demands explanation.

Furthermore, it is worth pointing out that the essential facts surrounding the defensive dispersal movement and subsequent policies are readily available in the public domain. That they appear to not have been widely discussed has little to do with conspiracies or the burial of facts; indeed, this thesis is largely supported by information sources that may be obtained at any good-sized academic library and on the Internet. Instead, we must look beyond the bounds of the academy.

The first conclusion one may draw from the above—and the easiest—is that this constitutes something of a failure of scholarship. While possibly true, what is of greater interest to the present inquiry is what this academic incuriousness—and the "hole in history" (Mitchell 1995) it created—represents. The nature of this gap does, however, inform the most important of the assumptions that support the present work.

1.7 Assumptions

Our assumptions derive from the recognition (described in 1.5—**Study Methods**) that this history should be viewed within social contexts. The narratives in this thesis are but a part of the larger socio/psycho/cultural narrative of society's struggle to accommodate the existence of nuclear weapons. This project of socio-cultural accommodation is described in Paul Boyer's excellent books *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age* (Boyer 1985) and *Fallout: a Historian Reflects on America's Half-Century Encounter with Nuclear Weapons* (Boyer 1998); (see also Henriksen 1997). For Americans, this imperative has been made all the more powerful by the ambiguous moral history of that country's actual use of atomic bombs on hundreds of thousands of civilians in the cities of Hiroshima and Nagasaki (see **Chapter 3.5.1**). As the well-publicized and ferocious controversy over the Smithsonian Institute's aborted 50-year retrospective of the bombings demonstrated,

> [i]t has never been easy for Americans to reconcile dropping the bomb with a sense of [them]selves as a decent people. Because this conflict remains unresolved, it causes pain, anger, and confusion. There is no historical event Americans are more sensitive about: Hiroshima remains a raw nerve (Mitchell 1995, para. 1).

Because there has been no official reconciliation with this history, Americans have sought instead to rationalize and legitimate the bomb, while at the same time joining the rest of humanity in accommodating it in such a way that they might live day-to-day in a reasonable fashion with the threat of almost universal annihilation. Through films (Broderick

1991), magazine articles, popular songs, novels (Brians 1987), television programs and a host of other forms of cultural expression (to say nothing of a concerted effort on the part of government agencies to soothe the fears of the public through sheer propaganda [Rafferty et al 1982]), America's citizenry has over five decades learned to cope with nuclear weapons, and eventually—and for all practical purposes—to forget about them. As Brians has noted, "nuclear war must be the most carefully avoided topic of general significance in the contemporary world" (Brians 1987, 3-4; see also Lifton and Mitchell 1995).

Defining the role that defensive dispersal has played in this accommodation, it is hoped, will support many of the findings of this thesis and aid in our understanding of why this history should have been neglected for so long.

The framework of this thesis is also based on the assumption (as discussed in section 1.2 **Problem Statements**) that the era being examined might serve as a metaphor for the current trend in planning thought towards sustainability. This case study shall not take the form of a comparative analysis involving the planning discourse in these two time periods. Rather, the thesis is modeled somewhat on the approach taken by renowned American historian Barbara W. Tuchman who, in *A Distant Mirror* (1978), viewed the doom-wrought 14th Century as a vehicle for gaining insights into the late 20th Century, a time in which the 'end of the world' might be less than 30 minutes away. Tuchman's use of analogy was a gentle one, and did not dominate her work; this shall be aspired to here as well. The use of analogy in history is, after all, problematic, as no analogy is perfect, and cannot be used for predictive purposes (Shafer 1980, 220-221). Nonetheless, it is proposed that the planning imperatives active in both time periods make the analogy an apt one.

The other major assumption made during the preparation of this thesis—owing to the fact that this is an expansion of earlier work—is that there *are* links that can be made

between the nuclear arms race and urban development. The hope at present is to explore in much greater detail the history of these links and to establish more firmly their importance. Along with this assumption, however, come some equally serious limitations.

1.8   Limitations

The first and most obvious of the limitations that are inherent in the selected study method described in 1.5 above (and probably in this entire line of inquiry) is that there will be no attempt made to gather empirical evidence to determine the actual *extent* of the impact on urban development that the bomb and defensive dispersal may have had. It does not seem possible, at this remove from the period in question, to ascertain that x percent of industrial deconcentration or slum clearance was dictated or inspired by the need to reduce the "target value" of a particular city. In this sense, it is not to be hoped that this thesis will "prove" a causal relationship in a given instance.

Caus*es*—i.e., multiple causation—are, after all, the key to understanding the history of anything (Shafer 1980, 26), and this imposes several guidelines for the pursuit of the thesis. Foremost among these is that this history will be placing the nuclear arms race within the context of a number of other generally acknowledged historical influences without claiming any particular priority for it. We shall also be careful to distinguish evidence that indicates an agency *connecting* events, rather than simply noting *correlation (ibid.)*. Most importantly, the thesis will make no claim that the nuclear arms race actually *caused*, in an inaugural sense, any of the major urban phenomenon under examination. Suburbanization, for instance, was well underway in many American cities before the 20th century even commenced, and slum clearance projects predate the Second World War. The Interstate

Highway system, too, was being planned years before the invention of the atomic bomb (Lewis 1997).

What, precisely then, is the claim being made in this thesis? Simply that planners, architects and other social scientists found in the atomic bomb a powerfully convincing justification to convince policymakers to *accelerate and augment existing trends*, and that the general public, cognizant of both the threat posed by the bomb and the convenience and desirability of a more dispersed urban form as it was being developed, simply took natural advantage of the means available to them.

As previously mentioned, serious boundaries need to be placed around this topic. The atom bomb and what it has meant for humankind has caused the flow of much ink in the last 50 years, and there is scarcely a discipline that has not been touched by it. Consequently, the myriad impacts of the bomb on society in a general sense can be dealt with only briefly and in passing in order to acknowledge their presence, but for no other reason.

The reader should also understand that the literature reviewed for this thesis should be considered representative, rather than exhaustive. To give some idea of the prevalence of this literature in the 1950s: a dispersal bibliography published in a 1951 edition of *The Bulletin of Atomic Scientists* (Altmann and Moskowitz 1951) ran to 87 entries, only some of which have been included herein. Because so much of this literature essentially reiterated the same arguments—the need to move industries out of cities, disperse residences and improve freeways for evacuation—an authoritative review of this material would certainly prove repetitious.

It should also be established early on that, although defensive dispersal was concerned with city planning, it was not advocated solely by city planners. Important

contributions were also made by atomic and social scientists, as well as architects. While the works of non-planners will certainly be included (for they contributed significantly to the bounds of debate) we will not be dwelling on other professional contexts. What will be of interest, however, is noting the relationships that planners developed with dispersal advocates from these fields, and the nature of both the consensus and protest within and without the profession over the role of civil defence in planning. Naturally, what will come into sharp relief is the very close collaboration that evolved between government agencies, military planners, atomic scientists and design professionals.

The atomic bomb exerted considerable influence over three interrelated design projects: the design of houses and other buildings, the disposition of buildings within the city, and the design and placement of fallout shelters within homes and public buildings. The first was more properly the domain of architects (and was in fact the subject of a "Conference on Building in the Atomic Age" held at MIT in June of 1952 [*PER V* 1952, 82]), the second of city planners, and the third, while referred to in both literatures, was of such paramount importance to government civil defence objectives, and subject to such unsettling public attention, that it constituted a "craze" (Henriksen 1997, 193-239). Because of these related design goals, defensive dispersal should be seen as a more specialized theme of the civil defence program, the history and particulars of which are dealt with briefly in **Chapter 3.5.2**).

While we will acknowledge the Cold War contributions of architects, the thesis will not delve extensively into their profession. It is worth mentioning, however, that for the 20-year period after the Second World War, planning was essentially viewed as "architecture writ large", and many planners were trained architects (Taylor 1999, 330). Because of this close relationship between these two design professions, both the American Institute of

Architects and the American Institute of Planners invested a great deal of energy in the civil

defence aspects of design (*Progressive Architecture* September 1951, 63). The AIA's

involvement in civil defence matters extended so deeply that member architects actually

participated in at least one nuclear test explosion, *Operation Cue* (May 5th 1955), which

involved the construction—and subsequent destruction—of a number of buildings,

including typical residential homes (Federal Civil Defense Administration 1955, 159). The

footage resulting from these tests, showing the exterior of one of these houses bursting into

flames before the whole structure disintegrates, has become almost iconic (it has appeared

most recently in the opening credits of the brooding weekly television program *Millennium*).

There are geographic limitations that will be imposed as well. The body of planning

literature under discussion is primarily American, and appeared mostly between 1945 and

1960. There was some effort made in this matter by Canadian planners (Committee on

Physical Planning 1956), but their output on this topic is, by comparison, negligible, and so

will not be dealt with. The defensive dispersal movement also had its advocates in Great

Britain, the Soviet Union and elsewhere, but their work will also not be explored here.

1.9   Theoretical Approaches

1.9.1   The Sociology of Knowledge

The overall objectives of this project require that we adopt an approach that is

described as the *sociology of knowledge*. Articulated first by Karl Mannheim in *Ideology and Utopia*,

the sociology of knowledge considers that the shared conceptions that groups of men and

women hold regarding their social world are socially constructed, and are specific to the

time, place and circumstances of the group that shares those conceptions (Simonds 1978,

19). This constitutes, then, the study of mental life; more specifically the study of the ideas

and intellectual productions of individuals and groups, and the interrelationships between those "knowledges" (or "modes of knowing") and the social circumstances in which they were developed (Motwani 1976, 3-5). The applicability of this approach to the present work is obvious, for civil defence discourse was intensely specific to its socio-historical contexts.

The research agenda of this approach to epistemology includes the following questions:

- What are the social and cultural existential bases in which this knowledge is situated? (Such bases would include class, occupations, mode of production, group structures, historical contexts, society, ethnicity, etc.) (See **Chapters 2 and 3**)

- What mental productions are being analyzed according to these existential bases? (These can be spheres of belief, thought, philosophy, science, technology, etc.) (See **Chapter 4 and 5**)

- Which aspects of these productions are being analyzed? (their assumptions, conceptual content, models, etc.) (See **Chapters 3, 4 and 5**)

- In what ways are these mental productions related to the social and cultural existential bases? (Is there a causal or correlative relationship? Interaction or dependence? Is there a symbolic or functional relationship?) (See **Chapters 3 and 7**)

- What purpose might be imputed to these socially and culturally situated mental productions? (The exercise of power or control, to promote stability, divert criticism, deflect hostility, influence social relationships etc.) (See **Chapter 7**) (adapted from Merton 1976, 8-89).

As indicated above, this thesis is structured very closely according to this research agenda. We shall be endeavouring to locate the historical, social, professional and theoretical environments in which the defensive dispersal thesis was created, and to analyze the relationships between those environments and defensive dispersal, so that, in Chapter 7, we might be able to divine some instruction for postmodern planning epistemology.

A major component of this exploration will be theoretical. We shall be looking at the theoretical paradigms with which urban society itself is studied, and those theoretical stances adopted by the city planning profession in the postwar period.

1.9.2 Urban Analysis

Urban social science, or urban sociology, is not only the study of social life in urban

space, but also the study of the creation of urban space (Flanagan 1993, 45). The paradigms

which have guided this branch of social science fall within the following categories (Lake

1983, xiv-xxiii):

Neo-Classical:
Land markets and land uses are explained in terms of "universal laws" of classical
economics, which depend upon supply and demand, free markets, and the exercise
of consumer choice.

Human Ecology:
Initiated by Robert Park and the Chicago School of urban sociology in the 1930s,
human ecology views urban patterns in terms of biological measures: biotic
adaptation through competition, dominance, invasion and succession. The exercise
of consumer choice within free markets is also assumed.

Locational Conflict:
This paradigm concentrates on the impact of political interest groups and power
differentials played out in context of locational conflict. The search for social
homogeneity, and the political processes behind it, determine the spatial
arrangements of communities; as such this framework places less regard on the
supply-and-demand approach of the first two paradigms.

Institutional Constraints:
Institutions, or "urban managers"—particularly developers, financial organizations
and government—can have a powerful influence over how individuals and groups
may access urban amenities such as housing. This position is a dramatic departure
from the free market assumptions of the neo-classical and ecological traditions.

Marxist or Political Economy Approaches
Individual tastes are structured by broader social and economic contexts, which are
the outcome of the current stage of the mode of production, the latter of which
should be examined first.

In addition, the *New Urban Sociology* framework, which has emerged since the 1980s

and holistically incorporates elements from Marxist and other approaches, will also be

discussed (Feagin 1998b).

These analytical paradigms will be described in brief, as each on its own have received lengthy (and in some cases book-length) treatments. They will, however, inform what follows, and will, naturally, be viewed in light of the purported influence of the atomic bomb (see **Chapter 6.9**).

1.9.3 Planning Theory

The city planning profession has a rich theoretical foundation (see Chapter 3) which shall be broken down in Chapter 3 (and 7) into the following categories for analysis:

Planning Process

The defensive dispersal movement evolved during a period in planning history when rational comprehensive planning, governed by instrumentally rational criteria, was the dominant process paradigm in the profession (Sandercock 1998, 87-89). We shall examine the defensive dispersal literature with a view to the manner in which dispersal plans were proposed to be carried out, and then analyze the principles identified in these writings in terms of process theory.

Planning Context

What overall school of thought guided the assumptions of the movement? It will be revealed that defensive dispersal proposals were profoundly modernist in nature, and that their fulfillment required a state-driven project (Beauregard 1996; Moore Milroy 1990).

Planning Tradition

Friedmann (1987) classifies the philosophical traditions that planning discourse has emerged from in categories ranging from the conservative to the revolutionary: policy analysis, social reform, social learning, and social mobilization. From these choices, it shall be shown how the policy analysis tradition best describes the philosophy and methods of the defensive dispersal movement.

Design Traditions

We will propose that the defensive dispersal movement owed a great deal to some of the most venerable of planning's historical models: the Garden City movement, instigated by Ebenezer Howard at the turn of the last century; Frank Lloyd Wright's Broadacre City; and to a lesser extent, the Radiant City of Le Corbusier. The legacy of designs proposed for civil defence purposes during World War II will also be considered.

Perspective: Postmodern Critique

The previous theoretical and evaluative measures are intended to aid in our understanding of defensive dispersal on its own terms, or how it can be understood and contextualized according to contemporary thought of the 1940s, '50s and '60s.

We shall also utilize planning theories not yet elucidated in the early atomic age to see what these postmodern approaches can reveal about defensive dispersal's role and place in the larger realm of planning theory. Apart from our larger framework of the sociology of knowledge, our primary guide in this exercise shall be Judith E. Innes (1995; 1998), and her theories regarding communicative action and the role of embedded information in institutional change.

In addition to these theoretical contexts, the thesis shall be grounded in discoveries found in the current literature, which are discussed below.

1.10   References to Defensive Dispersal in Current Literature

Although not entirely absent from critical discourse, references to the defensive dispersal movement are few, and all but one appear in publications outside the sphere of planning.

In Paul Boyer's 1985 book *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age*, (one of the first sociological studies of the impact of the atomic bomb), the author analyzes the broad cultural repercussions wrought by the atom bomb in the four years after its first use. Several pages in the book refer to the public pronouncements and writings of city planners on the subject of urban decentralization and dispersal (or, as it was sometimes ironically referred to, "nucleation" [*ibid*, 327]). While Boyer ably describes some of the highlights of the dispersal thesis, his object is the broader cultural history of the years 1945-49, and so is therefore unable to explore in much detail the extent of the movement or its subsequent impact.

What does emerge from his meticulous research, however, is the degree to which city planners—alongside a wide variety of "experts" in various American professions—contributed to the public discourse surrounding the bomb. In the aftermath of Hiroshima and Nagasaki, professionals "often naively and perhaps self-interestedly" offered their guidance as to how humanity could step back from the precipice; yet within a few years the focus of their ministrations would be quite different:

> Experts—from city planners and media specialists to psychologists, psychiatrists and physicians—now applied themselves to convincing the American people that the atomic threat was not as bad as it had been painted. Fear had been exaggerated: "hysteria" was uncalled for. The "sunny side of the atom" was real and exciting; the

radiation scare was overblown; and even if worse came to worst, civil defense offered hope (Boyer 1985, 333).

The hope that Boyer concentrates on (at least where city planners were concerned) was, of course, defensive dispersal, and later, the fallout shelter program. Though Boyer's history of defensive dispersal is a minor component in the context of his book, what is most significant about his thesis is that he considers the role that city planners played in what is herein being termed the socio-cultural accommodation of the atomic bomb. Taken together with the myriad cultural currents he describes, defensive dispersal is shown to have contributed to a social atmosphere wherein the initial "awareness of the horror of the atomic bomb [gave] way to...diminished cultural attention" and "continuing cycles of activism and apathy" (Boyer 1985, 352).

Robert A. Beauregard touches on the topic of defensive dispersal very briefly in his *Voices of Decline: the Postwar Fate of U.S. Cities* (1993b). In relating the concerns over urban growth in the early postwar period, he notes how contemporary authors expressed the opinion that "atomic bombs and concentrated cities cannot exist in the same world" (quoted in Beauregard 1993b, 122). While he recognizes the passage of the legislation funding the Interstate and Defense Highways as a response to this anxiety, Beauregard nonetheless regards the atomic bomb as "a reason, admittedly a minor one, for the deconcentration of large cities" (*ibid.*, 122-123). Beauregard's inclusion of the bomb as a factor in urban development, as brief and as dismissive as it is, is a rare exception in the planning literature.

Edward Dimendberg's 1997 article "City of fear: defensive dispersal and the end of film noir", appeared in the architecture journal *Any*, and it constitutes a compelling juxtaposition of film criticism and planning history. Following a brief summary of some key defensive dispersal articles, Dimendberg cites the *film noir* classic *City of Fear* (1959) as an exemplar of a fading film genre impacted by the spatial reconfiguration of America's cities.

The dense, gritty metropolis that had for so long provided the backdrop for *noir* film thrillers was replaced in *City of Fear* by the vast, freeway-dominated landscape of Los Angeles. The film imposes the anxieties of the atomic age on the urban fabric by centering around a fugitive, who (under the mistaken—and ultimately fatal—belief that the canister of deadly Cobalt-60 he is carrying is really heroin), is being tracked and pursued by authorities who fear he could lethally poison the entire unsuspecting city.

What is quite interesting here is that the author's major underlying assumption is that the transformation of the civic landscape and the nuclear fears portrayed in the film are connected. The author claims that the dispersed postwar city was the product of the efforts of urban planners who were fixated on the threat dense cities faced from nuclear weapons:

> [T]he alleged dangers of urban density were a favorite weapon of the advocates of urban renewal...Many urban planners were only too happy to enlist in this war...and [their] comprehensive attack met with considerable—if questionable—victory by the middle of the 1960s. In the name of urban renewal American city centers were gutted, communities and neighborhoods were eradicated, and the metropolitan fabric was transformed into an unrecognizable maze... (Dimendberg 1997, 17).

Dimendberg's article, while fascinating, is nonetheless limited in its utility for the present discussion in that it has no aspiration to seek explanations beyond the correlations gleaned through film criticism; no evidence is sought to support what is, in the context of a discussion of *film noir*, a rather significant assumption.

Historian Thomas Bosworth brings forth several compelling pieces of evidence in his conference paper "The Bomb and the suburbanization of America" (1997). Curiously, he refers not at all to the city planning theories regarding defensive dispersal, electing instead to focus on the ways in which the American government and the media contributed— particularly during the tense years of the Korean War—to the public perception of the City as a place of danger.

This process began, according to Bosworth, even as plans were underway to use the bomb against Japanese cities. Both the extreme levels of destruction and cost of the new weapon meant that "cities were primary targets...[t]he nature of the atomic bomb had thus changed the nature of 'total war' from a decision to deploy conventional bombs against civilian targets, to the use of atomic bombs only against civilian targets" (Bosworth 1997, 277). In the atomic age, nuclear war automatically meant war against cities, and the American government was quick to urge action to defend its own urban areas. Bosworth cites a 1948 lecture given to the Society of International Realtors by Gayle Arnold, assistant director of the National Security Resources Board (NSRB, of which more shall be written below [see **Chapter 5**]), in which Arnold chastised his countrymen for adding to their "urban establishments on a tremendous scale and thus...providing even greater targets for a possible aggressor" (*ibid.*).

Once the Soviet Union had successfully tested their own atomic bombs, and the Korean War was underway, Bosworth notes that the recurring images in the popular press of nuclear bombs falling over the "snarled traffic" and "crowded streets" of the United States made "America's large cities look like death traps" (*ibid.*, 279). The Director of the Office of Civilian Mobilization, Paul J. Larsen, speaking before a joint session of Congress, stated that the best strategy for dealing with this threat was to promote decentralization of populated areas; yet "was forced to admit to Congressional leaders that 'the social and political costs of such decentralization might put an end to democracy as we know it'" (*ibid.*, 280). The financial costs, in fact, were estimated by Manhattan Project scientist Leo Szilard to be as high as "'$25,000,000,000 a year for ten years...[and involve] controls much stricter than we ever had during war time. It would not be a New Deal, but a super-super New Deal." (Salisbury *in* Bosworth 1997, 280).

Bosworth states that the alternative to an improbably expensive "overt" decentralization program was to "covertly promote decentralization on a small scale" (*ibid.*, 280). He cites the passing of the Defense Housing Bill of 1951 (which granted the Federal Government 10 million dollars to purchase land for private redevelopment, the easing of credit regulations, and loans for manufacturers of prefabricated housing) as evidence for an active federal incentive for the dispersal of urban areas: "If the government could not overtly force the relocation of civilians, it could covertly encourage dispersion by financing the purchase of homes outside the urban core" (*ibid.*, 281). Bosworth actually identifies a city—Milwaukee—that resolved to promote decentralization of residences and industry for civil defence purposes (*ibid.*, 281). As well, he demonstrates how the real estate advertising of the era, with slogans such as "Country Properties for This Atomic Age", promoted exurbia as a safe alternative to urban life (*ibid.*, 282), and convinced people to "'get back in the country where there's no danger [from nuclear attack]'" (Grutzner *in* Bosworth 1997, 283-4). This, says Bosworth, "helps to explain the phenomenal growth of suburbs" (*ibid.*, 283).

Bosworth certainly identifies some strong evidence to support the present thesis—particularly in the case of Milwaukee—and clearly portrays the links between atomic fear and the way government and mass media portrayed suburbia as a way to escape danger. If Bosworth can be faulted in his analysis, it is that, in contrast to the majority of historians who approach American suburbia, he seems to be generally unaware of the numerous mainstream explanations for the rapid growth of suburbs; nor does he place the suburbs into an historical context which acknowledges their long history before World War II. In fact, he downplays the few explanations he does mention (desire for more living space, clean air and quiet [*ibid.*, 284]) as simplistic—as indeed, they are.

Bosworth's analysis is also unconvincing in his use of the Defense Housing Bill of 1951 as his principal piece of legislative evidence. This was not, as he would have his audience believe, a major driving factor in the growth of suburbia. Unfortunately, his only source on this legislation is not the Bill itself but an *American City* article from 1951; had he delved into the matter of Defense Housing further he would have noted that its primary purpose (like all Defense Housing Bills before and since World War II) was for the "housing of persons engaged in national defense" (i.e., armed forces personnel and factory workers) and their families (US Code: Title 42 § 1522). While the dedicated construction of housing for defence-related developments—which were also supposed to be dispersed—is clearly an important consideration here (Kirby 1992), it does not on its own have the broader implications he indicates.

The connections between the bomb and urban planning are evinced amply in K.C. Parsons' 1989 keynote paper to the National Conference on American Planning History entitled "Shaping the regional city: 1950-1990: the plans of Tracy Augur and Clarence Stein for dispersing federal workers from Washington, D.C." In it, Parsons links the American New Town movement—espoused by Stein and others since the 1920s—to the postwar discussion regarding urban redevelopment, especially as it concerned prominent city planner Tracy Augur's proposal for dispersing key federal buildings and workers away from the national capitol. Parsons posits that American urban policy "moved towards, drew back from, then abandoned a policy to guide the dispersal of industry, government and population from major cities" for reasons of national security (Parsons 1989, 650). According to Parsons, the national dispersal policy was "short lived" (*ibid*, 651), and that the particular proposal of Augur's is a mere "obscure footnote in [the Regional Development

Council of America's] work, heretofore buried in the annals of failed ideas for governmental schemes" (*ibid.*, 650).

Stein and the RDCA called for an active government role in facilitating the creation of American New Towns (*ibid*, 652). They, (along with Lewis Mumford), saw in the atomic age

> very logical reasons for extensive, explicit and immediate changes in national policy. American policy makers, they believed, should overcome their abhorrence of government intervention in private land rights to embrace a Federal policy of urban dispersal designed to preserve the nation (*ibid*, 653).

The U.S. government under President Harry Truman made efforts in this direction with the 1947 National Security Act, which established not only the National Security Council and the Central Intelligence Agency, but also the National Security Resources Board (NSRB) to act as the "president's dispersal planning agency" (*ibid.*, 654). Parsons notes that the NSRB "started laying out dispersal plans in early 1948" (*ibid.*,) and that they published a series of reports focusing on industrial security: *National Security Factors in Industrial Location*, *Is Your Plant a Target, a Question and Answer Guide*, and *National Industrial Dispersion Guidebook for Communities* (*ibid.*).

Parsons' lengthy article chronicles in great detail (which shall not be summarized here) how former Tennessee Valley Authority regional planner Tracy Augur worked alongside a team of planning consultants associated with the General Services Administration (GSA) (under the authority of the NSRB) on an ambitious plan to disperse the federal government, its workers and their housing to New Towns in a 20-mile diameter ring away from Washington D.C.. Augur's draft paper on the project, "Basic principles and assumptions governing preparations for the long range plan—security for the nation's capital" stated that the proposal was primarily about security, but that it was also intended to "relieve congestion in the downtown areas and [to] so improve the pattern of metropolitan

development so that government functions could be carried out more efficiently and economically at all times" (Augur *in* Parsons 1989, 662). The plan called for an arc-shaped, 65 mile-long "dispersal zone"; an alternate, "highly protected underground...seat of government" (*ibid.*, 662); and new circumferential express highways to link the developments together. Unlike Stein, who wanted these office centers to be located within walking or cycling distance of communities, Augur saw the offices as being separate from housing (*ibid.*, 678); at the same time, Augur wondered "whether these new office centers would 'accelerate unhealthy urban sprawl or...serve as instruments for the upbuilding of healthy and fairly independent satellite communities'" (*ibid.*, 667).

With the onset of the Korean War, Parsons reports, President Truman decided to speed up the NSRB's dispersal plans, and requested an appropriation of 150 million dollars for the new construction (*ibid.*, 665), a figure he later raised to 190 million dollars (*ibid.*, 671). During the next 10 months the plan would be debated and discussed by policy makers and a wide range of agencies that worked under the aegis of the NSRB. Ultimately, however, Congress killed the bill on April 23 1951 by a vote of 45 to 39 (*ibid.*, 680). After this, according to Parsons,

> There were no serious initiatives to implement the old Truman dispersal policies or to formulate new ones. Explicit industrial and population programs declined. Civilian defense ideas were mostly about shelters and emergency evacuation. After [President Dwight] Eisenhower's election in 1952 the new President [dissolved the NSRB] (*ibid.*, 681).

What Parsons did discover, however—and what makes his work of great importance to this thesis—is that in spite of this rejection of Augur's dispersal plans for Washington D.C., the essentials of Augur's plan were ultimately fulfilled. According to Parsons, numerous defence-related government facilities (including two which were specifically identified by Augur) were, in the 1960s and beyond, relocated around the nation's capital in a

pattern of office developments and new towns that followed Augur's plans with remarkable faithfulness.

Parsons' objective here is to explore the political machinations behind the planning, and admits that it is beyond the scope of his paper to explain why, in each particular case, the dispersions occurred as they did, for, as he conceded, "surely the causes of each move vary considerably" (*ibid.*, 682). In partial explanation, however, he offers Daniel Burnham's axiom that "a noble, logical diagram, once recorded, will never die but, long after we are gone will be a living thing, asserting itself with ever-growing insistency" (*ibid.*, 651). For Parsons, the history of Augur's work represents a prime example of how plans

> must live secret lives on their own, sliding silently into the minds of later planners and the meetings of decision makers long after they have been rejected by the people for whom they were prepared (*ibid.*, 688).

The significance of Parson's reference to Burnham in this context cannot, for our purposes, be understated, for it perfectly echoes one of the major theoretical concepts which will be discussed below: Judith E. Innes' precepts regarding embedded information, communicative action and institutional change (Innes 1998) (see **Chapter 7**).

Another element in Parsons' work that resonates powerfully for the present thesis is that he comes to the threshold of the larger context of the impact of defensive dispersal and then—frustratingly—backs away from it:

> New decentralized and dispersed factories required new housing for their workers. Some factories were chosen in isolated locations...Professor William L.C. Wheaton, of Harvard's Department of Regional Planning, captured the excitement about the potential of this surge of new urban development in a symposium held in December 1950. He called the meeting "New Towns for American Defense 'because defense gives a new urgency to an already urgent peacetime need.'" Stein and his RDCA associates took up the same argument. This larger issue, *potentially affecting many American cities* (and about which many RCDA members, especially Mayer, wrote extensively) is beyond the scope of this paper. The focus will remain the Washington Dispersal plans (*ibid.*, 666-7) (italics added).

Unlike the bulk of planning discourse on the topic of sprawl, Parsons' article acknowledges that there are at least potential effects that might be attributable to Cold War planning.

There is another issue arising from this article which must be conceded as problematic. Parsons makes several observations (cited above) concerning the death of the defensive dispersal movement with the Eisenhower Administration in 1952: "there were no serious initiatives...[e]xplicit...dispersion programs declined...Civilian defense ideas were mostly about shelters and emergency evacuations" (*ibid.*, 681). Not only has Parsons chosen not to cite any authorities for these conclusions, but there is evidence—explored below (see **Chapter 6**)—to indicate that he is not altogether correct. Furthermore, city planners would continue to propose dispersed urban patterns in response to the atomic bomb throughout the remainder of the 1950s and into the 1960s (see **Chapter 4**). Finally, a focus on evacuation would certainly play a not inconsiderable role in the development of the Interstate Highway system (see **Chapter 6.3**).

By far the most thorough treatment of defensive dispersal came in the form of Timothy Hare's graduate thesis in history from the University of East Stroudsburg, Pennsylvania entitled *Decentralization of American Cities: Four Case Studies* (Hare 1994). The first three chapters of Hare's thesis review the histories of the "City Beautiful" Movement during the Progressive era, the influence of the Worlds' Columbian Exposition in Chicago in 1893, and Frank Lloyd Wright's Broadacre City. The fourth chapter, "Dispersal of American cities as a civil defense strategy in the early years of the cold war (1945-1956)" does an excellent job in 33 pages of summarizing some of the major ideas and impacts of defensive dispersal. Hare identifies two of the policies that had been explored in the present author's earlier work (Dudley forthcoming), namely the 1951 Industrial Dispersal Policy and the better-

known Federal Aid Highway Act of 1956. He also accomplishes a rather wide-ranging survey of the literature relating to dispersal, including articles in the popular press and more technical journals.

Although possessing an architecture degree, Hare's thesis was completed for a history department, and perhaps this is why he makes only passing references to the dispersal proposals of city planners, focusing instead on the contributions made by atomic scientists such as Leo Szilard, Ralph Lapp and Edward Teller. Hare also makes no attempt to plumb any historical meaning from this period outside its impact on urban form. The sociology of knowledge as it applies to defensive dispersal is not his object. Nonetheless, his thesis provides a valuable and broad perspective on this issue and has been relied on as a resource below.

What we see in the extant literature, then, are a number of important currents that should inform the present research:

- planners' social impacts through their espousal of defensive dispersal to quell public fears, and their contributions toward the general public acceptance of nuclear weapons;

- the apprehensions regarding urban density as arguments in support of urban renewal;

- government, media and market admonitions portraying cities as places of danger, and suburbia and exurbia as places of relative safety;

- the possibility that individual city governments may have independently instituted their own dispersal programs;

- dispersed and isolated defence manufacturing may have exacerbated sprawl through dedicated Defense Housing;

- atomic scientists—some of them from the Manhattan Project—contributed greatly to the dispersal project;

- federal agencies and programs explicitly aimed at promoting dispersal may have given way to covert strategies of promoting decentralization;

- the NSRB and several of President Truman's dispersal initiatives may have lost favour by the time of the Eisenhower Administration;

- overt dispersal policies may have been superceded by programs favouring shelters and evacuation after 1952;

- defensive dispersal theories appear to have had, at least in the case of Washington D.C., enough lasting power to achieve fruition in spite of apparent rejection;

- and plans—at least those that are well-though out, logical and recorded—may outlive the time and purposes for which they were intended and continue to influence other decision-makers and city-builders.

Having discussed these principles as laid out by those who have previously approached this subject, this introduction will close with a chapter-by-chapter summary of the remainder of the thesis.

1.11 Outline of Chapters

Chapter One has served as an introduction to situate the thesis according to purpose, method, contexts, theoretical foundations and an examination of the research relating to defensive dispersal that has emerged since the 1980s.

Chapter Two, the literature review, will further situate the thesis by reviewing the major theoretical and analytical frameworks in which urban form are discussed, and explanations for development and decline are sought.

Chapter Three will constitute a theoretical history of the planning profession during the time period in question—its assumptions, its frames of reference, and how contemporary theory and history informed the defensive dispersal movement.

Chapter Four is a chronological and selective survey of the literature produced by the defensive dispersal movement, illustrating how its tenets evolved in response to the technological and social changes of the Cold War.

Chapter Five will move beyond the literature of the movement to explore how defensive dispersal theories entered the mainstream of planning thought and from there to urban policy. It will focus in some detail on the massive 1952 American civil defence study, *Project East River* and the role played in its completion by members of the American Institute of Planners.

Chapter Six shall venture into the realm of real-world implications of defensive dispersal theories and policies by examining the narrative histories of six major influences on postwar urban form. These histories will include both conventional explanations and those put forth in this thesis. This chapter will include possible directions for further research.

Chapter Seven will seek to understand the meanings that defensive dispersal holds for the social history of the Cold War and for postmodern planning epistemology. It will consider the history of the defensive dispersal movement as a case study regarding the role of the city planning profession in a time of global crisis, and will draw instruction from it.

Chapter 2.0

Literature Review: Theoretical Perspectives on Urban Form

2.1   Traditions in Urban Analysis

The discourse surrounding the causes and consequence of urban structure and spatial patterns—commonly referred to as urban analysis—is premised on a number of major theoretical foundations within the discipline of urban sociology. These approaches constitute paradigmatic lenses through which facets of urban society may be discussed, causes explored, explanations sought, and new evidence weighed. The models developed for the purposes of urban analysis

> [take] the city itself as the focus for concern: what is its spatial form and structure? What factors account for the particular structure of the urban built environment and the spatial distribution of people and land uses? How, why, and under what circumstances do these patterns and distributions change over time? What are the consequences and implications of the constituent processes? (Lake 1983, x).

According to Pickvance (1984), a research paradigm may be distinguished by four factors: a set of rationalized concepts deemed to be the most useful for understanding the subject; a set of preferred research questions that are assumed to be the most significant; a set of substantive explanations or theories that are applied to research questions; and a set of assumptions which are brought to bear when faced with scant evidence or ambiguous interpretations (Pickvance 1984, 33).

As applied to the study of cities, the paradigms discussed below all bring to their inquiries concepts, research questions, explanations and assumptions that dramatically alter the interpretation of urban phenomena. While the first of these to be discussed, the *Neo-Classical Tradition*, emphasizes the role of market forces in determining urban patterns, it is the second paradigm, *Human Ecology* that has dominated urban sociology for most of the 20th

Century, particularly in the United States (Gottdiener and Feagin, 1988, 163-4). Critics in the 1960s and beyond would cite the limitations in both of these frameworks and, in the process, give rise to new schools of thought in urban analysis, including *Locational Conflict*, *Institutional Constraints*, *Marxism*, and *New Urban Sociology* frameworks (Kleniewski 1994, 281).

2.1.1 The Neo-Classical Tradition

Neo-classical (or, mainstream) economics sees the economic patterns of society in terms of the distribution of resources according to the laws of supply and demand, and the exercise of consumer choice. The foundation for this school of thought is Adam Smith's Market Theory (Smith 1976), which described how markets function according to principles of supply and demand. This framework as applied to urban land markets seeks to explain locational decisions of individuals and organizations as the result of the mechanics of a free market (Lake 1983, xiv).

The neo-classical tradition as it concerns urban form arose from the considerable body of writings that emerged in the 1920s relating to "land economics" (Alonso 1964, 6). Although theories relating to land economics arose concurrently with those of the Chicago School's human ecology (see **2.2.2**), and both assume the importance of free land markets, the former has been associated more with economics and city planning, while the latter is more properly subsumed under the discipline of sociology (Alonso 1964, 9). One of these early "land economics" writings included Robert M. Haig's "Towards an understanding of the metropolis", which strongly equated transport costs to the amount a landowner could charge for a given property. As transportation is the means by which individuals and firms overcome the 'friction of space', the city's layout tends to be determined by the efforts of residents to minimize the costs of that friction (Haig 1926).

Locational choices made within the city are, according to the neo-classical tradition, not simply a matter of supply and demand, but part of a search for equilibrium between the costs associated with distance, and satisfaction (Alonso 1964, 59). While the land market finds its equilibrium through supply and demand (as do other markets), this is complicated by the fact that land markets offer two goods (land and distance) but only one (the land) that is actually sold (*ibid.*, 76). In order that neo-classical theories may be tested, this (and other) complications are removed so that simplified mathematical models can be constructed; as such, the reducibility of the city to mathematical relationships has played a fundamental role in the neo-classical literature (Lake 1983 xiv-xv).

In 1964, William Alonso proposed a mathematical model for the urban land market. The level of complexity found in all cities is replaced with a hypothetical construct in which all land is of equal value, and is bought and sold by owners and consumers who possess perfect knowledge of the market (Alonso 1964, 15-16). A more recent example proposed by Zhang (1993), following Alonso's model and those of other neo-classical economists,

> assume[s] that all land parcels are identical. The island consists of a city and the residential area. The city is monocentric...all economic activities are located in the CBD....the country is isolated in the sense that we neglect the possibility of migration and trades...[and people] compete perfectly in the labour market. Here, 'justice in the labour market' means that any labourer is paid according to 'qualified labour', irrespective of which group he/she belongs. The markets are characterized by perfect competition. (Zhang 1993, para. 3-6).

The motivation behind models such as these—and indeed, the neo-classical paradigm itself—is "the belief that land values, and associated land uses, could be explained in terms of universal laws or regularities, and that the operation of the urban land market could be predicted in terms of such laws" (Lake 1983, xiv). Within these models, land is a commodity, and the "free market" determines the manner in which it is bought and sold (Roweis and Scott 1976, 14-15). Land transactions are therefore guided by the principles of

"perfect competition", which, following the logic of Adam Smith's "invisible hand of the market", holds that information is perfect; no one business is so large as to overwhelm the others; and neither firms nor public officials can determine resource allocations—conditions which, of course, (like the particulars of the models themselves) are actually almost non-existent in practice in capitalist society (Korten 1998, 154-162). Because of this, however, neo-classical assumptions are internally consistent:

> [N]eo-classical urban models can never in practice refute the alleged relationship between land prices and uses on the one hand and tastes and preferences on the other; for in such models "tastes and preferences" are always themselves taken to be revealed in the realized pattern of land prices and uses (Roweis and Scott 1976, 25).

The search by neo-classical authors for nomothetic laws—constrained as it is by a uni-dimensional focus on market forces—has been criticized by many, for it deliberately excludes from its analytical constructs such inescapable realities as political influence, institutional behaviour and the decision-making of developers (Lake 1983, xvi)—to say nothing of powerful social motivations like race, class and gender bias. Much of this criticism would go on to inform and support alternative approaches.

2.1.2 Human Ecology

In the 1920s, the leading school of sociology in the United States was at the University of Chicago, and its faculty—including Louis Wirth, Robert Ezra Park, Roderick D. McKenzie and Ernest W. Burgess—produced writings of such influence that the sociological paradigm they formulated would be henceforth identified with their "Chicago School". The "father" of this paradigm, Park, set out the initial premise of human ecology in a 1916 article entitled "The City: suggestions for the investigation of human behavior in the urban environment", and this work would inspire the School's research program for decades (Schwab 1982, 31).

Human ecology's influence on the social sciences has been tremendous; indeed, it became the dominant tradition in urban studies and in the academy for most of the 20th Century (Smith 1995). The importance of human ecology lies not only in the research it encouraged employing ecological frameworks, but for the criticism it engendered, particularly since the 1960s.

Park and other Chicago School ecologists chose as their underlying premise an analogy between the apparent patterns of human society, and those evident in the "web of life" found in nature (Park 1936). This biological approach emphasized competition between groups in urban areas, and, likening society to the processes that may be witnessed in forests and other natural environments, cited the "invasion" of certain groups and displacing others ("succession") as a major source of demographic change. The root of this competition was seen in terms of classical economics, particularly in regards to the value of urban land, on which social institutions and businesses both competed and depended on each other.

Ernest Burgess, in formulating his famous "concentric zone" theory of urban expansion, would also examine the rising and falling values of land and the succession of new immigrant populations. Burgess developed his model by laying a series of concentric rings over Chicago, and in so doing determined there to be five areas: the central business district; the zone of transition, in which light manufacturing and businesses "invade" and replace former uses; a third zone in which workers who have left deteriorating areas reside; a fourth zone containing single-family residences and upscale apartments; and, beyond these, the suburban "commuters' zone" (Burgess 1996, 89-97). Burgess, in all likelihood anticipating criticism, also assured his readers that, "It hardly needs to be added that neither Chicago nor any other city fits perfectly into this ideal scheme" (*ibid*, 92). (The pictorial

representation of the model—a series of progressively larger rings emanating from a central core—would have more ominous and profound symbolic implications in the atomic age).

Burgess' work and those of the other ecologists, would, however, be the subject of debate for decades. Robert Park's subtle distinction between the "biotic" and the "cultural" levels of human society, to cite just one example, would have repercussions for generations of ecologists. While he insisted that these were "merely different aspects of one society, which, in the vicissitudes and changes to which they are subject remain, nevertheless, *in some sort of mutual dependence upon the other*" (Park 1936, 13 [emphasis added]), much would be made of this distinction by his followers and critics alike. The result was the eventual development of two—stubbornly opposed—sub-approaches that emerged in the 1940s and 50s: the *sociocultural* approach, which focuses on the role of values and culture in explaining spatial locations of groups and institutions; and the *neo-orthodox* approach, which refutes the biotic/cultural division entirely. Initiated by McKenzie's student Amos Hawley (1950) in his classic restatement of the human ecology thesis, (entitled, appropriately, *Human Ecology*), the neoorthodox approach also emphasizes the webs of interdependence that may be found in community, rather than the Chicago School's emphasis on conflict (Schwab 1982, 24-5).

There are several ironies in the narrative of Park and human ecology, the most important of which is surely that "...as early as 1939 Park himself stated that he was not attempting to create a school of thought in his ecological approach" (Maines and Bridger 1996, para. 64). The second irony—which certainly bears on the first—was that, in the words of one of Park's students and colleagues, he was far better at expressing himself and his theories verbally when teaching in front of a classroom, than in translating these postulates to paper:

> Unfortunately, Park's universal curiosity and his never relaxing wonderment did not find sufficient expression in his own writings. He was full of projects which he never

succeeded in advancing. He wrote many valuable introductions to the books of his proteges, and he wrote about a dozen essays full of profound insights. But he could not quite put his vision into lasting words...That is why Park's vision of society—a very profound and true one—could not be passed on easily to succeeding generations of scholars. He never succeeded in putting together his views about human ecology and his views about collective consciousness (Shils 1991, para. 36).

A possible consequence of this putative inability to completely express himself in writing may be the decades of intense criticism to which his works were subject, and the generations of scholarship that were built on these criticisms.

Ecologists, particularly the early Chicago School authors, are frequently criticized on numerous grounds, most of which pertain to human ecology's underlying assumptions. Quite apart from the purported speciousness of overdrawing the analogy between the "web of life" and human society (Molotch 1983, 66), human ecologists—often conducting research that relies heavily on governmental or private sources that represents the interests of business and political elites (Feagin 1998a, 3)—assume value-neutrality in areas such as technology, and free competition for urban space within the context of a market economy (Gottdiener and Feagin 1988, 168-170).

Issues surrounding race figure prominently in critiques of human ecology, not just in terms of how ecologists tend to overlook the realities and consequences of institutionalized racism (Feagin 1998a, 8), but in how the early ecologists perpetuated the racist assumptions common during their era. Burgess, for instance, in explaining the division of labour in cities in terms of differentiation along racial and national origins, stated that

> [i]nteresting occupational selection has taken place by nationality, explainable more by racial temperament or circumstance than by old-world economic background, as Irish policemen, Greek ice-cream parlors, Chinese laundries, Negro porters...etc. (Burgess 1996, 95).

Although Park, too, is criticized for referring to "racial temperaments", he actually opposed racism in his writings, while at the same time arguing that subordinated racial

groups would, over the long term, gradually be assimilated into mainstream American society (Feagin 1998b, 3).

According to Maines and Bridger (1996), much of the early criticism directed at Park was unfounded and thoroughly misrepresented his ideas; unfortunately, subsequent scholars (especially Amos Hawley, A.B. Hollingshead and Walter Firey)—rather than returning to Park's work—based their theories instead on these misreadings, and did so to such a degree that a host of "mythic facts" surrounding Park's thought became textually integrated in the scholarship. For instance, they observe that Park never proposed the dualism between the cultural and the biotic. (A rereading—even a casual one—of Park's writing quoted on page 41 (above) reveals how he recognized the interrelationships between these factors).

Another historical difficulty lies in the fact that at least one later scholar claimed ideas which Park had originated decades earlier as his own. Sociological history texts (Schwab 1982, 25-27) describe how, in 1959, the neo-orthodox scholar O.D. Duncan first formulated the research device known as the "ecological complex" concept of POET, which is the acronym for *Population, Organization, Environment* and *Technology*. The four POET factors are thought to be the most important for determining the nature of social processes, and the interrelations between these factors allows human ecologists to systematically examine a wide range of influences (Duncan 1959). Duncan's accomplishment seems rather less remarkable when one reads Park's own writings from 1936—writings to which Duncan does not refer in his famous work:

> Reduced to its elements the human community, so conceived, may be said to consist of [these] elements or factors—(1) population, (2) artifacts (technological culture), (3) custom and belief (non-material culture)—into which the social complex resolves itself [and] the natural resources of the habitat (Park 1936, 15).

Using the POET complex (however erroneously attributed), ecologists address questions surrounding how cities form and where; how populations are distributed within

cities; and what structural patterns emerge from the interrelated POET factors (Schwab 1982 28-29). Models that have been used by ecologists for their analysis include the Burgess concentric zone model, (described above); the 1945 multiple nuclei model of Chauncy Harris and Edward Ullman (which saw outlying important urban centres challenging the primacy of the central business district, thereby anticipating Joel Garreau's insights regarding "edge cities" by over 40 years); and Homer Hoyt's 1939 sectoral land use model which emphasized radial development along transport routes (LeGates and Stout 1996, 90; Ley 1983, 73-4). Although the models of Burgess, Hoyt, and Harris and Ullman were all based on evidence found in Chicago's contemporary patterns (*ibid.*, 75), critics have continued to cite weaknesses in them:

> They are said to lack universality both historically and cross-culturally, to overstate firm land use boundaries that do not exist empirically, to insist upon a false homogeneity within zones and sectors, to produce schema that are altogether too simplistic, to imply overly mechanistic causal forces and to disregard significant social and cultural determinants (*ibid.*, 74)

It is this last criticism, that of neglecting social and cultural determinants, that has motivated much of the development in alternate approaches, particularly since the 1960s. Instead of finding inspiration in the sciences of biology and economics, these new paradigms seek to determine a host of influences within human relationships, biases, values and power dynamics.

2.1.3   Locational Conflict

The Locational Conflict paradigm sees in manifest urban patterns the complexities of conflict between groups of people whom, in the context of local housing markets, vie for desirable residential locations. Through political intervention in those markets, certain groups seek social homogeneity, i.e., to "price out" of the market "undesirables" such as the

poor (Lake 1983, xix). The locational conflict approach as described by Kevin Cox and his associates emerged in the mid-1970s, and unlike the ecological paradigm, which actively sought "grand theories" to explain urban processes, eschews such an endeavor (Dear and Long 1978, 114). As well, in contrast to many of the researchers working within neo-classical and ecological frameworks that assumed that urban processes could be studied utilizing models arrived at scientifically, authors adopting this paradigm do not expect to find scientific or technical solutions to the political components of locational conflict problems (Lake 1997, xvi-xvii).

Broadly speaking, it can be said that this framework replaces Adam Smith's 'invisible hand' with "voting mechanism[s], public discussion, [and] citizen participation" (Dear and Long 1978, 115). While the conflicts under consideration in this framework frequently arise over controversial developments such as nuclear power plants, high-rise development, landfills and homeless shelters (Lake 1987, xv), what is more important in terms of the distribution of groups of people are the actions taken by local interest groups to minimize the tax rate:

> Achievement of this goal depends on maximizing the tax base relative to expenditures and, therefore: (1) attracting into the jurisdiction those individuals and associated land uses which provide positive fiscal externalities; and (2) keeping out those imposing negative fiscal externalities (Cox 1978b, 95).

Exclusionary policies, such as single-use zoning and "gold-plated" subdivision regulations requiring expensive construction and materials, are only the most obvious of the strategies that are revealed by locational conflict research. The politics of exclusion are also exacerbated by the high levels of metropolitan fragmentation in the United States, which discourage the leveling influence of regional, state or national financial support or regulations (ibid, 94-105).

At the core of such conflicts must be an accounting for the values and ideologies of the people involved, as well as an acknowledgement that such groups are not entirely homogenous, are often conflicted within themselves, and the contrast between short-term and long-term effects reduces one's ability to determine winners and losers (Ley and Mercer 1983, 18-142). As such, a focus on locational conflict adds a dimension of real-world circumstances that is often lacking in both neo-classical and ecological studies.

Strictly defined to focus only on the political actions of citizens, locational conflict alone cannot account for the important influence of institutions in spatial patterns of distribution. This is why a closely related—and very complementary—framework has also emerged, one that examines the influence of institutions and "urban managers".

2.1.4 Institutional Constraints

The point of departure between locational conflict studies and those featuring the constraints posed by institutions is that the role of "urban managers" such as developers, real estate agents, financial institutions and government is emphasized (Lake 1983, xix). Whereas neo-classical and ecological scholars posit a "demand-oriented" approach to the study of housing markets, researchers utilizing the institutional constraint paradigm recognize that significant barriers can be erected to steer certain social, economic and racial groups towards or away from a particular urban area. As such, the housing market cannot be called a "free" one. As first articulated by Ray Pahl in 1969, the institutional approach recognized that:

> [t]here are fundamental *spatial* constraints on access to scarce urban resources; there are fundamental *social* constraints on access to scarce urban facilities...[and] bureaucratic rules and regulations [and] social gatekeepers...help to distribute and control urban resources; populations in different localities differ in their access and opportunities to gain...scarce resources...[and] conflict in the urban system is inevitable...(Pahl 1983, 148; italics in the original).

This paradigm acknowledges the numerous ways in which institutions impact locational decision-making. Real estate agents in this paradigm become "gatekeepers" who can prevent clients from accessing housing in certain neighbourhoods owing to the clients' race or class, and rights to housing are abrogated by restrictive covenants which forbid subsequent resale to non-white purchasers (Ley 1983, 287-289).

Most significantly for the purposes of this thesis, however, is that an emphasis on the role of institutions brings into sharp focus the undeniable power of government subsidies, policies and regulations in the process of suburbanization (Checkoway 1983, 173-196; Gelfand 1975). These influences have been complemented both at the federal and local levels with the insidious practice of redlining, in which financial institutions deny loans to residents in inner-city areas, preferring instead to invest in wealthier, suburban developments (Ley 1983, 293). The other powerful agency in the institutional paradigm is that of the development industry, which was instrumental in the postwar period in lobbying the U.S. federal government to direct programs towards the support of new suburban construction (Checkoway 1983; Gelfand 1975).

Once we have accepted the proposition that capitalistic groups and individuals have helped to develop cities to suit their own ends, it is a very short leap to our next selected paradigm: Marxism.

2.1.5 Marxist or Political Economy Approaches

Although Karl Marx himself did not orient his theories specifically to cities (Castells 1976, 60; Kleniewski 1994, 278), the application of Marxist thought to the "urban question" offers approaches to the urban scholar that are not fully available in the previously discussed paradigms. It is beyond the scope of this thesis to explore the sundry ways in which Marxist

thought may be used to interpret urban processes; however, inasmuch as urban sociology has always sought to be a general science of society (Bottomore and Goode 1983, 1), it is hardly surprising that urban theorists would eventually turn to Marxist philosophy (otherwise known as *political economy* [Forrest *et al,* 1982]or *historical materialism* [Pickvance 1976, 1]). After all, Marxism (in its many variations) encompasses in its broad sweep economics, civil society, the state, ideology and science (Bottomore and Goode, 5). What is surprising is that such urban theory should only have emerged since the 1960s (Feagin 1998a, 5).

Marxism represents a fundamental departure from neo-classical, ecological, locational and institutional frameworks in three ways. Firstly, whereas market-oriented approaches assume a society of individuals with established tastes and preferences, Marxism posits that these values are structured by broader social contexts, which are themselves dictated by the current stage of the "mode of production," i.e., capitalist industrialism. It is the mode of production, then, which must be analyzed first. Secondly, market-oriented frameworks depend for their analysis upon issues and circumstances surrounding *exchange* (such as property and land), and the conflicts and social interactions that result. Marxists find it more compelling to instead examine *production,* which they see in terms of capitalists who control the means of production, and workers who sell their labour for this production. Finally, traditional economics views market-based exchange as a natural process, while Marxists view these market processes as the results of relationships between people based upon class (Bassett and Short 1980, 171-172). Put succinctly, a Marxist framework in urban analysis sees

> [t]he urban question...first and foremost [in terms of] the product of the capitalist mode of production, which requires a spatial organization which facilitates the circulation of capital, commodities, information etc. Even if certain problems exist which are specific to the city as such, at the economic level there is no specifically urban social relation. There are only class relations determined by the contradiction between capital and labour (Lamarche 1976, 86).

One of the first to apply Marxist thought to the city was French Marxist sociologist Henri Lefebvre, whom, in his 1967 book *Le Droit à a Ville* (Right to the City) stressed that the point of departure for urban analysis must be industrialization. This approach distinguished between *use value* and *exchange value*, the former being the *oeuvre*, or everyday, nonproductive and celebratory use of public space, the latter being "the irreversible tendency towards money and commerce, towards exchange and *products*" (Lefevbre 1996, 66 [italics in the original]). His principal thesis was that the

> city and urban reality are related to use value. Exchange value and the generalization of commodities by industrialization tend to destroy it by subordinating the city and urban reality (*ibid.*, 67).

For Lefebvre, corporate power was the primary force in the regulation and distribution of urban space, and unlike ecologists (who saw the patterns in urban space as the result of natural processes), he perceived the influence of *agency*—specifically that of the ruling classes—and this intervention resulted in the spatial arrangement of the working classes according to industrial sectors (*ibid.*, 74).

Two groundbreaking works emerged in the 1970s which utilized Marxist thought: David Harvey's *Social Justice and the City* (1973) and Manuel Castell's *The Urban Question* (1977). In his book, Harvey countered ecologists' assumptions regarding the formation of slums—specifically that they were the inevitable and natural result of competitive bidding for land—by arguing for social controls over land markets. Castells—following on his famous 1968 essay "Is there an urban sociology?" (in which the author views urban sociology not as a science, but as an ideology [Castells 1968])—wrote that urban sociologists are not truly studying the city *per se*, but rather the urban manifestations of industrial capitalism. As such, the contemporary city can be seen as being deliberately structured for purposes of capital

accumulation, social consumption, and meeting the needs of the working population (Kleniewski 1994, 285-6).

While Marxism does bring a whole new dimension to urban analysis, it can also be said that it shares with neo-classical economics a single-mindedness that limits its utility:

> A one dimensional reduction to economic categories alone brings about an inappropriate theoretical foreclosure...to conceptualize problems only in the categories of political economy is to make the world over into a giant workhouse (Ley and Mercer 1983, 120).

Because of this perceived limitation, some scholars have opted for a more holistic approach, one that retains not only elements of the Marxist paradigm but encompasses aspects from many of the previously mentioned frameworks: the "new urban sociology."

2.1.6 The "New Urban Sociology"

The research agenda associated with this paradigm derives in part from many of the same authors as do Marxist approaches (such as Harvey [1973] and Castells [1977]). It is therefore unsurprising that its advocates have, in the literature, often been dismissively and inaccurately labeled as Marxists (Gottdiener and Feagin 1988). In fact, the "new urban paradigm" or "critical urban paradigm" is much more inclusive in its scope than is the Marxist, production-oriented framework. Indeed, the whole concept of a nomothetic theory of urbanization has little place in new urban sociology research. Instead of presenting itself as a unitary theory, the new urban sociology encompasses a diverse range of conceptual and theoretical streams in urban sociology and planning. Societal processes and structures are studied in this paradigm in terms of how they produce advantages for certain groups and disadvantages for others, particularly as a result of the actions and motivations of economic and political elites. Social and development patterns in cities are also seen to be influenced by powerful institutions and global forces (Smith 1995).

Ecologists view the spatial arrangements in cities in terms of adaptations, invasion and succession; new urban sociologists, like the Marxist scholar Lefebvre, see these movements as the result of agency. In his 1976 article, Harvey Molotch revealed that the development of cities is largely the result of what he called "urban growth machines": coalitions of politicians, developers, speculators, real estate companies, banks and other private interests that encourage urban growth to further their own economic interests (Molotch 1976). Following on this work, Feagin (1983) revealed four discrete fractions of this intervention in urban growth: industrial, construction, finance and development capital—the latter of which is largely responsible for shaping and equipping urban spaces to expedite the efficiency of the other forms of capital. Also echoing Lefebvre, Logan and Molotch (1987) determined that urban growth coalitions are primarily interested real estate for its exchange value—rather than its use value—and in creating a "good business climate" that will increase the value of urban land. Logan and Molotch demonstrate how the desire for civic wealth and growth on the part of a wide range of groups creates consensus among these groups, and that elites are then able to use this "growth consensus" to "eliminate any alternative vision of the purpose of local government or the meaning of community" (Logan and Molotch 1987, 51).

There are several reasons why local governments are primarily concerned with growth. One is that most politicians are highly dependent on private campaign financing, with the result that the winning candidates are then put "squarely into the hands of growth machine coalitions" (*ibid.*, 67). Another is that research has shown how municipal institutions are peopled extensively with developers or those associated with the property industries. Canadian studies reveal that up to 80% of individuals on land-use advisory bodies are developers (Fowler 1992, 150). In addition, since the postwar "growth coalition"

between labour and industry, unions have been reluctant to oppose projects promising "growth", and therefore have become very much a part of competing growth machines (Logan and Molotch 1987, 82).

The emphasis on how advantages and disadvantages are manifested in urban form is most apparent in what the critical paradigm reveals about urban race- and class-based issues. Whereas these conflicts are explored rather inappropriately in the neoclassic paradigm (i.e., solely in relation to market forces) and somewhat inadequately from an ecological perspective (which assumes that change influences a community from the outside), the new urban sociology gives considerable emphasis to studying spatial discrimination according to race and class. The critical paradigm assumes that change is brought about by antagonistic social relations and the exercise of power *within* the community itself (Gottdiener and Feagin 1988, 174). As such,

> [m]oving class and racial oppression to the center does a number of important things for urban analysis. It makes clear that we must...move beyond much mainstream discussion that blames the values, behaviors and cultures of the poor or of people of color for urban problems. Some can live in prosperous urban enclaves because others must labor in poverty and racial degradation (Feagin 1998a, 20)

Many of the assumptions of ecological thinking revolve around the value-neutrality of the influences on cities and social organization. This is particularly true as it pertains to technological changes, especially those in transportation and communications, which are thought to occur "outside" the social system and to which society consequently adapts. The critical paradigm, on the contrary, sees technology as a social product, the development, marketing and application of which is determined by political-economic processes that generally benefit the rich and powerful (Smith 1995; Gottdiener and Feagin 1988, 170).

It is the exercise of power, especially by corporations in a global economy, that takes on special significance in the new urban paradigm, for, "[m]ajor cities...are the cotter pins

holding the capitalist world-economy system together" (Feagin 1998b, 65). Within this view, then,

> [c]orporate investment and disinvestment are linked constantly to state action and have major economic, social and political effects on urban households and communities. The capitalist world economy is integrated economically but situated geographically in those human spaces we call cities (Feagin 1998a, 26).

In their programmatic statement of new urban sociology, Gottdiener and Feagin compared the insights revealed by the ecological and critical perspectives through an examination of three oft-researched themes in urban history and sociology: central city restructuring, suburbanization, and the growth of the American "Sunbelt." In each case, they not only found the ecological framework wanting, but discerned that similar forces were at work in all three trends: multinational corporations—encouraged by globalization—shifting their manufacturing to locations with cheap labour; support from the state and growth coalitions for ambitious central-city redevelopment projects; state subsidies for housing and deconcentration of manufacturing; capital flow in the secondary circuit of real estate; and finally—and significantly, for our purposes—massive federal spending on defence-related industries, most of them distributed in the Sunbelt (Gottdiener and Feagin 1988, 175-179).

We may conclude from the forgoing that the critical paradigm of new urban sociology embraces elements familiar to locational conflict, institutional constraint and Marxist approaches. However, it broadens considerably our understanding of cities within a globalized economy and focuses our attention acutely on the disparities of power between racial and class groups. Because the new urban paradigm also socially and politically contextualizes technological advances and insists that "no society can be adequately analyzed without reference to...its long-term history" (*ibid.*, 174), it has not inconsiderable relevance for the present work.

2.2 Conclusion

It should be recognized that, in most cases, the analytical paradigms described above constitute the application of an exogenous philosophy to the study of cities: neo-classical economics, Darwinian biology, political science, and Marxism. Yet,

> the boundaries between categories are at best indistinct. Political conflict factors have been introduced into studies originating in a human ecological framework. Institutions and urban managers can be and have been analyzed from a Marxist perspective. The blurring of distinctions appears to progress in step with the development and maturation of a perspective, as later work fuses with concepts from other approaches in a hybridization process (Lake 1983, xiii).

This last observation is further borne out in Smith (1995), in which the author advocates the adoption by critical theorists of certain principles from early human ecologists such as McKenzie and Hawley, and to consider that the new paradigm could benefit from placing more of an emphasis on factors traditionally considered ecological, such as technological change and demographics.

The reason why the structural and ideological differences between these paradigms have been explored here to such an extent is that this thesis is concerned with an aspect of urban history that the author believes has been extraordinarily neglected. As such, it is vital that we note that "there is a necessary and close relationship between the sorts of questions [a paradigm] asks of the world and the conceptual apparatus it brings to bear on answering those questions" (Cox 1978, 1).

The questions for which we are herein seeking answers are the very ones asked by the paradigms under discussion. Our interests concern, to a profound degree, the nature of our society's adaptation to a technology of unprecedented power; locational decisions, the valuation of urban land; symbolic meanings in urban space; the impact on the mode of production; and the socio-political contextualization of technology.

A more subtle reason for such a detailed theoretical exploration is revealed in what these intellectual traditions tell us about the formation of knowledge, specifically how certain "knowledges" may be either integrated into the scholarship or forgotten. We have seen how authors offering a critical challenge to orthodox ecological perspectives have been routinely labeled as "Marxists" and therefore effectively dismissed from serious consideration. We have also seen in Maines' and Bridger's research (1996), how urban scholars have selected from the works of their intellectual predecessors and thus set the bounds of subsequent academic debate. That decades of sociological scholarship could, for example, credit the POET concept so undeservedly to O.D. Duncan demonstrates Maines' and Bridger's argument about "mythic facts" and the propensity for some scholars to repeat the unquestioned assumptions of their predecessors.

While this phenomenon clearly deserves its own dedicated study, such attention is beyond the scope of this thesis. The author shall, however, note that it does have considerable relevance for the present work, in that it may assist in explaining to some extent how the defensive dispersal movement within the city planning profession could have so thoroughly disappeared from the present literature and discourse (see **Chapter 7**). A preliminary explanation may be offered in the recognition that, owing to the "entrenched" nature of ecological approaches in American sociology, there has existed a level of

> [i]ntellectual control [that] reflects a manner of thinking about urban events and the right methods to study them—a mode of thinking that permeates empirical and theoretical analysis in the United States to the extent of *limiting the range of questions pursued and of discouraging alternative explanations* for urban phenomena (Gottdiener and Feagin 1988, 164, emphasis added).

Before we can pursue questions relating to an alternative explanation for urban phenomena, we must first understand the social, political, historical and design contexts in which the instigating philosophy for these effects originated.

Chapter 3.0

Contexts

3.1   Introduction

Just as the new urban sociology reminds us that "no society can be adequately analyzed without reference to...its long-term history" (Gottdiener and Feagin 1988, 174), (and in keeping with our sociology of knowledge framework), it would not be possible for us to gain any real understanding of the literature of defensive dispersal without first reviewing in modest detail the major contexts in which it emerged. This discussion will show that there were precedents for many of the designs and theories of dispersal, and that the essence of their proposals—low density urban form—was one that featured in contemporary notions of urban utopias (Fishman 1982). As well, the connections between civil defence and the design professions had been previously promoted in World War II and thus informed the later movement. We will note how the theoretical stance taken by planning in the 1940s and 1950s predisposed the profession to welcome the ideas of dispersal. Furthermore, the role of the American federal government in urban policy is outlined, for government was considered essential for the promotion of the those ideas. The political tenor of the time, characterized as it was by paranoia and persecution, is also vital to our understanding of planning in the early postwar period.

Finally, it is necessary for us to comprehend that the dispersal-advocates were responding to an historical event of unprecedented nature: the mechanized mass-slaughter of the residents of Hiroshima and Nagasaki.

3.2 Design Contexts

3.2.1 Cities of the Future

"...the world, far from being finished, is hardly yet begun...the job of building the future is one which will demand our best energies, our most fruitful imagination; and that with it will come greater opportunities for all."

> --from the souvenir booklet of the 1939 New York World's Fair, (Harrison 1980, 101).

When Lewis Mumford observed that "cities are a product of time", that "in the city, time becomes visible" and "time clashes with time", (Mumford 1938, 4) he was referring to the remnants of the past that everywhere remind us of earlier peoples, architectural styles and social needs. Yet, there is another time for which the idea of "the City" has become almost synonymous, and that is the future.

When we seek to envision the future, it often finds expression as a city. During the past century—and especially before World War II—numerous works of literary and cinematic science fiction produced visions of the 'city of tomorrow' that were both wondrous and terrifying, ranging from cities with halo-like elevated roadways winding amongst a forest of skyscrapers, to those that float in the sky or underwater. In literary futurism, though, the city was frequently depicted in dystopian terms—overcrowded, decaying, and threatening (Ash 1977, 164-171). In spite of this pessimism, the subject never failed to elicit enthusiasm from dust jacket and magazine illustrators (Kyle 1976, 55-61).

Science fiction movies in particular gloried in the possibilities of tomorrow's city, giving us the spectacular but unjust society of *Metropolis* (1926), the charmingly art-deco world of 1980 in *Just Imagine* (1930) and the subterranean and utopian city of *Things to Come* (1936). This latter film is of special note here, for in it, the underground city is seen as a remedy against a world ravaged by war.

Although these early creations often merely extrapolated contemporary styles, conditions and technology, they nonetheless represent the aspirations, dreams and optimism for the future that were widely expressed during a time of rapid technological and social changes. Before World War II, the futuristic city of popular culture appeared as both a utopia or as a warning. Unfortunately, it was not always possible, even for the most prescient, to determine which was which.

The theme of the New York World's Fair of 1939, which is arguably the best-known of the World Fairs, was "Building The World of Tomorrow". This theme was spectacularly represented by a pavilion called "Futurama", which was sponsored by General Motors. It was by far the most popular exhibit at the Fair, attracting an estimated 25 million visitors over a two-year period (Harrison 1980, 101). Designed by Norman Bel Geddes, Futurama depicted a city dominated by seven-lane expressways that ran tightly between skyscrapers, with traffic engineered through radio control to reach speeds of 100 miles per hour. In this futuristic vision, pedestrians were banished from the streets, and isolated instead on elevated walkways. The prediction of "Futurama" proved extremely popular, and this was good news for General Motors, who had invested in the Fair as a way of engendering support for public works and highways (Kay 1997, 218).

Beneath the dome of the famous perisphere lay the second urban vision offered by the fair: Democracity, which was intended to be the synthesis of the ideals of the fair, a fully realized "World of Tomorrow" in miniature. It was, in fact, accurate only in that it predicted continued adherence to single-use zoning: business, educational and cultural institutions are fixed in the hub of "Centerton" (which was, improbably, served by a single hundred-story skyscraper); workers commuted from 70 outlying suburbs called Pleasantvilles; Millvilles

contained some light industry and bedroom communities; and all of these zones were connected by modern expressways (Cusker 1980, 14).

Before the Second World War, then, we can see that there was widespread enthusiasm amongst the public and industry for altering the urban form to enhance automobility, to create single-use residential areas far from central cities, and to create a World of Tomorrow that extrapolated contemporary trends to unprecedented levels. If this was to be the future, it offered an antidote to the historical American ambivalence towards the city, which was largely owed to a belief that metropolitan areas were overcrowded, pestilential and a threat to morals (Jackson 1985, 68-9; Beauregard 1993, 194-196). Instead, of course, the desired future of the kind envisioned at the Fair brought with it a host of social and environmental ills for which we have only recently sought remedy.

3.2.2 Ebenezer Howard and The Garden City Movement

Ebenezer Howard (1850-1928) too, saw in the cities of his time a multitude of evils: overcrowding, the vile output of dirty industries, and sundry social inequities. A stenographer by trade with no training in architecture, he nonetheless managed to articulate, in his 1898 book, *To-morrow, a Peaceful Path to Real Reform*, (retitled in 1902 *Garden Cities of Tomorrow*) a vision of the city that would have tremendous influence on both sides of the Atlantic, contributing to the New Town movement in England (Clapson 1998) and housing under Roosevelt's New Deal (LeGates and Stout 1996, 345). In designing an urban form dependent on separating land uses and integrating natural areas into cities, he essentially created a template for modern town planning (*ibid*).

The premise of Howard's Garden City idea was a simple one: there were "Three Magnets" for the urban dweller—the town magnet and the country magnet, each with its

attractions, benefits, deficiencies and problems. The third magnet, that of the "town-country" combines the beauty of nature with social opportunities of the city; low rents with high wages, pure air and water with field for enterprise. Howard maintained that town and country were meant to be together, just as were man and woman (Howard 1996, 348).

Yet the Garden City was to be no brick-and mortar vision: it was nothing less than a radical social experiment of land reform which came with its own practical guide for carrying it out. This plan involved philanthropic investment leading to land ownership and, for all practical purposes, an urban welfare state (Hall 1998b, 3). While some of Howard's vision would be realized in the English Garden Cities of Letchworth and Welwyn, these were slow to get underway and—contrary to his notions—only became viable after the government's 1947 Town and Country Planning Act sped up the rate of their population growth (*ibid.*, 2).

The design of the Garden City itself was not so much a design as it was a concept, for Howard had no interest in situating his ideas in a real-world landscape. His plan was a "diagram only" for his description was "merely suggestive, and will probably be much departed from" (Howard 1996, 350-351). As a concept, though, it was undeniably elegant: scarcely a mile across, the city is traversed by "magnificent" boulevards radiating out from a central 5-acre park with gardens surrounded by the central civic buildings. A "Crystal Palace" circling the parks and buildings was to have housed merchandise and winter gardens and essentially to have functioned as all-season public space. Outside the central district are neighbourhoods of houses, each set on their own "ample" lots (although, at 20 ft by 130 feet, might be eschewed by many homebuyers today). All the districts have their specific functions, and factories and warehouses are placed on the outer ring near the circumferential rail line. The organic wastes of the town are to be used in agricultural plots, making it very

similar to latter-day concepts of sustainability (*ibid.*, 356-353). Unhappily for advocates of urban sustainability, while many of his ideas became exceedingly popular—single-use zoning among them—they coincided with other social and technological trends which diluted their intentions. Howard, for instance, sought to place homes, services, schools and businesses within walking distance of one another; modernist planning and automobile-oriented development made this a rare condition (Hall 1998b, 2).

Most importantly for the purposes of the defensive dispersal movement, the Garden City was not simply a new suburb built on the edge of an existing city, but an entirely new community built out in open country (Howard 1996, 349); as such, it became an important source of inspiration.

3.2.3   Frank Lloyd Wright's Broadacre City

The other model that surely bears discussion in this light is the Broadacre City concept of Frank Lloyd Wright, which he revealed to the world in 1935 as a viable urban form in which telecommunications and the automobile would have eradicated the need for density.

Like Howard, Wright premised Broadacres on three major factors, which he perceived to be the automobile, telecommunications and advances in industrial mechanization. Also like Howard, he saw in his concept a means by which certain social objectives might be obtained for "man": economic reform in terms of social credit to replace gold; his right to hold and improve land; and "public ownership of invention and scientific discoveries that concern the life of the people" (Wright 1996, 378). With these freedoms, people would be rid of the evils of "Rent", which was Wright's all-purpose term for exploitation, be it payment for the use of land, interests on loans, or private ownership of

invention (Fishman 1982, 124-125).

To fulfil the potential of these technological forces and to free its inhabitants from the tyranny of the city and the ways in which they are governed, the city is essentially dissolved, replaced with a vast built form—one hesitates to call it an urban form—that might be 100 miles across with no discernable centre (*ibid*, 127). All homeowners not only have their own car, but a minimum plot of one acre of land to till as well. So situated, the American family would re-inhabit the countryside, and human society, built as it would be on individuality and self-determination, would thrive.

The utility of this model for the present study does not reside simply in its depiction of a built form of extremely low densities; Wright also saw the architect as the "agent of the state in all matters of land allotment or improvement"—even to the point of determining that childless couples, for instance, would be granted smaller lots than couples with families (Wright 1996, 378). Wright's concept of local governance, stripped of every function save those concerned with land, made the architect—the best mind of the community—a veritable "philosopher King of the County Seat"(Fishman 1982, 143). Although lacking in detail as to how this architect would relate to higher levels of government, in this matter Wright also presaged the defensive dispersal movement for, as shall be shown below, its project was also to be conducted in close collaboration with government.

3.2.4 Le Corbusier and the Radiant City

A leading Modernist, Le Corbusier (born Charles-Edouard Jeanneret) has become famous not so much for what he built but for concepts which became deeply embedded in the designs of others (LeGates and Stout 1996, 367). As Scott (1998) observes, not even the

Soviet Union could manifest the authoritarian nature of his vision. His "Contemporary City" was to be—unlike Howard's and Wright's—a "rebuilt" city, one that would eliminate the existing congestion at the centre of cities and replace it with a Radiant City of mammoth skyscrapers set in a Great Park. While he sought to increase the densities in the central City by building vertically, overall densities are kept low because so much empty space exists between the towers.

It is not considered necessary here to examine in too much detail the design elements of the Radiant City, for Le Corbusier's urban vision—increasing densities in the centre—was quite opposite to that of the dispersal planners. What we should understand is that Le Corbusier's intentions for carrying his designs forward would resonate in much of the defensive dispersal literature. Le Corbusier saw the planner as a surgeon, who tears away diseased flesh in order to impose his own order (Fishman 1982, 210). Like Baron Georges-Eugene Haussmann before him, who in the 1850s leveled a great swath through Paris in order to rebuild it (Hall 1998a, 714-745), Le Corbusier sought to demolish the city and replace it with one of his own. Like Haussmann, he also sought to impose his vision (Plan Voisin) on Paris, which would have completely paved over two square miles in the Right Bank district (Fishman 1982, 206). The visions put forth by dispersal planners would also portray the congested centre as diseased and dangerous flesh in need of removal (Chapter 4)

3.2.5 Design Professions and Defence During World War II

That ancient fortifications may still be seen in some older European cities attests to the long association between the design of cities and the exigencies of war. Yet, during World War II the design professions became involved in a new mission: camouflage and civilian defence.

According to Boyer (1983), American planners during the war were already contemplating the effects of mass bombing on the potential growth of suburbia (Boyer 1983, 264). British planners and architects were, however, much more intimately concerned with what their professions could contribute to protecting English cities and towns from German air raids, which were to prove devastating.

An excellent overview of the literature that British designers produced during this period was reprinted in the *Royal Architectural Institute of Canada Journal* in 1942. Although some of the concepts promoted by wartime designers—optimum structural materials and shelter design—would be resurrected in the nuclear age, others—camouflage and concealment—would, for obvious reasons, not be. The overall atmosphere is, unsurprisingly, also much different than what we see a mere three years later. There is no interest in providing complete shelter for the total population, and not only because it would be impractical—it would actually be *depressing*, for in "the seeking of shelter is the very negation of the fighting spirit essential to effective resistance to attack"(RAIC 1942, 76). Such pluck could not survive August 1945 intact.

While there were many differences in both scale and approaches taken by wartime designers towards non-military civilian air defence, the tradition of architecture and planning in this area was still quite fresh and, apparently, considered extremely relevant to the atomic age.

3.3   Theoretical Contexts

3.3.1   Tradition: Policy Analysis

The means by which defensive dispersal advocates promoted their ideas falls within a recognizable planning tradition. In *Planning in the Public Domain*, John Friedmann identifies

four traditions of planning thought, ranging from the conservative to the revolutionary: policy analysis, social learning, social reform, and social mobilization (Friedmann 1987, 74-75). Of these, policy analysis, with its dependence on the objective methods of science, and on public policies that mould society into the—highly modernist—"image of a machine" (*ibid.*, 139-140), most closely describes the methods and goals of the dispersal movement.

Although policy analysis was first articulated only in the last years of the 1960's, its intellectual tradition extends back to the 18th century (*ibid.*, 137-138). It is also strongly identified by the ease with which its practitioners allied themselves with established authority. During World War II, for example, social scientists found themselves working closely with the American government on such projects as "psychological warfare, military selection and training, military intelligence, propaganda, production planning... [as well as] join[ing] another group of scientists who...were working for the government on new weaponry such as radar and rockets and the atomic bomb" (*ibid.*, 146).

After the war, many social scientists reluctantly left the orbit of power to return to their earlier – and mostly lower paying – academic positions. Significantly, many of these practitioners would come to collaborate on an influential 1951 collection of essays entitled, *The Policy Sciences, Recent Developments in Scope and Methods*, which was prefaced by a reference to the atom bomb, and how the "awesome discrepancy between the 'mastery over the inanimate' and 'fumbling efforts to resolve the problems of human relations'" could be ameliorated by planning (*ibid.*, 147). To accomplish this task, the planning profession would need to match goals to action, and means to ends. To do this, the profession would embrace instrumental rationalism.

3.3.2 Process: Rational Comprehensive Planning

It is worth noting that 1950 is identified as a cusp between two planning paradigms –
one that espoused substantial rationality, and one that embraced the rational comprehensive
model (Weaver *et al*, 1985, 145). The focus of substantial rationality is on efficient responses
to a given situation that are based on intelligent insight, in order that some positive end may
be properly accomplished (Chee, 1972, 5). The rational comprehensive model, on the other
hand, "defined rationality exclusively in terms of positive knowledge and instrumental
calculation. Such knowledge was claimed to be objective and universal...Politicians chose
values; planners provided the facts" (Weaver *et al*, 1985, 158). In this way, through its solely
empirical concern for instrumental or functional processes, and not on the substantive
consequences of the means taken to achieve a given object, it was a "typical product of [its]
time, the postwar economic boom and the first cold war" (*ibid*). The stated ends of
defensive dispersal were always vague; no real indication is given of what kind of a society
should result.

Pioneering sociologist Karl Mannheim differentiated functional from substantive
rationality by positing that "experts", concerned only with functional or instrumental
rationality, would simply carry out their jobs: "One would invent a bomb, another build it, a
third carry it aloft, and a fourth drop it," while a person with substantive knowledge of the
whole situation might "decide, for instance, whether to use a bomb to blast an entire city, or
indeed, whether a bomb of such frightening power should be built at all" (Friedmann,
quoted in Reade, 1985, 84).

Rational comprehensive planning assumed that planners would, in their positivist
rationality, have the ability to engage in reasoned interventions in society. Such interventions
meant prescribing thoroughly thought-out alternative courses of action (regarding an

unconsulted and undifferentiated public) for those in power, who are themselves, assumed to be benign (Sandercock 1998, 87-88). In a nuclear age, the appeal of rational comprehensive planning may well have lain in its "illusion of certainty" (*ibid.*, 89)—a necessary ingredient in Cold War ideology (see **Chapter 7**).

This model of planning must also be seen within the larger context of another powerful and closely related philosophy: modernism.

3.3.3   Context: Modernism

Before discussing modernism in the context of planning, it is worth specifying to what we refer. To be sure, modernism means different things to different disciplines and art forms, and has, in varying ways, been a force in western culture for almost five hundred years (Berman 1982, 16). Berman notes that in literature and the arts, several types of modernity are expressed: modernism that withdraws from the complexity of modern life, exists for itself and has no association with the larger society; modernism that revolts against that society; and one that uncritically opens up to it (*ibid.*, 29-32). Another form that is more relevant here is that which was also associated with pre-World War I Futurism—a movement that sought to sweep away traditional society and in fact embraced the Great War in 1914 as "hygienic". To the futurists, modern technology was to be celebrated uncritically, and their "machine aesthetic" found more refined expression in the designs of the Bauhaus school and Le Corbusier (*ibid.*, 26).

Boyer (1983) identifies this modernist "machine aesthetic" in planning and in architecture with a particularly anti-urban sentiment, in that modernist design approaches abstracted the city to the point where it could only be viewed mechanically—which is to say, as the sum of its functional components (Boyer 1983, 283).

Scott (1998) analyzes disastrous examples of modernist planning, some of which were oppressively authoritarian and brutal (such as Soviet enforced collectivization). He sets out four requirements for modernist catastrophes, the final two of which are an authoritarian state and a prostrate population unable to offer any kind of resistance. These are obviously not going to figure in the discussion below. His first two factors, though, are more germane: the first is a state's attempt to simplify society so as to make it legible, manageable and thereby more easily planned; and the second is the ideology of "high modernism", in which confidence in science and technology, and the desire for rational order, are both expressed aesthetically and visually—through cities that looked rational and well-ordered. Not insignificantly, planners embracing high modernism required the first element—state intervention—in order to carry their plans forward (Scott 1998, 2-5).

The manifesto of modernism as it applied to city-building was promulgated by Le Corbusier and the *Congres Internationaux d'Architecture Moderne* (CIAM). The modernist city was, among other things, to be planned according to a machine metaphor, decontextualized from its history, and to rely on state authority to achieve total planning (Holston in Sandercock 1998, 23). As Le Corbusier's Plan Voisin demonstrated (and urban renewal would make manifest) the modernist city would simply impose itself on the pre-existing city and sweep it away.

Beauregard (1996) describes the "modernist project" in city planning as an optimistic ideology, which believed in orderly progress through the application of rationalism and reason. Its solutions, applicable universally, were to be determined by maintaining objectivity from the object being planned (Beauregard 1996, 218). As will be evinced in the following narrative of defensive dispersal, only objectivity of the strictest kind could have produced plans for an urban structure that was predicated on its possible partial destruction.

Furthermore, modernist assumptions and analysis are premised on a very narrow "if / then" formula, as opposed to the postmodern "both / and" approach (Moore Milroy, 1990, 185). The resulting equation was, in the case of defensive dispersal, a simplistic one: "If major metropolitan areas are being targeted by nuclear weapons, then we should try to reduce their value as a target." A postmodernist view would recognize that decreasing the value of a city as a target also meant devaluing it as a city. The consequent response might be, "*Both* that cities are targets for nuclear weapons, and that, by doing nothing to decrease their value as either a means for human society or as military targets, it will be all the more difficult for a government to risk losing them in a nuclear war."

Such insight did not carry the day; modernism, whether it was expressed for reasons of rationality (i.e., single-use zoning) or—as shall be herein proposed—through the need for reducing the vulnerability of cities, led to the abandonment of traditional urban forms for American cities (Boyer 1983, 283).

3.4   Political Contexts

3.4.1   Federal Urban Policy

Although the American constitution does not officially recognize them, American cities have long been the recipients extensive federal intervention. While historically neglected by Washington D.C. before the Great Depression, cities would come to benefit from a variety of federal programs during President Roosevelt's New Deal, and have their ties to the federal government made more permanent by the Housing Act of 1937 (Gelfand 1975, 65). During the 1940s, thanks to a number of federal policies and agencies, only war production outpaced the strides made by city planning initiatives, such that it has been called a "renaissance" in American planning (Hanchett 1996, 285).

The 1934 Housing Act brought with it the Federal Housing Administration, which would prove to have a more powerful and widespread impact over Americans and their housing than any other agency. In this it was supplemented by the Veteran's Administration's 1944 "GI Bill", which helped over 16 million returning veterans to purchase homes (Jackson 1985, 203-204). The landmark Housing Act of 1949, which began with a "Declaration of a National Housing Policy", committed the country to remedy the shortage in housing, to engage in slum clearance, and expanded public housing (Gelfand 1975, 153). The urban renewal program was federally funded, as was 90% of the Interstate Highway system (see **Chapter 6**). Checkoway (1983) stresses that, although the literature has operated on an assumption that postwar suburbia "exploded" because of the expression of consumer choice, that this growth was in fact the result of large construction corporations making use of federal programs that deliberately promoted suburban housing at the expense of other alternatives, and that federal policy ensured that there was little, in fact, to choose from (for a further discussion of federal policy regarding suburbia, see **Chapter 6.2**).

The previously discussed *institutional constraint* paradigm of urban analysis (**Chapter 2.1.4**) recognizes the importance of governmental policy in urban development. Although this role was only a couple of decades old, it would become, in the early Cold War, one of the pillars of defensive dispersal that the government should take a leading role in steering urban development towards the low densities that were called for (see **Chapters 5 and 6**).

3.4.2 "McCarthyism"

On March 25th, 1947, President Truman issued Executive Order 9835, which authorized the Attorney General to document organizations that were considered to be "totalitarian, Fascist, Communist, or subversive" with a view to identifying Americans whom had either associated with these groups or were sympathetic to them. Present membership with such groups was grounds for immediate dismissal; only "past and regretted" memberships would allow an employee some hope (Caute 1978, 269). This policy (and those at the state and city levels which found inspiration in it) was intended to ensure the loyalty of about 13.5 million federal, state and civic employees, as well as those in defence-related industries.

It is misleading to identify rabid anticommunism solely with Senator Joseph McCarthy: Red Scares in the United States have had a long tradition, going back to the First World War, and the House Unamerican Activities Committee (HUAC) was begun in 1938 (Heale 1998, 9-10). Over a dozen states would, during the Cold War, institute their own "little HUACs" to carry on purges at the state level (ibid, 7). California, for instance, instituted a program in 1950 that "transformed all public employees into civil defense workers", which required that they had to take loyalty oaths and answer any questions put to them—on threat of dismissal—by state and legislative committees (Caute 1978, 341).

However, in 1952 when McCarthy was appointed chair of the Senate Committee on Government Operations, he immediately set himself up as the chair of its Permanent Subcommittee on Investigations, and for the next two years dominated the national scene with his hearings that demolished careers in the State Department, the Government Printing Office, various defence industries, and finally the Army itself (ibid., 106).

Merely associating with those who were suspected of communist sympathies rendered a person subject to investigation (*ibid.*, 279-286). Other causes included past support for the Soviet Union (an act which once had been, during the War, considered good for the war effort), subscribing to suspect magazines (*ibid.*, 276), or refusing to co-operate with investigators. A failure to conform to whatever constituted "loyalty" at a given time would be personally and professionally disastrous. To keep step, professional associations commenced issuing loyalty oaths. The chill that this environment cast across the professional world was immense:

> [It was observed that] "In such an atmosphere of fear, key government employees tend to become mentally paralyzed. They are afraid to express honest judgments, as it is their duty to do, because later, under a changed atmosphere and different circumstances, they might be charged with disloyalty by those who disagree with them." Psychoanalysts working in areas with a heavy concentration of government workers reported a rise in mental illness combined with a penalization of civil servants receiving psychiatric treatment (*ibid.*, 275).

Space does not permit a more in-depth portrayal of this repressive atmosphere, and it is not the intention of the author to determine to what extent this pall of intellectual repression determined the agenda for the defensive dispersal movement. However, insofar as planners have always been commonly employed for government at whatever level, there can be little doubt that planners were mindful of the need to appear as loyal and as patriotic as possible. The following testimony, while describing architects, is telling:

> It becomes almost dangerous these days to question any part of the civil defense proposals. Many architects are spending considerable time on the subject...[and] certain basic assumptions seem to be taken for granted...The patriotic appeal of moves for civil defense is...irresistible... (*Progressive Architecture* September 1951, 63).

The climate of fear that swept through society in these years was not, of course, owed to political repression alone. It was greatly augmented by the repercussions of the events of August, 1945.

3.5   Historical Contexts

3.5.1   Hiroshima and Nagasaki

On August 6th 1945, an atomic bomb was detonated over the streets of Hiroshima. The port city, surrounded on several sides by tall hills, was pummeled by the initial blast and the subsequent shock waves that reverberated off of those hills. A firestorm soon erupted and consumed the city, and approximately 90% of its buildings were destroyed or seriously damaged—84% of those being residences (Committee for the Compilation of Materials *etc.* 1981, 343). While it is thought that almost 14,000 people literally disappeared in the blast (Maclear 1999, 31), some 200,000 people are estimated to have died as a result of the bombing before 1950 (Committee for the Compilation of Materials *etc.* 1981, 369).

Three days later, Nagasaki was bombed. Cloud cover prevented a direct hit on the centre of the city, and the bomb fell two miles off target, in the Urakami valley. This time, although the bomb was, at 26 kilotons, approximately twice as powerful as the Hiroshima bomb, the hills protected some of the city from destruction (Rhodes 1986, 740). The structures in the Urakami valley, however, were utterly obliterated, and the death toll by 1950 had reached 140,000 people (Committee for the Compilation of Materials *etc.* 1981, 369).

From our own vantage point in history—and for those too young to remember—it is perhaps difficult to fully appreciate the enduring intensity of fear that permeated society in the years following these events. (As McEnaney has observed, latter-day accounts of this period are often "cutesy" and "obscure the most profound legacies of the era" [McEnaney 2000, 152]). The origins of this fear can be traced to the very birth of the atomic era, when social, psychological and cultural reverberations began manifesting themselves almost immediately upon the news of the bombings at Hiroshima and Nagasaki.

In spite of the celebratory atmosphere surrounding the end of the war, America's "mood at the moment of victory was bleaker than in December 1941 [after] Pearl Harbor" (Boyer 1985, 7). Within days of the bombings, Americans "quickly transmuted the devastation of Hiroshima into visions of American cities in smoldering ruins...[and] envisioned themselves not a potential threat to other peoples, but as potential victims" (ibid., 14). It was as if, "in exploding bombs over Hiroshima and Nagasaki, [Americans] frightened no one more than [them]selves" (Lifton and Mitchell 1995, 302).

Public opinion polls taken within weeks of the bombings indicated that a majority of Americans "foresaw a real danger of their own families dying in atomic attacks, along with most of the people in the world's cities" (Weart 1988, 134). As the nuclear era progressed— and especially once America's nuclear monopoly ended in 1949—the public's apocalyptic imagination was fueled by hundreds of books and films employing nuclear themes (Los Angeles, for instance, has to date been "nuked" at least 49 times in film and fiction [Davis 1998, 281]). A multitude of unstoppable cinematic monsters born of atomic radiation trampled cardboard cities in orgies of ersatz nuclear destruction, while atomic imagery pervaded every level of enterprise and popular culture, from cocktails to rock songs to children's toys (Boyer 1985).

Underneath this panoply of widespread but uneasy cultural adoption of the bomb, however, lay almost universal apprehension. As novelist and civil defence advocate Philip Wylie noted, this terror was so pervasive that "a huge fraction of the public, perhaps the majority, *already* displays clinical symptoms of hysteria and predisposing to panic" (Wylie 1954, 37[italics in the original]). As Lewis Mumford observed in 1950, in using weapons of mass destruction to seek security, humanity had created a state of total insecurity (quote in Boyer 1985, 351).

In matters of public reaction to the bomb, the government of the United States had

its own insecurities, one of which was the potential for opposition against the new weapon

among their own citizens, should they actually realize the extent of the damage inflicted by

the weapons. It was for this reason that such extraordinary measures were taken to ensure

that no "unofficial" descriptions of the stricken cities would be released:

> Early newspaper stories from Hiroshima were censored by the U.S. military; the first
> account from Nagasaki was killed entirely. Authorities at first denied, then
> downplayed, the fact that thousands of survivors were dying from radiation disease.
> The military confiscated all pictures taken by Japanese photographers in the atomic
> cities, and none was published in the United States until 1952. That the bomb had
> killed American POWs in Hiroshima and Nagasaki was denied for nearly forty years.
> Documents and decoded Japanese cables that raised doubts about Truman's
> decision were classified for decades (some still are). Even a Hollywood film on the
> first bomb was heavily revised, under orders from the Truman White House...
> Hidden from the beginning, Hiroshima sank, unconfronted and unresolved, into the
> depths of American awareness. As early as 1946, the writer Mary McCarthy was
> calling Hiroshima "a hole in human history." (Mitchell 1995, para. 32).

In addition to these restrictions against Allied reporting, postwar censorship codes in

Occupied Japan forbade the Japanese themselves from mentioning the atomic bombings,

nor were writers allowed to even acknowledge in print that these proscriptions existed.

(Maclear 1999, 42).

The inauguration of atomic warfare had come with a very carefully prepared

statement. President Truman, speaking for the cameras and to radio listeners, explained how

the bombing of "Hiroshima, an important Japanese Army base," had been conducted in

such a way as "to avoid, in so far as possible, the killing of civilians". The bomb, he said,

would end the war and prevent the deaths of "thousands and thousands" of Americans

(quoted in Lifton and Mitchell 1996, 27). This justification, which seemed to some a logical

conclusion at the time, continues to have many adherents (Maddox 1995).

Others argue that Truman's statement, and the official justifications for the

bombings, were disingenuous in the extreme. Hiroshima was neither an "important army

base", nor was it notable for its industrial productivity for Japan's war effort. In fact, as is noted by Alperovitz, Hiroshima's "pristine" condition in the summer of 1945 (i.e., it had not yet been bombed) was owed to the fact that it had not been considered an important target. Indeed, the criteria for its selection as a target for the atomic bomb acknowledged that it was unlikely to be the target of air attacks (Alperovitz 1995, 523-524). In regards to the matter of the hypothetical invasion that the bombings prevented, the number of the estimated casualties saved would increase dramatically over the years, from "thousands" to "millions" of Americans (*ibid.*, 516-517).

Although the general public reaction to the bombings in the United States was one of overwhelming approval, a significant minority also expressed dismay, sorrow, and outrage at what had happened. Leaders in the Catholic, Protestant and Nonsectarian churches, for instance, issued statements condemning the use of the bombs, calling it "a horrible deed", "atrocious and abominable", "the most powerful blow ever delivered against Christian civilization and the moral law," "morally indefensible" and "the supreme atrocity of the ages" (Boyer 1985, 200-203). The bombings had engendered such a degree of controversy almost from the date of their use, that by the end of 1945 public pronouncements such as Lewis Mumford's famous essay "Gentlemen: You Are Mad!" (Mumford 1998) constituted a serious challenge to the official narrative as it had thus been expressed in government statements and in the press (Mitchell and Lifton 1995, 75-92). The controversy only increased after the publication in 1946 of John Hersey's *Hiroshima*, (Hersey 1946) which, for the first time, gave Americans their first exposure to what the bomb had done to people on the ground. The thought that the bombings had not only been unnecessary but immoral rested uneasily on public opinion.

Official reaction to public doubts came in the form of a cover article for *Harper's* Magazine, "The Decision to use the atomic bomb," written by Henry Stimson, President Truman's Secretary of War (Stimson 1947). In this article, the official narrative was given its architecture: the bomb had always been considered a legitimate weapon by the American government; it was felt that a military installation surrounded by residences would be the ideal target; it was thought to be impractical to use the weapon in a "demonstration" blast because it might not go off; no warning was given so that it would provide the required shock to the Japanese, whose surrender offers had until then been conditional. The targets chosen were legitimate military targets owing to their war industries; and, as the only alternative was an invasion, the bombings were the "least abhorrent choice" available to President Truman (Stimson 1947).

The so-called "revisionist" viewpoint of this issue holds that the bombings were, in fact, unnecessary, particularly with regards to Nagasaki, which was attacked without giving the Japanese government adequate time to respond to the first one. The bombings are seen less as the means by which the Second World war was ended, but, as a means by which the Soviet Union might be contained, the first act of the Cold War (Alperovitz 1985). Revisionists actually have substantial "official" support for their claims: the U.S. Strategic Bombing Survey, which was convened by President Truman to assess the damage of bombings in both Germany and Japan, concluded in their final report that

> certainly prior to 31 December, and in all probability to 1 November 1945, Japan would have surrendered even if atomic bombs had not been dropped, even if Russia had not entered the war, and even if no invasion had been planned or contemplated (quoted in Lifton and Mitchell 1995, 83).

The merits of the arguments of both sides of this controversy have been set out in much more detail by others (Alperovitz 1995; Maddox 1995). Yet this briefest of narratives

demonstrates several important elements which should be borne in mind when considering

the theories of defensive dispersal:

- the psychological of shock the new bombs reverberated for years;

- because of official secrecy and misinformation, the bombs and their effects on human beings remained largely unknown to the American public;

- the use of atomic bombs against civilians engendered enough criticism and controversy that the federal government felt compelled to respond in print;

- there was a widespread and fearful realization that such bombs could eventually be turned against Americans.

This fear was to be the fundamental motivation behind the—functionally if not

ideologically—most important context for defensive dispersal: the civil defence program.

3.5.2   Civil Defence

Despite the warnings of the postwar "scientists' movement" that no such defence

would ever be possible, official and public urgings that a counter-measure to the atom bomb

be developed led, nonetheless, to vast efforts toward that end. These measures ranged from

new weapon ideas and programs encompassing entire military branches, to expenditures for

shelter construction and the concomitant mobilization of millions of citizens in the name of

civil defence (Weart 1988, 128; Henriksen 1997, 193-239). These initiatives, begun in earnest

in the 1950s, saw countless people, including schoolchildren, drilled in procedures by films

like the now notorious "Duck and Cover" film featuring "Bert the Turtle", and taught to

dive beneath furniture at the sound of air-raid sirens (Rafferty et al, 1982). Years later,

psychological studies revealed that growing up with this ever-present threat had traumatized

an entire generation of children with chronic dread and frequent nightmares (Weart 1988,

132).

Yet the civil defence program (or programs, for they have differed under various presidential administrations) was more than simply fallout shelters and "duck and cover" drills. As McEnaney (2000) shows, it involved nothing less than the militarization of everyday life. Because Congress had defeated early bills during the Truman Administration to fund shelter construction, civil defence became a family- and homeowner- centred affair. Every aspect of home life—and by extension, that of the housewife—became imbued with potential for concern in a nuclear attack:

> Home protection campaigns were a kind of nuclear-age version of the early twentieth century domestic science movement...Officials claimed that fire from the blast was more dangerous than the explosion itself, so dirty homes were potential kindling for nuclear firestorms. Establishing routines that kept the house clean, therefore, was the most important thing a woman could do to protect her family...the solution was to train family members to stay alert and keep those places debris-free- or even to hold family clean-up drills to maintain cleanliness (*ibid*, 109).

To further reinforce this domestication in a most graphic way, the FCDA produced an elaborate civil defence demonstration in May of 1955 with the nuclear test *Operation Cue*. This test placed suburban homes and other structures (built by AIA member architects)—as well as a host of everyday products and foodstuffs—in the path of a nuclear explosion to determine how well they would survive; the implication being that these very products might need to be put to a real-life test in one's own home (FCDA 1955).

With President Eisenhower's Administration (and the disturbing news about the power of thermonuclear weapons), the emphasis was placed on the evacuation of major cities rather than placing shelters within their boundaries. Between 1954 and 1961 the Federal Civil Defense Administration oversaw annual mock attacks and evacuation drills known as "Operation Alert," one of which in 1955 saw 37,000 schoolchildren driven by 6,000 drivers to "reception areas" outside of Mobil, Alabama (McEnany 2000, 47-50).

In President Kennedy's era, a new push was made for personal fallout shelters. This would reach a climax with "fallout shelter fever" in 1961, when President Kennedy urged families to build their own shelters, black and yellow fallout shelter signs appeared on public buildings, and some shelter owners publicly discussed the prospect of using guns to defend themselves against other survivors. Widespread recognition that this was just one of the many ethical dilemmas presented by private shelters, however, would see support for the shelter program plummet after the Cuban Missile Crisis (Henriksen 1997, 193-239).

McEnaney concludes that, in general, civil defence programs failed. Americans did not cooperate *en masse* with drills nor in meeting the readiness goals set by FCDA authorities. A combination of confusion, resignation and ambivalence about the bomb made the public mood far too complex for FCDA authorities to mould into the appropriate stance between fear and calm (McEnaney 2000, 153).

3.6 Conclusion

So far, we have historically contextualized the city planning profession by briefly reviewing a number of major professional and historical influences on city planning in the 1940s and 1950s. This time period was replete with dramatic—indeed, shocking—social changes. The world seemed an entirely different place than before the war, and the excitement of new possibilities—modernist approaches, postwar redevelopment, optimistic hopes for peaceful uses for atomic energy—was tempered by fears for the future and the politics of paranoia.

Theoretically, though, what we see in the literature provides us with a fascinating guidepost for the understanding the defensive dispersal project. The policy analysis tradition (which also purported to be functionally rational [Friedmann, 1987, 160]), the rational

comprehensive process, and Karl Mannheim's analogy concerning compartmentalized rationality (page 66), all become recognizable in defensive dispersal: the planners active in this field are experts supplying the required facts to support the values predetermined by the politicians; these values are assumed to be universally accepted; and the decision whether or not cities should be dispersed at all is subject to little debate.

With these contexts in place, we now turn to an examination of the defensive dispersal project itself.

Chapter 4.0

Defensive Dispersal in City Planning Theory

4.1   The Franck Report

The first suggestion that the urban form would need to be altered in order to counteract the atomic bomb was actually made by a committee of atomic scientists working on the Manhattan Project, and was presented in the form of a warning more than a month before the first bomb was tested at the Trinity site Alamogordo, New Mexico. Cognizant that there would be grave moral and social issues arising from their work, these scientists attempted to ward off a nuclear arms race by submitting to the United States government a brief entitled *The Report of the Committee on Political and Social Problems* (now commonly referred to as the *Franck Report* [Franck *et al*, 1945]). In it, they attempted to advise policymakers that the new weapon should not be used at all, or if it was, to be demonstrated at an uninhabited location in full view of representatives of the nations of the world. Using it on a Japanese city without warning would inevitably result in an arms race; and in the event of such a conflict, science could offer no defence against the effects of this new weapon. The only method by which industries and the civilian population could be protected would be to disperse them away from the metropolitan areas. In their view, if an enemy knew that any given bomb would fail to destroy a concentration of industries and people, and thereby deliver a crippling blow, then "the attack will not pay, and will probably not be undertaken." (Franck *et al* 1945, 4). Needless to say, their counsel regarding a test explosion was fatally ignored.

Shortly after the war ended, physicist Leo Szilard (one of the signatories to the Franck Report), conferred with his cousin, city planner Laszlo Segoe, about how cities could be redesigned in the atomic age (Lanouette 1998, 115). That year Szilard sent a letter to

Assistant Secretary of State William Benton, urging him to consider a plan to relocate 30 to 70 million people to linear cities, a project he estimated would cost $15 billion per year (Hare 1994, 105). He would be just one of several prominent atomic scientists who would, over the coming years, promote the defensive dispersal of cities (*ibid*, 117).

4.2 City Planners and Defensive Dispersal

The movement within the city planning profession to develop a response to the atomic bomb also began in the months following the end of the war, and was spearheaded by Tracy B. Augur. Augur was already a prominent, veteran planner by the end of World War II, and had, in fact, served as the president of the American Institute of Planners in 1939 (Adams 1950, 3). In the 1930s, he had acted as the assistant planner in the Regional Studies Department of the Tennessee Valley Authority (Augur 1948, 29). During his career with the TVA, Augur also served as a planning consultant on the development of Oak Ridge (Scott 1969, 396), the secret Manhattan Project "atomic city" built in Tennessee in order to support the manufacture of atomic bomb components (Rhodes 1986, 486). Previous to this experience, though, Augur had, throughout World War II, been "haunted...by the devastation visited upon congested European and British cities by air attacks" (Scott 1969, 449).

Given his employment history, it is probably not surprising that Augur should have led so pronounced and prompt a crusade for the dispersal of American cities, and would go on to do more than anyone else to make it happen. Exactly one year after the Hiroshima and Nagasaki bombings, Augur urged his planning colleagues to consider the threat of atomic warfare a "useful spur to jolt us forward" in the task of decentralization—a concept that had long been advocated by the profession (Boyer 1985, 152). As dispersal advocates Donald

and Astrid Monson would note in 1951, "we are fortunate [that] the way of building our cities which can minimize this danger has long been urged by students of urbanism as the only way of making our over-crowded, over-extended, inefficient cities into more fit places in which to work and raise our families" (Monson 1951b, 244).

In his 1948 article "The Dispersal of cities as a defense measure", Augur described in full the principal elements of his thesis, which he would repeat for years: if metropolitan areas were to be clearly designed so that they could continue to function after being atombombed, then such an attack is unlikely; but if a city is congested and vulnerable, it will not only invite such an attack, but could then do little "to support the retaliatory action needed for final victory" (Augur 1948, 30). For Augur, the form of America's cities was "a matter of national concern, to be set by the mandates of national welfare rather than the whims of individual builders" (*ibid*, 29). If America's cities are "arranged so that they function well, the nation can be strong"(*ibid*). He reminded his readers that defence is not limited to warding off the blows of an enemy, but in having the "ability to deliver counter-blows against an aggressor's home base" (*ibid*) After invoking the memory of Pearl Harbor, he urged his readers to consider that America's cities, like that unfortunate naval port, are concentrations of organizing capability and therefore desirable targets (*ibid*, 30).

In light of the tremendous amount of postwar construction that was then underway, Augur stressed that we could continue adding to our current, massive urban centers, thus making them inviting targets, or we could, with little extra cost, direct this construction into a "dispersed pattern of small efficient cities [that are] much more attuned to the needs of modern living, modern commerce and modern industry" (*ibid*, 31). Augur observed that America's urban patterns, having been set in the 19th Century, did not meet contemporary economic needs. Technologies such as telephone and radio had already obviated the need

for aggregations of people and buildings, and that planning smaller, more flexible urban units could account for the needs of the future as well. Augur believed these smaller units could, in fact, be replaced with minimal cost when obsolete. "We do not hesitate to scrap an obsolete factory and rebuild it on new lines if it is failing to keep pace with the demands of production; why should not the same course be applied to cities?" The advantages to this mode of thinking about cities were clear: it would increase the productive potential of cities, thereby improving America's war footing, and it could be done simply as a matter of carrying out the postwar redevelopment that was going to occur anyways. Finally, by improving through dispersion the social and cultural capabilities of cities, planners could improve the morale of those "who operate productive machinery [which is] as vital to production as the machines themselves" (*ibid.*, 32).

What Augur was proposing for the "urban target", its industries, and their "productive personnel", instead of a large urban mass, was a roughly circular cluster containing twenty small units two miles across with an area of three square miles each. The entire cluster would contain 886 square miles. All urban "units" are circular, as is the whole collection of "units". No point within these communities of 50,000 people would be more than a mile away from open country – the green space in between the towns would act as a firebreak in case of an attack (*ibid.*, 34). The ultimate goal of this arrangement would be not just to disperse the "urban target", but to disperse industry to the satellite communities (*ibid.*, 32). By Augur's reasoning, such a scheme would reduce an atomic bomb's targeting possibilities, reducing to one-in-fourteen the odds that a bomb would hit urban territory (*ibid.*, 33).

In addition to the creation of clusters of urban units, Augur also proposed the "more even distribution across the country of our productive facilities, our stocks of raw materials

and our technical and managerial forces." This is to be industrial migration on a national scale, not confined to a few "enlightened" centres (*ibid.*, 34).

Augur maintained that the benefits of his satellite communities would still be enormous even if nuclear war never came. The exchange functions of the city would be expedited by open land free of congestion, and, in providing easy access to so much green space, would offer a more wholesome environment than the congested cities of the day (*ibid.*, 33-34). Open country, not surprisingly, is also not extolled for its inherent values, but for its productive use during atomic war, when it would be a "source of food and emergency fuel" (*ibid.*, 34). An additional benefit would be that

> [dispersal] has equal value as a defense against the type of enemy penetration that has become so common and so effective in modern times and which depends on the fomenting of internal disorder and unrest...What fertility there is in this country for the growth of subversive ideas and actions is furnished by the decay of the city structure in which increasing millions of people spend their lives...Because a national program of dispersal does provide a comprehensive approach to this problem it offers as good a defense against internal enemies as against those whose attack is launched from outside our borders (*ibid.*, 35).

These McCarthyist sentiments aside, Augur's ideas for the urban form are, of course, immediately recognizable as a mutated grandchild of Ebenezer Howard's venerable Garden City concept (**Chapter 3.2.2**). Although dispersal plans are sometimes referred to in the literature as "Garden Cities", the credit for this design is rarely actually given to Howard. The city of industrial dispersal, like Howard's Garden City, has all factories "on the outer ring of the town" (Howard 1996, 352). The extent of the dispersal social program is that life in smaller communities surrounded by nature would be more beneficial than the large cities of the day; in this they also closely echo Howard. Yet with populations approaching 50,000 people, Augur's atomic satellite towns are somewhat larger than Howard's ideal of 30,000 inhabitants. Howard's green belts were meant to provide the benefits of healthy country living; their nuclear-era counterparts are meant primarily to prevent firestorms.

There are also some fascinating glimpses in this article into the political tenor of the times. Augur is clearly steeped in anticommunist rhetoric. Furthermore, this early dispersal article also provides ample evidence that defensive dispersal may be easily associated with the policy analysis tradition as set out by Freidmann (1987, 137-179). Policy analysis is, in fact, perfectly realized in the career and writings of Tracy Augur: recall his work for the Manhattan Project (Scott 1969, 396) and his advocacy of an urban form (or "unit") so oriented towards the "image of a machine" that it could, like an old factory, be torn down when obsolete (Augur 1948, 32). Augur's technocratic vision actually extends to the citizens within the city themselves, who are referred to primarily in terms of their productivity and their physical association with the machines of industry (*ibid.*, 32).

Discussions regarding changes to cities were not limited to the planning journals, or to city planners themselves, most amply evinced in the writings of Dr. Ralph E. Lapp, whose 1949 book, *Must We Hide?*, in addition to attempting a straightforward description of the facts of the atomic bomb and radiation, proposed some radical departures for the urban form. Lapp, an atomic scientist who was at the time working for the Office of Naval research, would also serve as a science advisor to the U.S. War Department and Executive Director of the Atomic Energy, Research and Development Board of the U.S. Department of Defense (Hare 1994, 103). He completed his book with the cooperation of "many officials in the National Military Establishment" (Lapp 1949, np); it therefore had "quasi-official status" (Boyer 1985, 314).

Lapp begins his chapter on the urban form ("Target: U.S.A") by pointing out that the differences in the type damage between Hiroshima and Nagasaki (the first having had a high loss of life and light industrial damage, Nagasaki the opposite) "were due to the arrangement of the two cities and not to any deliberate defense planning" (Lapp 1949, 140-

141). Had the Japanese not so seriously suffered from a "lack of planning", and used their shelters in combination with an "efficient detection system and an enforced alert [they] might have saved 80 percent of those who died" (*ibid.*, 149).

American cities, he went on to say, are "sitting ducks, well-fattened and inviting destruction", and most of American industry was concentrated in the "industrial heartland" in the northeast and north central regions (*ibid.*, 142). While nuclear attacks in the heartland would not seriously affect the ability of the U.S. to strike back, the potential for waging a long war would be "drastically reduced" (*ibid.*, 143-144). For Lapp, the answer to this state of affairs was sound, authoritative planning: "Our individualistic nation must be made to realize that some regimentation and obedience to competent authority will be required if bad situations are not to be made worse" (*ibid.*,150).

Dispersion, said Lapp, is like life insurance for the nation, but must not be ordered or directed—people must see the benefits of moving out of congested cities and do so on their own initiative (*ibid.*, 160). The cities that they would move to—Lapp's "optimum city"—would be one of three types: the rodlike city; the satellite city (which was very much in line with Augur's own ideas); and the donut city (*ibid.*, 162-164). In naming the donut city, Lapp was unusually prescient, for this term has come to represent many of the decayed inner city cores of our own era. Lapp's work is atypical of the urban visions of dispersal; most designs would not be so unrecognizable.

Lapp's plans did have much in common with those of another atomic scientist, Norbert Wiener, featured in a famous issue of *Life Magazine* (1950). It contained a feature article entitled, "How U.S. cities can prepare for atomic war: MIT professors suggest a bold plan to prevent panic and limit destruction." Norbert Wiener, (who had recently gained fame as the inventor of Cybernetics), along with a history professor and a city planning professor

(who is not identified), had collaborated on a scheme for the urban form which would focus on transportation and communication needs. Their city radiates with expressways that are intersected ten miles out by a city-circling freeway, which would be called a "life belt". Here, survivors of an attack could flee to tent cities, hospitals, fuel storage depots and campsites. Wiener and his partners also include elaborate plans for protecting railways – which were, in their view, vital for moving medical supplies and troops. Ironically, the very superhighways they also proposed would become reality soon enough, and start the railroads on their long decline. This plan, with its circular freeways and rail-line, is—like Augur's—much like Howard's conceptual Garden City, in that it was to be laid out in concentric rings, surrounded by "the circle railway, which encompasses the whole town" (Howard 1996, 352). It is interesting to note that Wiener's extraordinary vision of a city ringed with successive freeways and rail lines eerily resembles a diagram of the concentric range of nuclear blast effects superimposed on a city map, an image that occurred with regularity during this period. Through this *Life* article, a very wide audience indeed was introduced to the concept of nuclear-inspired changes to the urban form.

That same year, the President of the Regional Plan Association of New York, Paul Windels, published a call for Federal action on dispersal called "How shall our cities grow?" (Windels 1950). Like Augur and others, Windels deplored the congestion of current cities and argued for lower density redevelopment and broad highways in central areas. Unlike Lapp, he eschews proposals for ribbon or vertical cities (*ibid*, 365-366). In order to bring this decentralization to fruition, Windels called for a strengthening of informed citizen initiative (a common plea in civil defence literature); more funding of urban research into population distribution; and action at the state and federal levels to guide urban policies (*ibid*, 366-367). In a remarkable statement indicating the extent to which planning and military imperatives

had become synonymous, Windels opines that

> [t]here is no conflict between long-range defense policies as related to cities, and the desirable peace-time objectives of city planning. The two move in the same direction. Policies urged by planners which were once the subjects of ridicule by alleged hard-boiled realists have unexpectedly become the essential of military defense of cities. Thus the once-scorned green belts between communities and neighborhoods are now respectfully referred to as firebreaks. Zoning controls and avoidance of congestion are publicly urged by military experts (*ibid*, 368).

Windel's conclusion hearkens back to the modernist utopian visions referred to in Chapter 3; that following the course proposed would result someday—perhaps past the lifetimes of his readers—in towns and cities "infinitely better than anything we have seen yet" (*ibid.*, 370).

Like Tracy Augur, Detroit planner Donald Monson also contributed a great deal to the project of dispersal. In the two-part article "How can we disperse our large cities?" (co-written with his wife, economist Astrid Monson), the authors take Augur's views one step further. In addition to the construction of satellite towns, the Monsons advocate the gradual breaking up of the "existing masses of our great cities" (Monson 1950, 90). They shared with Augur the belief that the satellite system would make a more difficult target at which to aim, and a bomb that missed one of these urban centers by a few miles would land "relatively harmlessly in the open countryside, evaporating more cows than people" (*ibid.*). The five-point dispersal program they proposed included directing new war industries to these small centers, accelerating the construction of "broad express highways through our great cities" and a "drastic reduction of the population density of the central portion of these cities through control of all rebuilding" (*ibid.*, 91).

The matter of expressways received much attention from the Monsons, as then-current plans were deemed insufficient. The strips of land bordering the highways were, in their opinion, too narrow and ought instead to be 300 feet wide on either side to act as a

firebreak and to provide a place to bulldoze debris so that traffic could continue after an attack (*ibid.*, 107). The added benefit of cutting large swaths of freeways through the hearts of cities would be to "greatly increase our present slum-clearance and relocation programs" (*ibid.*). Once the construction of satellites was well underway, and freeways driven through the metropolitan areas, work could then commence on widening the right-of-ways of these expressways, and relocating former residents. The long-term view was to convert the central mass to a "number of more or less self-contained communities with populations of 50,000 to 100,000 each, separated one from another by broad belts of open space" (*ibid.*). (The Monsons would estimate in a later article that the open space between these units devoted to expressways should be up to a mile in width [Monson 1951b, 249]).

The Monsons referred to the social benefits of the large city (symphonies, universities, a rich cultural and economic life [Monson 1950, 91-2]) yet saw no conflict with the premise that such a city should have its heart shattered – and scattered – by great tracts of open land riven with expressways. That this cultural life, and, indeed, the metropolitan area's identity as a city, would cease once residents, regardless of their social networks and attachments to neighborhoods, were relocated *en masse* to satellite towns, never seemed to occur to the authors. They were equally oblivious to the fact that the satellites they proposed, in being delegated the distinction of housing the new, vital war industries, would consequently become more attractive targets than the cities they were meant to replace.

The safety of those vital war industries would become the focus of a manifesto written by the Regional Development Council of America, the members of which included renowned planners Clarence Stein, Benton MacKaye, Lewis Mumford, Catherine Bauer, Hugh Pomeroy and Albert Mayer. Their manifesto echoed Wiener in proposing belts around cities for hospitals and other facilities, but also criticized the general civil defence program

for lulling Americans into thinking that safety could be maintained in congested cities as long

as there were fallout shelters. By embarking on a program of dispersal, "we should be able

within three years to save from even the threat of bombing almost ten million lives"—an

extraordinary claim indeed, premised on building a million homes per year in "hundreds of

low-density towns" (Stein *et al*, 1951, 306-307). To implement such a program, federal

leadership, preferably in the form of a dedicated Defense Communities Agency, would be

required; this agency would oversee the strategic decentralization of essential industries into

communities so as to be walking distance from workers' homes (a "sustainable" concept

Clarence Stein would also propose for a dispersed Washington D.C.; see above **Chapter**

1.10). An even more remarkable design notion was that homes in these communities should

not be built according to minimum space requirements, but be built extra large so that each

family could in the event of an attack accommodate evacuees from bombed areas (*ibid*, 309).

Like Windels (1950) and so many dispersal authors, Stein, Mumford and the others could

not resist a closing homily regarding the salvation the bomb's threat will reveal:

> By treating this emergency as an opportunity for bringing into existence sounder
> practices in urban building, the curse and the danger of a war-ridden age may be
> turned into an ultimate blessing. For once the necessities of the present coincide with
> the best hopes for the future (*ibid*, 309). (For a further exploration of this theme, see
> **Chapter 7.2.4**).

In September, 1951 a special issue of *Progressive Architecture* debated the pros and cons

of architecture for civil defence. Donald Monson, who contributed to the issue, took up the

same arguments as before, but added that contemporary urban renewal plans should be put

on hold on account of civil defence objectives. Urban core redevelopment, he wrote, should

be undertaken last – after satellite construction and inner-core breakup, the latter being

accomplished by carving wide expressways through the urban mass and gradually widening

these firebreaks and moving residents out to the new satellite communities. The slum

clearance legislation of Title I of the Housing Act of 1949 was, in his opinion, insufficient to accomplish this break-up (Monson 1951a, 73).

Eugene Klaber, a redevelopment consultant from Philadelphia argued against Monson, averring that there can be no rational planning based on assumptions of atomic war. He also pointed out the illogic of building new towns for defence that will only become targets themselves. In chastising those who argued that cities were outmoded anyways he offered a starkly opposite position than had Tracy Augur. Most significantly, though, is Klaber's opinion that many planners were citing the defence angle as a "political expedient in order to get something done at a time when few will listen to any proposal that is not labeled defense" (Klaber 1951, 73).

In the same issue, Clarence Stein (author of the recent *Toward New Towns for America)* would argue strongly in favour of new towns for defence ("there is no alternate" [Stein 1951, 77]), so strongly in fact that the idea of "satellite" towns was quite unthinkable:

> The Metropolis, as we know it, is doomed. The monstrous cities, at the same time that they are expanding, are disintegrating. This is indicated by the continuous flight from the congested centres of all who can afford to escape—people, industries, and commerce...satellite towns are an inadequate solution...they still depend on the old metropolis...subsidiaries of the old decaying center (Stein 1951, 78).

Stein was arguing here for a Regional City (which he had originally proposed in 1942), with no center, and connected to other towns by freeways (*ibid,* 79-80).

British planner Jaqueline Tyrwhitt, meanwhile, argued against Stein and the satellite/New Town concept on largely social grounds. Tyrwhitt wrote that such towns would be unable to maintain "sufficient diversity of opportunity" to fulfill the human need for self-actualization (Tyrwhitt 1951, 77). In her opinion, the only way such a constellation of communities could thrive would be if there were a vital central metropolis at their core.

Other contributors to this issue included Dr. Lapp, who, after five years of devoting his attention to the problem of non-military defences, presented a more conservative, but "callous" solution—selective dispersal. According to Lapp, only those factories and workers vital to war production should be dispersed, and no new vital industrial construction should take place within a 20-mile range of cities—a distance recommended by the NSRB and other federal agencies, and included as an assumption in Clarence Stein's proposals for Washington D.C. (referred to in **Chapter 1.10** [Parsons 1989]) (Lapp 1951, 75-6). The callousness of the proposal lay in Lapp's willingness to leave the majority of people behind in large cities, and only removing those "essential to a war economy" (*ibid.*, 76).

Housing economist Charles Abrams would refute Lapp's proposal point by point, concluding with an appraisal of the extent of the sacrifices needed to implement dispersal plans: dispersal would be a "vast social, political and psychological problem [requiring] the breaking of home, community, work, and family ties" (Abrams 1951, 75).

Albert Mayer's contribution to the *Progressive Architecture* issue was a call for the architecture profession to be "catalyst and advocate", to take a "determined corporate interest" in favour of decentralizing cities, and for the individual architect to do the same. In the end, though, the editors of the magazine offered their own position: that

> the attempts to use "defense" and the fear of the bomb as arguments for or against urban redevelopment or new towns leave us cold and rather shocked....We feel that the advocates of dispersion and new towns begin to lose some of the strength of their arguments when...they tie them to Civil Defense (Creighton 1951, 80).

Here we see several interesting currents: the link between dispersal theories and contemporary urban renewal plans; the rare argument that the social implications of the dispersal advocates' plans ran counter to the traditions of good city-building; and that the principal focus of these efforts should be on vital industries. What is even more telling is Klaber's belief that many planners were promoting dispersal plans not because they

genuinely believed in their utility against attack, but because such plans fit the political tenor of the times, they were more likely to be approved.

September 1951 also saw an entire issue of *The Bulletin the of Atomic Scientists* devoted to the topic of urban and industrial dispersal; contributors included Donald and Astrid Monson, Ralph Lapp, and Harvard University Regional Planning Chairman William L.C. Wheaton. This issue also reprinted President Truman's "Statement of Policy on Industrial Dispersal" (President Truman 1951), as well as the National Security Resources Board pamphlet, "Is your plant a target?" (See **Chapter 5.3**). The editors of the issue began by stressing again that they advocated dispersal as a way to win a future war, and deplored the lack of any substantive steps in that direction—chiefly the rejection by Congress of both Truman's plan to disperse Washington D.C. (Described in Parsons [1989]) as well as the proposed amendment to the Defense Production Act (see **Chapter 6.4**). "Apathy, skepticism or outright opposition to all radical civil defence measures still prevails in Congress and the public mind", and Truman's Industrial Dispersal Policy was only a "tepid" response (Rabinowitch 1951, 243). There is, though, an interesting new justification proposed—dispersal could help avoid war as well as repressive domestic policies:

> By reducing the fear of an atomic attack, both in new, dispersed communities and in old urban centers deprived of their present concentration of attractive targets, dispersal may permit the government to dispense with the many restrictions of freedoms and civil rights which will become unavoidable if present industrial citadels are permitted to survive and grow. Garrison-state mentality, with inevitable excesses from ill-advised guardians of public security, could be expected to subside, international atmosphere could become less heavy with fear, and more conducive to peaceful alternatives to war or arms races (Rabinowitch 1951, 242).

Of interest here is that the threat of repression from their own government looms almost as large as that of war itself. In 1951, though, it would seem that contemporary advocates were frustrated that dispersal was meeting resistance from many quarters.

Until November 1952, the work of dispersal theorists was predicated on estimates of the destructive power of "nominal" 20-kiloton bombs, the type used on Nagasaki. This all changed with the successful test detonation of "Mike I", the first hydrogen bomb (Rhodes 1986, 777). Now the effects that could be expected – once the U.S. inevitably lost its thermonuclear monopoly (which it did less than one year later [Miller, R 1986, 118]) – would need to be multiplied by thousands of times.

This dramatic increase in destructive potential was not reflected in discussions relating to industrial dispersal in the massive 1953 *Urban Redevelopment Study*. In Volume II, *The Future of Cities and Urban Redevelopment*, editor Coleman Woodbury (who had recently participated in *Project East River* (see **Chapter 5**) contributed a chapter entitled "Security considerations in industrial dispersal". Woodbury considered the state of non-military defence and concluded that industrial dispersal was being neglected by policy-makers. After summarizing the efforts and major publications that had treated this topic to date (which are themselves discussed elsewhere in this Chapter and in **Chapter 5**), he concurred with other dispersal advocates that more efforts and studies were needed, and that the need to disperse industries for defensive purposes was a real and urgent one (Woodbury 1953).

MIT planning professor Burnham Kelly delivered a presentation at the 1952 Conference on "Building in the Atomic Age". In addition to some classic examples of modernist assumptions ("everyone is in favor of safe and fast highways" [Kelly 1953, 21]) and a reiteration of the standard arguments for dispersal, Kelly acknowledges that planners cannot dissolve cities, nor can they transform the city from a target to no target (*ibid.*, 22).

In spite of a growing awareness among many that the hydrogen bomb was presenting too great a challenge with which conventional plans could cope, the defensive dispersal movement continued, and throughout the decade the American planning

profession would remain dedicated to the problem of civil defence, often in close association with the federal government. As the decade closed, however, Walter Thabit would challenge this allegiance with his 1959 article, "Planning and civil defense" in which he urged his colleagues to consider that the sheer destructiveness of thermonuclear weapons had put the protection of cities beyond the competence of their profession. He reported that planners were now being asked to participate in the fallout shelter program, which was "being pushed as strongly as was dispersion" (Thabit 1959, 36) but cautioned his colleagues that the promises of this program were specious. He also described what other minds (such as planner Oscar Sutermeister's) were proposing for the latest ideas in dispersal for a thermonuclear era (namely distributing the urban population over thousands of square miles, and building underwater or underground cities [Thabit 1959, 37-38]). In his conclusion, Thabit exhorts the profession to "prepare a policy statement pointing out the impossibility of adequate civil defense preparations…and the necessity for positive political action to prevent this destruction." (*ibid.*, 39).

Despite Thabit's break with the status quo, other planners would continue to support defensive dispersal into the 1960s. In "Can we plan for the atomic age?" author Philip Clayton lamented the lack of progress made in altering the urban form to reduce vulnerability. Clayton spends some time advocating the traditional "satellite town" concept (Clayton 1960, 116), but appears more concerned with criticizing the half-hearted progress towards urban dispersal.

> Streams of motorists ride tail-finned automobiles past city limits to execute a sort of dispersal, albeit a rather ineffective sort…the Housing and Home Finance Agency was charged by the Housing Act of 1954 with 'facilitating progress in the reduction of vulnerability of congested areas to enemy attack'…[and] the Office of Area Development of the Department of Commerce as part of its plant-location service [has been attempting to induce industrial dispersal] (*ibid.*, 115).

In Clayton's report, we discover theory becoming practice: agencies promoting industrial dispersal and low-density suburban housing, as well as the reality of the consumer-driven flight from the city. Clayton may regret that "satellite towns" have not been realized, but dispersal—planned and unplanned—was happening.

From Thabit, however, we learn that the policies of dispersal can be carried to an extreme. By 1960, when technological advances had superceded all efforts to outrun them, even the most tenuous links with the traditions of city-building were being abandoned. Hence, the city was to be dissolved, put underwater or underground. The following year, Lewis Mumford, cognizant of what such fantasies would portend, wrote,

> [Those] in the underground city...are the prey of compulsive fears and corrupt fantasies and extermination; and *the more they devote themselves to adapting their urban environment to this possibility, the more surely they will bring on unrestricted collective genocide*...the underground city threatens in consequence to become the ultimate burial crypt of our incinerated civilization (Mumford 1961, 481) [emphasis added]

While such extreme visions and their attendant consequences were, of course, to remain unrealized, the evidence below will demonstrate that this insight of Mumford's might be applied with some utility to the actual postwar American city, in that the movement to adapt the urban environment to the atomic age may have had consequences quite unforeseen by its advocates.

Chapter 5.0

Planners and Policy-Making

5.1   Introduction

The articles reviewed in **Chapter 4** were not simply opinion pieces; they were calls to action. Within a few years of the first appearance of this literature, some of the individuals contributing to it were to become involved in efforts to carry these ideas into policy.

In this chapter the adoption of dispersal principles by the American Institute of Planners is reviewed, as is *Project East River* and some of the dispersal-related policies that would emerge in the 1950s.

5.2   The American Institute of Planners and the National Security Resources Board

With the arrival of the 1950s, the extent to which the planning of cities became considered to be a matter of national security is reflected in the increasingly important relationship that the American Institute of Planners (AIP) developed with the United States federal government, as a result of its close association with the National Security Resources Board (NSRB).

The NSRB was founded by the office of the Secretary of War (Hare 1994, 91n) and legislated by the National Security Act of 1947 (Funigiello 1990, 405). It was mandated with "the strategic relocation of industries, services, government, and economic activities, the continuous operation of which is essential to the Nation's security" (quoted in Lapp 1949, 166-167). It also functioned as a peacetime version of the War Production Board, overseeing the long-range planning of the economic and production aspects of national defence (Irvine 1949, 463). The chairman of the NSRB sat on President Truman's National Security Council (NSC official website); in this way, the dispersal movement in the American planning

profession had a direct line of communication with the highest office in the land. (The NSRB would, however, be abolished and have its functions merged with the Office of Defense Mobilization in 1953 [*Congress and the Nation 1945-1964*, 276]).

This relationship became particularly close in 1950, when the Board of Governors of the AIP requested that the Institute's President send a formal letter to the NSRB Chairman and the director of Selective Service, in which the AIP President

> offer[ed] the Institute's assistance to the end that professional planners' services may be effectively utilized 'in the best interests of the country in a time of national emergency...In planning for civil defense or civil disasters generally, as well as in times of specific military activity, the city planning commission's general and detailed maps, research data, and community information of many types are valuable to civil and military authorities for defense and for military purposes...As President of the American Institute of Planners, I have been directed by the Board of Governors to offer to the National Security Resources Board all the facilities of our Institute and its members.'" (Institute Affairs, fall 1950, 200)

Inasmuch as the NSRB's responsibilities centred on civil defence planning, the way in which this partnership would evolve would have a significant influence over subsequent urban policies.

AIP member Tracy Augur carried this partnership even further: by 1951, he was actually working for the NSRB as its urban specialist (Funigiello 1990, 411) just as the agency embarked on two important initiatives, President Truman's Industrial Dispersal Policy; and the top-secret civil defence study, *Project East River*, in which he would play an important role.

5.3   The Industrial Dispersal Policy

In the summer of 1951 the Joint Committee on the Economic Report, a Congressional committee, issued a report entitled *The Need for Industrial Dispersal*. This was a position paper that also summarized what programs were then available to stimulate industrial expansion, and how these might be married to dispersal goals.

The Committee begins the report by stating that,

[s]ince there is no known defense against the atomic bomb except space, dispersion is one of the first considerations for strategic safety of industrial facilities...business in expanding to meet defense production needs must look to areas which are not now developed industrially (JCER 1951, 1).

There were three forms of inducement identified in the report: accelerated tax amortization, federal aid in the form of military procurements, and direct loans as provided under the Defense Production Act (ibid, 2). However, these inducements were presently contributing to further concentrations of industrial capacity in already built up metropolitan areas (ibid, 4). The remedy was to analyze "areas of underdeveloped industrial resources" throughout the country, and to guide development to them (ibid, 5). The conclusion of the Committee was that the Defense Production Act (1950) be amended in the following way:

No construction or expansion of plants, factories or other facilities shall be undertaken...unless the President shall have determined that the proposed location of such construction...is consistent, insofar as practicable, with a sound policy of...dispersing productive capacity for purposes of national security...In making [this] determination, the President shall give consideration to counties,...which...are relatively less vulnerable to enemy attack by reason of geographic location, or the absence of heavy concentrations of population or vital defense industry (JCER 1951, 56).

On July 11th 1951 this revision was introduced in Congress but quickly defeated 134-79 after a debate influenced by determined opposition from chambers of commerce in highly industrialized states (Woodbury 1953, 196).

On August 11th, 1951, President Truman issued an Executive Order that the National Security Resources Board would be overseeing a policy of Industrial Dispersal (President Truman 1951, 263). This policy would be directed at first towards "new and expanded" industries (Gorrie 1951a, 263) involved in defence, with a long-term objective of carrying out a "natural industrial expansion away from congested centers. This movement has been under way for a number of years. A speed-up of this natural expansion is an urgent

security measure." (Gorrie 1951b, 264). Accompanying this new policy was the nationally distributed NSRB pamphlet *Is Your Plant a Target?* which outlined the principles of the new policy: that it was designed to disperse new and expanding industry, not to move existing ones; that no region of the country was to be built up at the expense of another; that dispersion should be confined to market areas; and that state and local governments would need to take the initiative—the federal government would only play and advisory and technical role (*PER lib*, 6).

Seventeen months later, in "Is Your city a target? – a report on industrial dispersion today", C. Benson Wigton would report that the NSRB had directed the creation of local dispersion committees in at least 80 municipalities. The committees were to submit reports on their communities' dispersal plans to the Defense Production Administration before their industries would receive tax breaks and defence contracts (Wigton 1953, 159). Major defence contractors were quick to respond: in October of 1952, Westinghouse declared that their industrial location decisions were now being influenced by "the need to spread out defense plants for security reasons" (Walker 1957, 19).

In spite of anecdotal evidence in the literature, some official evaluations were less enthusiastic. In 1955, the Commission on Intergovernmental Relations would report that "the accomplishments under the industrial dispersal policy have not been significant...Little has been done with respect to the reduction of population density aside from the development of broad policy" (quoted in Clayton 1960, 111).

5.4   Project East River

Project "East River", (so named because of its central hypothetical scenario—New York City attacked with a bomb detonated in the East River), commenced in November of 1951 with the (excruciatingly modernist) premise that "there is no man-made problem which the ingenuity of man cannot solve" (Norton 1953, 89).

The project involved the assistance of ten AIP members: Coleman Woodbury (editor of the massive and then-recently published *Urban Redevelopment Study*), NSRB staff member Tracy Augur, Dean K. Boorman, Donald J. Irving, C. McKim Norton (Executive Vice President of the Regional Plan Association of New York), Maurice F. Parkins of the University of North Carolina, Oscar Sutermeister (who was to produce a dispersal plan for Milwaukee (referred to in Bosworth [1997]), MIT planning professor Burnham Kelly and Harvard University planning professors William L.C. Wheaton and Charles Dyer Norton. The Project was coordinated by three different federal agencies: the NSRB, the Department of Defense, and the Federal Civil Defense Administration. Seventy-four atomic and social scientists, businessmen, and government experts worked on the ten volumes of the report. The AIP members had spent months urging the Project leaders to include urban vulnerability reduction into their study, and based on this initiative were able to produce what was to become Volume V, *Reduction of Urban Vulnerability* (PER *V*). Volume II-B *Federal Leadership to Reduce Urban Vulnerability* (issued as an interim report) was devoted entirely to what the federal government could do to lead the way to reduce urban vulnerability (*PER IIb*). The last of the 10 volumes was completed by August of 1952, and the results were released in January of 1953 (Norton 1953a, 87).

The Report claimed that, employing such new standards as were being recommended "may reduce casualties by as much as 75 per cent, in the event of an attack"

and that "to double distance from an A-bomb more than doubles chances of survival" (*PER IIb*, 3). The dual goals of the Report were to encourage a "multiplicity of less-concentrated targets...[and] open up the centers of the largest targets, reducing their concentration, and provide open space and better access for faster rehabilitation after attack" (*ibid*, 4).

Citing the inadequacy of the Industrial Dispersal Policy, the Report noted that the authorities responsible (the National Production Authority, the Reconstruction Finance Corporation and the Department of Defense) had been reluctant to interfere with their own production requirements in order to carry out adequate dispersal initiatives (*ibid*, 7), and so urged the federal government to also provide guidance for the location of non-defence industries as well (*ibid*, 6).

Among the recommendations:

- Further development of industry should be slowed down in central city areas of highest population density and industrial areas of target attractiveness
- A beginning should be made in reducing population and building densities in residential areas of greatest vulnerability.
- New defence plants should be located at a reasonably safe distance from existing target areas (10 miles minimum)
- No urban areas should be developed so intensively as to create new population or industrial prime target areas (*ibid*, 9).

The Report reached these conclusions based on a model in which urban areas are classified into two different types of "Vulnerable Urban Districts." Class I Vulnerable Urban Districts would be highly industrial and densely populated (i.e., a residential or daytime population of 200,00 persons within a 4-mile diameter circle). A Class II Vulnerable Urban District would be less intensely developed and contain daytime population of 100,000 persons (*ibid*, 10). Within Class I districts, the Report recommended that "the Federal Government should not build or finance the building of any residential commercial or non-defense industrial structures except on a replacement basis effecting a 20% reduction in

density of population...and a 20% reduction of floor area ratio..." (*ibid.*, 12). The Report

noted that "[t]his rate of density is not much more than is currently being realized in urban

redevelopment projects under the Federal urban redevelopment and slum clearance

programs" (*ibid.*, 19).

In Class II areas "no new or residential construction should take place...at a higher

density than 5000 square feet of lot area"; otherwise, a 20% reduction in a redeveloped area

was also recommended (*ibid.*, 14). Within residential areas, "federal aid [in the form of FHA

insured mortgage commitments, etc.] should be available only for residential building

providing a minimum of 5,000 square feet of lot area per family" (*ibid.*, 19); in this, too, the

Report reminded the government that 98% of all new homes constructed in subdivisions

were on lots at least 50 feet wide, so these guidelines would "not effect the great bulk of

single family residential development" (*ibid.*).

Furthermore, the Report would call on the federal government to place a priority on

funding freeways and slum clearance. Federal aid should be directed towards

> circumferential expressways in metropolitan areas to open up new locations for
> dispersed development and as emergency bypasses of congested centers in time of
> attack...[s]uch expressways should be "at least 10 miles from the center of the city.
> Such expressways will not only act as important bypasses of congested sections
> through which traffic cannot be moved for some time after an attack, but will also
> tend to encourage the location of new industries and related development outside of
> central city areas (*ibid.*,35-36).

The Report paid particular attention to the dangerous situation posed by the densely

developed inner-city areas. One of the few illustrations in the second volume of the Report

shows the sort of city street that would today be considered charming, (and quite similar to

Winnipeg's famous Exchange District) but is condemned in the Report as a "TYPICAL

FIRE STORM AREA" (*ibid.*, 35). Such areas should be "given a high priority through public

housing and urban redevelopment projects" (*ibid.*, 36).

It concluded "If the standards recommended in this report are established, urban vulnerability can be reduced (1) by checking further central city growth (2) by encouraging the emerging trends towards deconcentrated (more wide-spread) metropolitan growth...the task is to *accelerate desirable contemporary trends toward...low density development already manifest in metropolitan growth and development.*" [Emphasis added] (*ibid.*, 3).

To carry out much of these goals, the authors of the Report reminded the government that

> [t]he Housing and Home Finance Agency is probably the Federal agency that has the greatest influence on the development of urban areas...[s]ince the great bulk of the commitments of the Federal Housing Administration are for construction outside of the most densely populated sections, the urban defense standards should not reduce unduly the volume of this necessary financing (*ibid.*, 32).

5.5   The AIP Endorses Project East River

The American Institute of Planners Committee on Land Policy (which included Tracy Augur) adopted a policy statement in 1950 urging the decentralization of American cities. Most of this statement concerned the need to improve efficiencies and reduce congestion, but it did refer in the first paragraph to the present vulnerability of cities to weapons of mass destruction (AIP Committee on Land Policy 1950).

Three years later, with the recommendations of *Project East River* openly discussed in the planning literature, the AIP at the annual general meeting in San Francisco in June, 1953, adopted a statement called "Defense Considerations in City Planning". The adoption of this statement was based on recommendations from a report by a committee of the same name that was chaired by "East River" participant Tracy Augur. This statement included the following excerpts which are important enough to quote at length:

> Defense considerations have become primary considerations in American city planning. The United States is an urban nation...to the extent that [cities] are

vulnerable to enemy attack, the nation is vulnerable. The emergence of nuclear weapons vastly more destructive than any hitherto developed makes necessary a complete reassessment of the forms that cities must take to continue their vital role in our national life. The old rules are no longer valid.

It is a prime responsibility of the science of city planning, working with other technologies concerned with urban development and national defense, to define that form of [relatively invulnerable urban] organization and to develop the procedures by which it may be attained within the framework of American institutions.

[The statement goes on to endorse "Project East River", and urges the government to provide] strong and continuing leadership in this field and to recognize reduction of vulnerability as a prime consideration in all construction and development projects which it undertakes or for which it provides financial or other assistance...To be successful, such leadership must be exercised in a way that...there is a clear, consistent and authoritative national policy with respect to the location of industry...

The American Institute of Planners does not claim competence in military measures of national defense, but it holds this fact self-evident, that the best way to prevent attacks upon this country is to deprive potential enemies of targets that will make such attacks profitable to them. The grave danger that now confronts us stems from the fact that our productive strength is at present so distributed as to facilitate destruction...plain common sense dictates that it should be remedied with all possible dispatch. (American Institute of Planners, 1953, 268)

Official sanction was now complete. Urban policy-makers and those professionally dedicated to implementing those policies in the built environment had, by 1953, every justification necessary to approve of defensive alterations to American cities.

5.6   *East River* and After

Even as *Project East River* was being prepared, the American government was preparing multi-megaton thermonuclear weapons which rendered all of the report's findings—based as they were on 20-kiloton bombs—moot (Thabit 1959, 35).

Donald Monson would ask, Is dispersal obsolete? (Monson 1954), and answer, "no." The distances proposed for satellite towns simply needed to be extended further away from

the central cities, and a "break" in the ring of satellites downwind of the central city should be left open to allow fallout to disperse.

A committee that included Burnham Kelly was struck to update *Project East River* to account for the effect of multi-megaton weapons. It would conclude that the original study and its recommendations were still valid (Clayton 1960, 114).

In 1955, the National Planning Association's Special Committee on Non-Military Defense Planning would also report that the dispersal of essential industries was still, in a thermonuclear age, of paramount importance (*ibid*).

Chapter 6.0

Analysis: Defensive Dispersal in Postwar Urban Form

6.1   Introduction: *Fin de Siecle* List-making

In 1999, to mark the 50th anniversary of the passing of the landmark American

Housing Act of 1949, the Fannie Mae Foundation commissioned a survey of urban scholars,

asking them to rank the most important influences on America's cities over the past five

decades. Undertaken by Dr. Robert Fishman of Rutgers University, the study was

accomplished in two phases: first a focus group and then a survey. The focus group

consisted of urban scholars who offered their ideas for what should be included on such a

list, and this resulted in a preliminary list of 25 past influences, plus a list of 19 possible

future influences. This list was then mailed to members of the Society for American City and

Regional Planning History (SACRPH), "an interdisciplinary professional organization

composed of urban historians, social scientists, planning faculty, and working planners and

architects" (Fishman 1999, 1-2).

The survey participants were then asked to rank 10 items from the greatest to lowest

in importance. The final list, which formed the basis of Fishman's paper, "The American

Metropolis at Century's End: Past and Future Influences" (Fishman 1999), included the

following:

1.   The 1956 Interstate Highway Act and the dominance of the automobile
2.   Federal Housing Administration mortgage financing and subdivision
      regulation
3.   De-industrialization of central cities
4.   Urban renewal: downtown redevelopment and public housing projects
5.   Levittown
6.   Racial segregation and job discrimination in cities and suburbs
7.   Enclosed shopping malls
8.   Sunbelt-style sprawl

9. Air conditioning
10. Urban riots of the 1960s.

The conspicuous absence of the atomic bomb from a major historical list compiled by urban scholars of considerable reputation should come as little surprise, for the city planning and sociological literatures are, in fact, replete with explanations for the North American urban form that continue to engage the attention of scholars across several academic disciplines. In seeking explanations for the way in which North American urban society evolved so rapidly and completely in the 20th Century from one of relatively dense, almost European patterns to one of extreme low densities, scholars, planners, pundits, historians and interested laypersons have identified influences—some obvious, others more subtle. These influences are readily interpreted according to the paradigms discussed in **Chapter 2.**

In this chapter, we shall examine these causes in two ways: by reviewing six specific explanations for North American urban form, first in terms previously discussed in the literature, then in the context of the present study. In this objective, we are admonished to bear in mind Scott's (1998) anti-modernist caveat: that once you have found a lens that changes your vision, it is tempting to view everything through the same spectacles (Scott 1998, 7). As such, we will be mindful to note that there are limitations to the present interpretation.

One of these limitations is apparent in the choice of subjects. Most of what follows closely parallels the list by Fishman (1999). We shall, however, shorten the list of influences to be considered, as some of Fishman's factors (such as air conditioning, Levittown and enclosed shopping malls), while undeniably important, have little specific bearing on this thesis. The atomic bomb, then, cannot be said to have an all-encompassing influence.

The six specific causes that will be reviewed, then, are: subsidies for suburbia; the Interstate Highway System, deindustrialization of central cities, the rise of the Sunbelt, urban renewal and the Internet.

6.2 Subsidies for Suburbia

The rise of North American suburbia is often misunderstood as a strictly post-war phenomenon, whereas the trend to decentralized suburban housing in the U.S. may be observed as far back as the 1850s (Jackson 1985, 73). Suburban decentralization slowed somewhat during the Depression years, in spite of government efforts to stimulate housing sales. Nevertheless, it was during President Franklin Roosevelt's New Deal that one of the most important federal interventions was created, in the form of Federal Housing Administration-insured mortgages.

FHA insurance was implemented in 1934 when the U.S. government recognized that then-current mortgage policies (which required down payments of up to 50% and terms as short as 5 years) had resulted in massive numbers of defaults (Fishman 1999, 4). By insuring long-term, low-interest mortgages—most of which were in the suburbs—the FHA had an enormous impact on the shaping of America's cities through the stimulation of housing sales. Even before World War II, then, the trend towards low-density suburban development was well underway, and it was felt by many that "the forces of dispersion...cannot be resisted. We must try to work along side them instead of against them" (quoted in Gelfand 1975, 134-5).

During World War II, defence had overwhelmed all other needs, housing among them. Real estate developers strenuously fought government-funded construction of housing for defence workers and, although almost a million people were living in this type of

housing, the real estate lobby did not want defence housing to be made permanent (Jackson 1985, 232). The result was that by the war's end there was a severe housing shortage, and almost 6 million families were unable to obtain housing. (Palen 1995, 57). When the war ended, the postwar construction boom was spurred not only by FHA-insured loans, but by Veterans Administration loans, which guaranteed low interest rates with no money down and twenty five or thirty year repayment schedules (*ibid.*, 59).

The influence of FHA insurance was geographically and racially particular: after World War II the FHA refused to insure all but white-owned homes on the suburban fringe. Inner-city homeowners and Afro-Americans had to rely on the traditional short-term mortgages with enormous down payments—a policy which persisted until 1965, resulting in profound spatial and racial segregation (Fishman 1999, 4). In addition, GI loans did not cover apartments, and no town houses were being built (Palen, 1995, 61).

In neo-classical and ecological analysis, the apparent consumer preference for suburban living is viewed strictly as a manifestation of "demand-side" economics. Institutional constraint, Marxist, and critical theorists point out that state and corporate interests have been largely responsible for ensuring that consumers, in fact, have had few real alternatives to suburban homeownership (Checkoway 1983; Gelfand 1975). Through the application of preferential lending rates, tax incentives and subsidies, suburban homes have long been comparatively less expensive than central-city dwellings in most urban housing markets. When coupled with the countless repercussions of the policies that neglected inner cities and led to racial and class segregation, suburban districts have, naturally, been viewed as safer, cleaner and far more desirable locations in which to raise children.

In the early atomic age, suburbia was seen as safer for another reason. Donald and Astrid Monson reported in one of their dispersal articles a fascinating piece of evidence documenting consumer demand for suburbia and exurbia as a result of nuclear fear,

> ...the possibility of atomic attack [has] ceased to seem remote to the general public. Land speculators were quick to sense this fear and have exploited it effectively. Around the periphery of many of our large cities sales of vacant land are booming, with more or less open references to the fact that here there will be safety in case of war. Slogans were coined and may be found in the newspaper want-ads, "beyond the radiation zone," "outside the fifty-mile limit," "buy now for security later." The desire to escape the dangers of atomic bombings, however unintelligently it may be expressed in the buying of vacant lots in the middle of a prairie, is a force to be reckoned with. (Monson 1951c, 244)

Bosworth (1997) also notes how the mass media and civil defence planners, particularly during the Korean War, contributed to this portrayal of the city as a place of danger, and that the real estate market responded with advertisements for suburban developments featuring headlines such as, "Country Properties for This Atomic Age," and "Protected Country Living." Bosworth contends that a combination of atomic fear and government subsidies favoring suburban living as a civil defence measure contributed to the accelerated growth of the suburbs in the early postwar years (Bosworth 1997).

These efforts appear to have been partially fulfilled through one of the most important pieces of urban policy legislation in American history, The Housing Act of 1954. The echoes of *Project East River* may be seen in at least two sections,

Section 811,

> The Housing and Home Finance Agency, including its constituent agencies...will facilitate progress in the reduction of the vulnerability of congested urban areas to enemy attack.
> (H.R. 7839, 83rd Cong., § 811 (1954), reprinted in 1954 U.S.C.C.A.N., 745).

Section 910, Reduction of vulnerability to enemy attack,

> This section would provide that all housing functions and programs of the Federal Government shall be carried out, consistent with the requirements of

the functions and programs, in a manner that will facilitate progress in the reduction of vulnerability of congested urban areas to enemy attack. (H.R. 7839, 83ʳᵈ Cong., § 910 (1954), reprinted in 1954 U.S.C.C.A.N., 2821).

While the act does not define what "reduction of vulnerability" means, the only working definition the government had at this point was that of *East River*: encourage low-density development on the periphery and thin out the inner cities.

6.3   The Interstate Highway System

Postwar suburban construction was greatly abetted by infrastructure designed to serve the private automobile. There is, on the surface, little to debate when considering the influence of the automobile on urban society. Whether viewed as a boon to civilization (Dunn 1998) or as irredeemably detrimental (Kay, 1997), it has undeniably transformed our communities and our cities, influenced where we live, work and shop, and impacted in countless ways the global economy and the physical environment. It is, obviously, a leading factor cited in ecological analysis.

Yet, as critical (new urban paradigm) authors suggest, no technology is value-neutral. The transformation from a predominately urban society to a suburban one addicted to boundless automobility was not inevitable, but was made possible by massive federal subsidies and intervention (Lewis 1997) and the unrepentant abuse of corporate power (for recent examples, see Alvord [2000] and Kay [1997]).

There are, and have been since the beginning of the automotive era, high levels of government subsidies for the automobile-based transportation system, and the automobile corporations themselves are extremely powerful and deeply integrated into the entire economy. It is hardly a coincidence that the automobile and the suburb should be so closely connected; these two industries constitute a tremendous portion of the American and the

Canadian economies. The construction and real estate industry has become the largest

industry in both the US and Canada (Fowler 1992, 140); while Kay reports that

> a fifth of the U.S. gross domestic product (GDP) is dependent on the auto industry, while the Big Three—General Motors, Chrysler and Ford—employ 2.3 million Americans in more than four thousand manufacturing facilities and eighteen thousand dealerships. One out of every six U.S. workers makes a living in an auto-related industry (Kay 1997, 123).

It is well-known that the success of the automobile eclipsed the trolley system all

across the continent. In this it had some assistance. In 1925, under the rubric of

"modernization", General Motors embarked on a strategy to buy up rail services, and then

sold these services GM-built buses. The ultimate goal was not, of course, about providing

bus service, but about—literally—driving the public away from mass transportation

altogether through the inevitably inferior service that the buses provided. They were

spectacularly successful, in spite of a later anti-trust suit that saw GM fined a mere $5,000

(Kay 1997, 213-214; Kunstler 1993, 91-92; Yago 1984, 57-65).

The progenitor for much of the road-building that would dominate North American

urban environments was Robert Moses, who, in a variety of roles and through independent,

quasi-governmental "authorities", did more between 1924 and 1968 to transform New York

City than anyone else. In addition to his leadership in urban renewal projects (which

displaced tens of thousands of [mostly poor] people), Moses oversaw the construction of six

expressways and, in the process, dispossessed 250,000 more people from their homes. As an

evictor of citizens he was so successful that when it came time for other cities to construct

their Interstate Highways, officials came to Moses to learn how to displace their own

residents (Caro 1974, 1-21).

In spite of never having learned to drive, Moses displayed utter contempt for mass

transit, made famously evident in his early Long Island parkways, which featured overpasses

too low for buses to travel beneath (Kuntsler 1993, 99). Because his efforts were so widely imitated, Lewis Mumford was to note that "[i]n the twentieth century, the influence of Robert Moses on the cities of America was greater than that of any other person" (Caro 1974, 12).

As Moses' history shows, the dominance of the automobile was owed at least in part to politics. During World War II, automobile corporations became major war contractors, and General Motors alone received 8% of all federal contracts, perhaps due to the fact that GM's then-President, William Knudsen, was named in 1940 as Commissioner for Industrial Production of the National Defense Commission, and was also one of the Directors of the War Production Board (Flink 1975, 110; Kay 1997, 224; Kunstler 1993, 103).

In 1942, an informal and secretive highway transportation interest group (later known as the "Road Gang") began meeting weekly to discuss the promotion of postwar highway building. Among its 240 members were automobile executives and dealers, automobile clubs, oil executives, Teamsters, highway engineers and administrators (Flink 1988, 371). After the war, President Dwight Eisenhower's Advisory Committee on a National Highway Program was chaired by Lucius Clay, a member of GM's board of directors; and it was Clay who then hand-picked GM's then-President Charles Wilson to be Secretary of Defense (Lewis 1997, 105-107). The "Road Gang" would consequently find President Eisenhower receptive to their ideas.

In 1956, the $25 billion Federal Aid Highway Act authorized the construction of the vast "Interstate and Defense" Highway system—the largest civilian construction project in history. The system would connect cities and provide cross-country travel without traffic lights, and was to be funded on a 90-10 split between the federal and state governments. (Kay 1997, 231-233; Lewis 1997, 122; Flink 1988, 371-373). Canada's Trans-Canada

Highway pales against the scope and intricacy of the American interstates, which took 40 years to complete and used enough concrete to stretch a "wide sidewalk...to a point in space five times beyond the distance to the moon" (Lewis 1997, xi, ix).

Developments resulting from the construction of the Interstates would come to play major roles in the sprawling of the American city. The freeways pulled businesses and residents out of the inner cities, creating a new impetus for suburbanization and the genesis of edge cities. These consequences were, as we have seen in **Chapter 5**, openly described and advocated in *Project East River*.

Yet, the Interstate Highways had been promoted as a defensive measure several years before *East River* in another report issued to President Truman by the Commissioner of Public Roads, the state highway departments, the Secretary of Defense and the NSRB. The report, called *The Highway Needs of National Defense* , recommended that the urban sections of a national highways system would be of primary importance in wartime, should include circumferential routes around cities, and should support a minimum speed standard of 55 miles per hour (Hare 1994, 98).

Beltways, or circumferential routes around cities, and expressways going into the cities themselves, became the strongest means by which the Interstates could aid civil defence goals. Although both of these design features were being explored before World War II ended, in the intervening 11 years between the end of the war and the passage of the Federal Aid Highway Act (1956), these principles would be discussed repeatedly in the context of defensive dispersal.

While the majority of the intercity routes (totaling 37,700 miles) had been tentatively mapped out in 1944 (St. Clair 1986, 153), the Defense Department had been consulted in regarding the remaining 2,300 miles, which were sought as circumferential routes so that

(bombed) urban centers could be bypassed (Lewis 1997, 108). The automobile lobby, which

sought to connect cities to the interstates so that cities could be opened to more automobile

traffic, countered with the argument that radial links were needed to aid mass evacuations

(St. Clair 1986, 152-4). In September 1955, the final sections were designated and the 1944

routes reviewed: in the end, beltways, or circumferential routes around cities, and radial

expressways going into the cities themselves, were approved (*ibid.*, 155)—both having been

justified on defence grounds. The Federal Aid Highway Act was passed in 1956, and the

highways themselves were officially called "Interstate and Defense Highways". Kuntsler

(1993) also notes that

> the [Federal Aid Highway Act]also heavily subsidized the improvement (read,
> widening) of innumerable ordinary local roads to facilitate further suburban sprawl.
> The chief political justification was that the new expressways would ease the
> evacuation of cities during a nuclear attack (Kuntsler 1993, 107).

While waiting for the opportunity to use these highways for swift escapes from their

doomed communities, Americans could truly enjoy the "open road". The ramifications for

cities would manifest themselves ever afterward. As *East River* had foreseen, the freeways

were particularly important for facilitating the flight of industry.

6.4 Deindustrialization of Central Cities

In the postwar period, the rate of deindustrialization of manufacturing in central

cities rose dramatically over what it had been before the war. Between 1945 and the early

1970s, the diffusion of industry from central cities to suburban locations was three times the

pre-war rate (Dean 1973 quoted in Summers *et al.* 1976, 10). Urban histories that treat the

impact of this phenomenon generally present it as the result of economic and technological

trends. A typical example reads:

The city's factories fell victim to broad national forces affecting all urban industrial centers - economic expansion, changing patterns of corporate organization that accelerated the movement of capital, and spatial decentralization of economic activity (Adams *et al.*, 1991, 30-31).

Or simply, "post World War II economic restructuring moved factories out of cities onto more decentralized locations" (Spain 1993, para. 15). Like most of the factors under consideration in this work, deindustrialization had its roots well before World War II.

As industrialization advanced in the latter decades of the nineteenth century, an enormous surge in both construction and urban in-migration saw rates of fixed-capital development (in the form of factories and offices) that were so high as to exceed those in the twentieth century (Walker 1978, 185). Throughout the early period of North American urban industrialization, manufacturing clustered in central areas, but by the turn of the century and into the early decades of the twentieth century, these businesses began to move to outlying areas. From 1947 to 1963, employment in manufacturing in central cities declined from 66.9 to 48.2 percent (Dean 1973 quoted in Summers *et al.* 1976, 10).

Deindustrialization is explained by some as a result of the application of location theory, which, recalling Haig (1926) posits that the primary determinant for industrial location is overcoming the "friction of space", and that industries seek sites that minimize the costs of assembling products and delivering them to market. This requires adopting neo-classical assumptions centering around free markets and perfect information.

Traditional ecological explanations for this exodus include: the need for (and presence of) abundant and inexpensive suburban space for modern assembly lines in single-story structures, which made tall inner-city industrial plants obsolete; the impact of the truck, which provided industry with the flexibility to relocate outside the railway-dependent urban cores; and the vital workforce provided by a burgeoning suburban population (Fishman 1999, 4; Summers *et al.* 1976, 10).

Some, like Gordon (1984) and Gottdiener and Feagin (1988), opting for Marxist and new urban perspectives, discount these explanations, arguing that trucks were not widespread or effective enough until the late 1920s; trucking may have aided industrial dispersal, but did not cause it. Nor can decentralization of manufacturing be explained by saying that manufacturing industries were merely following workers, who were ostensibly living in the suburbs. Instead, it can be demonstrated that industrialists, unnerved by rising labour unrest, sought to undermine this threat by abandoning downtown areas. With unorganized workers isolated on the periphery and with fewer contacts with other factory workers, labour unrest, it was felt, would diminish (Gordon 1984, 41-42; Gottdiener and Feagin 1988, 177). As well, one cannot underestimate the importance of urban growth machines, whose ability to offer tax breaks and other regulatory concessions encourages the migration of industries and corporations (Molotch 1976).

As valid as these interpretations are, there are also civil defence imperatives for dispersing industry that should not be overlooked. In September of 1948, the National Security Resources Board issued a bulletin called *National Security Factors in Industrial Location*, which recommended that wherever possible industrial concentrations should be no larger that 5 square miles, or else housed in urban concentrations of no more than 50,000 people that are separated from other urban areas by ten miles of countryside (JCER 1951, 6).

As described in **Chapter 5**, President Harry Truman issued his own directive on the matter, the Statement of Policy on Industrial Dispersal. It was accompanied almost simultaneously by the release of the NSRB pamphlet *Is Your Plant a Target?*, which employed identical wording as had Truman (Woodbury 1953, 200). While Truman's statement would be heavily criticized by Congressmen as "one-man rule" and an usurpation of authority, i.e., Congress', it would also be criticized in an editorial of the newsletter of the American Society

of Planning Officials. The ASPO statement noted that federal permission for new construction totalling nine billion dollars had already been granted before the Statement was issued; there was no indication how this policy would be enforced at the national level and responsibility distributed at the local level; and there were a host of questions raised by the policy, especially where rural development was concerned. In conclusion, the ASPO recognized that the Order magnified the planning problems for cities, and called for ongoing planning on a metropolitan basis (ibid, 201-202).

This imperative as applied to military industries seems also to have resonated with other forms of manufacturing. A survey conducted within the first year after the Industrial Dispersal Policy was announced showed that 50% of industrialists would take security considerations into account when locating new facilities (Wigton 1953, 159). In the fall of 1953, Henry Parkman of the Office of Defense Mobilization reported that the

> Industrial dispersal policy...is receiving steadily increasing support from all elements of industry and from urban areas conscious of their target potentialities. Eighty-six metropolitan areas, including the major cities, have instituted industrial dispersion studies in response to the policy, and thirty seven of them have *developed approved plans* which provide one of the criteria for tax amortization assistance for new plants (Parkman 1953, 260 [emphasis added]).

The defensive imperative in industrial location became widely discussed; a third of the articles in Altmann and Moskowitz' 1951 bibliography on dispersal deal with it (Altmann and Moskowitz 1951). Even the management literature contributed to the discourse: a 1950 article urged executives to locate their new buildings "at least three miles from vital targets" (Ballinger 1950, 287). Douglas Greenwald's 1955 book *Industrial Migration* stated that "[i]ndustrial migration is going to continue relentlessly to change the industrial map of the U.S. The trend to decentralization inspired by the hydrogen bomb is only now beginning" (quoted in Walker 1957, 8). Architect Albert Mayer stated that "under the impact of war dangers, the pace [of industrial deconcentration] is accelerating" (Mayer 1951, 80). Recall,

too, how Clayton referred to the Office of Area Development of the Department of Commerce as having promoted defensive dispersal as part of its plant-location service (Clayton 1960, 115).

Despite the criticism leveled against it in the literature and in *Project East River*, a report issued at the end of Truman's term in office would judge the Industrial Dispersal Policy to have successfully encouraged the voluntary dispersal of defence related industry, and his Defense Mobilization Order No. 1, which was aimed at reducing urban vulnerability through the dispersal of industry, was still in effect into the mid-1980s (Hare 1994, 95).

6.5   Growth of the Sunbelt

"Never in the history of the world," notes Kirkpatrick Sale, "has a region of such size developed at such a rate for so long a time" (Sale 1975, 18). The region in question is the "Sunbelt", the exact boundaries of which are open to debate (some discussions exclude the southern states east of Texas); but we shall, following Finc (1993) refer to this region as those states south of a line drawn between North Carolina and southern California. The massive population and industrial expansion in these states has, since 1945, largely been at the expense of the traditional "industrial heartland" (or "frostbelt") of the U.S.—the mid- and northeastern states (Cadwallader 1991). An analysis of U.S. census data reveals that

> between 1950 and 1990 San Antonio experienced a 129 percent population increase, Austin 253 percent, Albuquerque 297 percent, Phoenix 819 percent, and Tucson 800 percent, while Boston, Baltimore, Philadelphia, Cleveland, and San Francisco lost population (Finc 1993, para. 9).

What has made the growth of Sunbelt states of particular concern to some planners and urban historians (such as those contributing to Fishman's 1999 survey and paper), is that the urban development that has occurred in Sunbelt cities is almost consistently

centerless, borderless agglomerations where massive housing developments, regional malls, industrial parks, office parks, and strip-development spread out in seemingly random order along the network of highways. Such areas are totally auto-dependent and as resistant to mass transit as they are to limits on growth (Fishman 1999, 7).

The resulting urban pattern characteristic of the Sunbelt is qualitatively distinct from those seen in older North American cities and in Europe, and features extremely low densities—so low that in Tucson, Arizona, high densities were at one point defined as anything over 1 housing unit per acre (Finc 1993, 322).

The reasons for this rapid and sprawling shift in people and industries are, in a general sense, often tied to those traditionally ascribed to deindustrialization in the "frostbelt": a decline in blue-collar manufacturing industries and the rise in service- and government- related organizations (Sale 1975, 19); or else the more "favourable business climate" of the Sunbelt in the form of lower wages, cheaper land and lower taxes (Watkins and Perry 1977, 39). Other factors cited by scholars for the extreme rates of Sunbelt growth are entrepreneurship (Angel 1977), local boosterism (Burd 1977) and annexation (Fleischmann 1977). That growth machines from different cities compete with one another is often tied to the threat of corporate migration. At the turn of the last century, when cities were still annexing suburban areas, powerful manufacturers would often abandon cities to avoid paying taxes, and then apply pressure on legislators to halt plans for annexation (Gordon 1984, 45). Whereas cities in the Sunbelt have been free to annex suburbs in order to increase their tax bases, older cities have been blocked by independent suburbs from doing so (Fowler 1992, 33-4). The result, as described by David Rusk in *Cities Without Suburbs* is that

> cities whose suburbs are mainly beyond the city limits have far more severe economic and social problems than cities that have been able to annex their suburbs or whose boundaries are so loosely drawn that most suburban development is still within the city (quoted in Barnett 1995, 223).

Gordon (1984) explains this dichotomy between the abilities of Sunbelt and "frostbelt" cities to annex suburbs as the result of corporate neutrality born of equal distribution. The corporations that migrated to the Sunbelt (many of which did so to avoid unionization [Bluestone and Harrison 1982, 164-170]) have facilities in both "central" and "outlying" areas (inasmuch as these terms have any meaning in cities with non-hierarchical spatial structures [Finc 1993, 323]), so also have no special interest in annexation one way or the other (Gordon 1984, 47).

These considerations aside, there is a specific economic factor cited by many observers that has contributed overwhelmingly to the phenomenal growth of the Sunbelt, and that is defence spending and procurements (Finc 1993, 322; Fowler 1992, 151; Markusen *et al* 1991; Parker and Feagin 1991; Sale 1975, 23-30). During the 1950s, most of America's high-tech industrial capacity—including aerospace and electronics—was relocated to regions isolated from the traditional industrialized areas, and—along with the New England states—the region that benefited most from this industrial remapping was the Sunbelt (Markusen *et al* 1991). Fowler (1992) offers a particularly interesting observation regarding where this development was directed:

> Federal government policy has consistently supported industrial development in the cities of the South and West, where all city building...has been decentralized. Billions of dollars in defense contracts were responsible for astonishing amounts of suburban factory construction in that part of the country, followed by shopping centres and housing (Fowler 1992, 151).

While this research has not resulted in the discovery of a specific policy regarding the defensive value of the Sunbelt, this move to place defence industries away from the industrial heartland of the Unites States and into low density regions is consistent with much of the dispersal literature.

6.6   Urban Renewal

It is of some interest that the literature relating to slum clearance and urban renewal

written by latter-day observers so frequently employs nuclear imagery to describe the results

of this program:

> The rings of destruction drawn up by urban renewal literally mirror those created by
> nuclear destruction...the parallel between urban implosion and nuclear explosion
> continues at the abandoned Hudson Department Store which is known locally as the
> ground zero of Detroit...(Lippard 1997, 203-4).

Or this:

> So the city [New Haven, Connecticut] razed [Oak Street], giving it the honor of
> becoming the first stage of a massive urban renewal program that transformed the
> city's face and made New Haven ground zero during the 1960s for federally-financed
> experiments with urban form (Gurwitt 2000, 48).

Or this:

> Because Pruitt-Igoe was built as part of a vast urban renewal project that had razed
> city blocks of St. Louis, the project was left standing alone among the ruins. The
> housing scheme was developed at ground zero of that project...(Birmingham 1999,
> para. 36).

These are intuitive associations; yet when placed in context of an urban development

model that was so heavily promoted as a means to reduce the danger from nuclear attack,

they become decidedly ironic. Aside from these connections, are there any further pieces of

evidence that indicate a causal link between civil defence imperatives and the urban renewal

program?

In the 1949 Housing Act, the U.S. Congress endorsed the three-pronged goal of

eliminating substandard housing through the clearance of slums; remedying a shortage of

housing by stimulating its production; and of providing a decent home and living

environment for every American family (Anderson 1964, 4). This project was accomplished

through the large-scale purchase and destruction by local redevelopment agencies of districts

that were considered to be blighted. Redevelopment schemes often substituted irreplaceable historic buildings that provided space for homes, diverse businesses and a vibrant street life, with highly modernist structures, many of which were intended to lure middle- and upper-income residents away from suburban housing (Fishman 1999, 5). However, development often failed to take place at all because the FHA would not provide insurance in blighted central city areas, once the land was cleared there were few private investors who were willing to build there (Gelfand 1975, 171).

The deficiencies of the 1949 Act as it pertained to urban renewal were discussed in a report by housing economist Miles Colean called *Renewing Our Cities*. He proposed that the Act's focus on clearance should be amended to include the rehabilitation of existing buildings and other aspects of maintaining community vitality (Gelfand 1975, 171-172). The National Housing Act of 1954 then introduced the term "urban renewal" to replace the urban redevelopment concept of the 1949 act; its intent was to encourage more renovation than demolition. The latter Act also provided in section 220 for FHA mortgage insurance to be applied to certain buildings within a renewal area; but it was relatively unattractive to lenders compared to the terms the FHA offered on suburban mortgages, and the procedures in place to apply for this insurance were onerous (Sogg and Wertheimer 1966, 165 n., 175, 176 n.).

When public housing was erected in renewal areas it often took the form of towers (influenced by the Radiant City designs of Le Corbusier) arranged in "superblocks", in between which sat vast amounts of unusable "park" space. The interiors of the structures themselves—with their double-loading hallways serviced by elevators—were inherently "undefensible" and plagued by crime and vandalism (Newman 1972). The most notorious of

these "projects", the aforementioned Pruitt-Igoe in St. Louis, was so unlivable that it was demolished only 14 years after it was built (Kunstler 1993, 79).

Yet, in spite of this popular image of urban renewal public housing projects, it is incorrect to depict urban renewal as being chiefly concerned with the provision of public housing. What is not widely understood is the degree to which the theories of the Chicago School writers Ernest W. Burgess, Homer Hoyt and Robert E. Park were borne out; for they maintained that the land commodity market allocates the best and most strategically useful locations to those uses that are deemed to be the most critical to the economy. What the classic Burgess concentric-zone model specifically indicated was that the "zone of transition" was the most natural location for business district expansion (Logan and Molotch 1987, 100). As Friedland (1980) demonstrates, this is precisely what transpired. In his analysis, urban renewal was actually

> a means to restructure the downtown area, to facilitate office growth...to provide housing for the city's white-collar workers, to assure the value of real-estate and mortgage investments, [and] to create optimal conditions for the local network of business organizations (Friedland 1980, 209).

Far from being characteristic of cities in decline, Friedland sees urban renewal as a "corporate response to the difficulties of downtown growth" because "the concentration of poor at the downtown's rim impeded central business district expansion, was irrelevant as a labour supply, and legitimized state intervention to 'eliminate slums'" (ibid, 218).

This push to expunge concentrations of deteriorated buildings through demolition and tenant relocation has been frequently deemed racist; indeed, the program was bitterly referred to as "Negro removal" (Fishman 1999, 5), or "white highways running through black bedrooms" (quoted in Beauregard 1993b, 195). From a locational conflict perspective, "it is no exaggeration to state...that one of the attractions of urban renewal and highway construction has been the physical removal of the fiscally burdensome poor" (Cox 1978, 95).

That urban renewal failed in its stated objectives of providing housing is well-known, and in fact it was credited during the 1960s with destroying almost 4 times as many homes as were built (Anderson 1966, 496). In the end, 10% of all central city white residents and 20% of all black residents lost their homes during the 1960s as a result of urban renewal. (Logan and Molotch 1987, 114). A major explanation for the resulting gaping holes in so many cities was that, "while the few areas suitable for luxury housing were quickly rebuilt, less desirable cleared land might lie vacant for many years because developers were—and are—unwilling to risk putting up high- and middle-income housing in areas still surrounded by slums" (Gans 1966, 542).

The consequence of so much clearance and relatively little replacement construction resulted in the lowering of residential densities. This reduction, at least where New York City was concerned, came in the form of a "double standard" between private and publicly funded projects. MIT city planning professor Bernard Frieden's investigations into this discrepancy (Frieden 1966) are worth quoting at length:

> Urban renewal in New York has also raised serious questions about the purposes of public aid used for channeling private development into otherwise inactive parts of the City...So far as densities are concerned, urban renewal in New York has departed considerably from normal development practice. Private housing developments in and near central Manhattan are usually built at densities of 300 to 500 dwelling units per net acre. Densities in large-scale Manhattan urban renewal projects have been less than half as high, ranging from 100 to 150 dwelling units per net acre. In the other boroughs of New York, where typical densities of private development are about 150 units per acre, urban renewal densities vary mainly between 50 and 100 units per net acre.
>
> From the point of view of public policy, a double standard is clearly involved here. Maximum densities of private development are controlled by zoning regulations. Thus the developer who builds at densities of 500 units per acre has government approval to do so. Yet when public subsidies are made available for urban renewal projects, maximum densities are set at levels far below usual practice... (Frieden 1966, 605).

Frieden offers several possible explanations for this double standard (enabling site assembly, incentives for construction in otherwise inactive areas), but, unsatisfied with these explanations, ponders whether or not public policy is attempting to change private development standards towards lower densities as well (*ibid.*, 606). Jane Jacobs, too, noted in *The Death and Life of Great American Cities* that "when old buildings are replaced with new projects, the dwellings densities are often made lower than they were, so there are fewer dwellings in a district than before" (Jacobs 1961, 207).

Within the realm of the present study, it seems quite remarkable that Jacobs and Frieden should have had cause to wonder why urban renewal projects were being developed, apparently without explanation, in such a way as to reduce densities.

The reader will recall that one of the goals of *Project East River* was to reduce congested urban densities by 20%. The reader should also recall that *East River* (and other dispersal writings) linked strongly the twin goals of expressways and slum clearance. Latter-day descriptions of the results of urban renewal also sound disturbingly familiar:

> Completion of some urban renewal programs took so long that the whole downtown suffered from having so much empty space. Over-enthusiastic land-clearance policies have left holes in some cities that are still unfilled. Most downtown demolition created the highway corridors connecting the old city center to the interstate system. These connections...destroyed so many buildings that they broke up whole districts and gutted neighborhoods (Barnett 1995, 121,122).

Empty spaces in urban centers "broken-up" by expressways: it is the very essence of dispersal brought depressingly to fruition.

6.7 The Internet

Although the Internet has been in existence since the early 1970s, it has only attained mass popularity since the arrival of the World Wide Web in 1993. Whereas the Internet had until that point been the domain of scholarly communication, discussion groups and

information services, it was the application of Hyper Text Markup Language (HTML) that permitted the ubiquitous "Web" to evolve. The potential of the Web is still hardly known, yet in little more than half a decade, it has made a spectacular impact on global culture, and speculation regarding its uses is practically boundless (see any issue of *Wired* magazine). Already the Web has caused a revolution in communications, commerce, entertainment and media. It has also made a particular impression on urban studies.

The implications of the Web for the planning of cities are extraordinary. Scholars and pundits talk about "virtual cities", planners and entrepreneurs alike are focusing on the ability of the Web to popularize e-commerce (thereby reducing the need for "brick and mortar" stores), and transportation planners anticipate the Web allowing more people to telecommute to work. Online "communities", too, have developed around a huge range of concerns, and they have galvanized grassroots activists on a global scale, most persuasively at the Seattle World Trade Organization demonstrations in 1999. (For further discussions regarding information technology and the city, see Blais 1998; Doheny-Farina 1996; Mitchell 1997).

While we do not have the benefit of much historical hindsight on the topic of the Internet and its impacts on society, we can extrapolate somewhat from past scholarship and recognize that the Internet represents a technological force of as great a potency to affect social changes as did the telephone or the automobile. As such, it would obviously lend itself readily to ecological analysis, which would see in current social responses to the Web the natural consequence of the introduction of change of an "exogenous" nature.

Abbate (1999) would not advance such an ecological argument. Adopting (perhaps unintentionally) a "new urban sociology" perspective, she notes that the Internet, like all technology, is "a product of its environment"—that environment being the Cold War

(Abbate 1999, 2). The motivation for the creation of a decentralized computing and communications network was derived from the need to maintain military communications during a nuclear attack. The Internet saw its genesis in an independent Rand Corporation study undertaken by a young engineer named Paul Baran, who sought over the course of three years to create a more "survivable" computer networking system made up of distributed nodes. The idea behind this was that the loss of any of these computing nodes in a nuclear attack would not irreparably harm the network and would, thereby, enable defence communications to be maintained. Beginning in 1965, Baran's work (and that of British scientist Donald Davies) would be developed within a project called ARPANET. This project was funded by the Advanced Research Projects Agency, the director of which reported to the Director of Defense Research and Engineering at the Office of the Secretary of Defense (ibid, 10-36). In 1975 ARPANET was put under the control of the Defense Communications Agency (ibid, 136), and between 1981-3 it was transformed, through the adoption of newly created Internet protocols, into two 'nets: one military (MILNET), the other civilian (ibid, 140-143).

The history of the now ubiquitous Internet shows us two interesting points. As an influence on urban form, the Internet owes nothing to the intellectual output of city planners. The only correlation that might be pointed out is that the "virtual" realm intentionally mimicked the decentralization that was being advocated for the physical one, and for the same reason. The other pertinent point of interest is that, owing perhaps to the extent of the militarization of everyday life during the Cold War (McEnaney 2000), civilian agencies and individuals cooperated willingly with military authorities, and worked alongside them, sometimes even creating projects of a military nature without any explicit instructions to do so (Abbate 1999, 10; Edwards 1997, 261).

6.8 Appraising Causal Explanations

If we are to seek causes for this catalogue of effects in this history, then there are

several ways in which this might be accomplished:

Proposition 1:

That the policies in question (Industrial Dispersal; dispersal clauses in the 1954 Housing Act; Federal Aid Highway Act) had little real effect on urban development.

Response:

There is a case to be made from the contemporary literature that President Truman's

directive was a timid half-measure that, in relying on local initiative, was unable to

accomplish its goals. In regards to the Housing Act, the present research has not revealed

any information one way or the other; an implementation analysis focusing on the ways in

which the Housing and Home Finance Agency carried out this mandate would be required

to determine its efficacy. In the case of the Federal Aid Highway Act, dispersal planning

directly influenced the design of the urban sections of the Interstate Highway system.

There was, however, a consistent hostility on the part of Congress towards spending

federal funds for civil defence programs, and a great deal of understandable conflict over

policies that would have shifted industries out of one (congressional) district and into

another. This is why Tracy Augur's plan to disperse Federal offices (Parsons 1989) was

rejected, as were amendments to the Defense Production Act of 1950.

Proposition 2:

That the policies in question were not only effective in their goals, but that the consequences attributed to them would not have occurred in quite the same way without them. In other words, low-density suburbs would not have proceeded in as accelerated a pace, industries would not have continued to leave central cities and the industrial heartland, and that all the cities with circumferential beltlines and inner-city

expressways would have not have had them without the defensive mandate given the interstate highway system.

Response:

While this is one of the possibilities entertained in this thesis, it is ultimately unanswerable. There are, as we have seen, numerous other factors at work in the evolution of American urban form; yet the urban form we see today is largely *consistent* with what dispersal planners advocated, and certain policies described herein seem to be the *formal* mechanisms through which dispersal was encouraged. It is impossible to state definitively that there is a causal connection; however, the ends—the resultant urban patterns—do, in fact, appear to correlate to the stated means.

Proposition 3:

That defensive dispersal merely provided a convenient political justification for what many parties—especially city planners—wanted to accomplish anyway.

Response:

Klaber (1951) admitted as much when he remarked that planners were attaching defensive qualities to plans because they believed them more likely to be accepted. A wide range of powerful interests—the homebuilding and constructions lobbies, the so-called "road gang", and industries, especially those with a military or aerospace orientation—stood to benefit from those aspects of urban redevelopment to which dispersal pertained. This is a "new urban sociology" interpretation and in no way invalidates the possible impacts of the arms race on the urban form; it merely associates consequences to agency in a slightly different manner.

Proposition 4:

That certain urban policies incorporated the nuclear imperative may ultimately matter less than did the omnipresent nature of—and general acceptance of—dispersal discourse.

Response:

Support for this proposition may be found in the work of Parsons (1989), whose work regarding the eventual completion of otherwise rejected dispersal objectives in Washington D.C. is described in **Chapter 1.10**. As Checkoway has observed, "public policy is not what is stated or intended but what is actually done" (Checkoway 1983, 184).

This argument and its attendant ramifications are explored in detail in **Chapter 7**.

6.9   Conclusion: Defensive Dispersal and Urban Analytical Traditions

In **Chapter 2** paradigmatic lenses were described as means through which historical explanations may be sought, viewed and interpreted. Through the foregoing analysis we can see that certain conclusions about urban history may be reached when viewed in a particular light. Now it is time to view this new interpretation for urban form through these lenses, and to suggest directions for further research.

The Neo Classical Model

To describe the impact of the atomic bomb on cities in terms of land values (determined by supply and demand and the exercise of consumer choice) would not be novel. In 1950 the journal *Air Affairs* published an article entitled "Real estate and the atom bomb" by Herbert U. Nelson, Vice President of the National Association of Real Estate Boards (Nelson 1950). It reported on the results of a survey of 135 real estate boards from around the United States regarding the impact of the bomb on their business. While results showed that 52% expected that many industries would gradually relocate, 45% also felt that

industrial areas would decrease in value because of decentralization. Only 2% felt central business districts would increase in value, and 36% expected a decrease in such values. In regards to residential areas, 71% thought suburban values would rise, and 63% of the respondents noted a boost in sales for exurban properties, a trend they expected to continue (Nelson 1950).

Although this survey dealt with subjective impressions and anecdotal evidence, it does suggest an avenue for future statistical research to determine how closely these expectations were realized.

Human Ecology

The most obvious ecological interpretation of the atomic bomb is that it was, in all practical terms, a technology that was exogenous to society. It was constructed in the strictest secrecy and introduced in a dramatically sudden fashion. Only those familiar with research in atomic science or imaginative works of science fiction would have had the slightest preparation for the changes the bomb brought. Even today,

> it is all too easy to view nuclear weapons as existing outside of human history. Our sense is that a force capable of destroying human history must not be of it but beyond it...the weapons so encompass and diminish us as to seem not of us but to have entered our realm mysteriously from somewhere "outside" and "beyond" (Lifton and Falk 1982, 7).

Given the apparently exogenous nature of the bomb, an ecological interpretation would posit urban residents adapting to its presence by seeking alternative locations for homes and businesses within the context of a free land market that responded to this consumer demand. As we have seen in **Chapters 1.10, 4.2 and 6.2**, there is anecdotal evidence indicating that contemporary observers recognized that the desire for distance inspired by the bomb found expression in increased sales of suburban and exurban properties (Bosworth 1997; Clayton 1960).

Prospects for future research along these lines might include an oral history of those who were homebuyers in the 1950s and 60s, to determine to what extent their residential choices were determined by fears of nuclear attack.

Locational Conflict

The objective of many of the civil defence and dispersal projects was to engage the initiative of local communities and organizations. It was noted above that the 1951 Industrial Dispersal Policy was implemented through the establishment of local dispersion committees. A study employing this paradigm might view the decisions concerning industrial locations made by these organizations as having played a significant role in industrial decentralization. Future research—either archival or qualitative—could pursue an exploration of the ways in which these organizations operated and carried out their mandate.

Institutional Constraints

This has been one of the focuses of the last two chapters. Governmental institutions were prominent in the drive to adjust urban policies to the atomic age. Another avenue not fully explored here would concern real estate agents and the ways in which they promoted low-density suburban and exurban properties by exploiting nuclear fears.

Marxist or Political Economy Approaches

A Marxist interpretation would posit that none of the above discussions concerning the dispersal of defence industries and the concomitant growth of the Sunbelt should be viewed without referral to the "mode of production." Contrary to popular misconception, the dominant mode of production in the postwar United States has not been that of a free capitalist economy. On the contrary, the economy has been dramatically deformed by enormous injections of federal monies in the form of procurements for military, aerospace

and electronics technology, commonly referred to in the literature as "military Keynesianism" (Fusfeld 1998) or "Pentagon Capitalism" (Melman 1970). What this has amounted to is that the military-industrial complex has operated in a *command economy* mode, wherein the only customer is the Pentagon, and ordinary consumer products are left for other nations to produce (Markusen and Yudken 1992).

A Marxist perspective would conclude that because so much of the economy has been of a military nature, that an imperative to place this industrial sector in low-density locations away from the industrial heartland would have had major consequences for the economy as a whole, and for urban form.

The "New Urban Sociology"

The critical paradigm tells us that nothing can be explained without reference to its history and its social context. The atomic bomb may have been created in secrecy, but it should not be viewed as having been introduced from "outside" of American society. Indeed, it was decidedly a product of the social, cultural and political environment which made an effort such as the Manhattan Project possible. It required the highly compartmentalized efforts of thousands of people sworn to secrecy, and included work on the construction of entirely new communities, at Oak Ridge Tennessee and at Los Alamos. Such a culture, refined to peak performance for the exigencies of wartime, was particularly well-suited for a endeavour the scale of the Manhattan Project. Once the bomb became known, it swiftly became enmeshed in popular culture and discourse at every level of society.

A critical perspective would analyze the urban form and the bomb within this socio-cultural environment. The decisions that were made concerning suburbs, highways, factories and urban renewal were done so within the context of a highly "nuclearized" society. Such plans, justified by the shadow of the bomb, brought benefits to certain groups—such as the

"road gang"—and disadvantage to others—such as those who lived in neighbourhoods in the path of the freeways that promised swift escape routes. Because defensive dispersal discourse also contributed to the "thinkability" of nuclear war (see **Chapter 7**), this also worked to the advantage of the military-industrial complex, on whom the federal government bestowed such largesse; Pentagon capitalism could not have been so effortlessly integrated into the American economy without the tacit consent of the American public.

Other fruitful aspects for study within this paradigm would likely centre on the gender politics in dispersal literature; after all, only Catherine Bauer and Astrid Monson appear to have supported dispersal in print. Another avenue of study would be to explore the way in which nuclear anxieties became conflated with the barely-concealed class conflict—and racism—inherent in the fear displayed by planners towards crowded inner-cities. In such a study, the City would be seen as not simply a technological problem to be solved through dispersal plans, but rather something that would have gained a potent symbolic power, a power that reflected a deep moral confusion brought about by nuclear weapons. Such a study—as, indeed, this thesis has attempted to be—would also seek to understand the greater social meanings that might derive from the implementation of plans to reshape cities for military rationalizations. These are among the topics we shall take up in **Chapter 7.**

Chapter 7.0

Meanings and Implications for Postmodern Planning Theory and Practice

7.1   Introduction

Although the interpretation of urban history arising from the present inquiry appears to be compelling, and is certainly open to debate, the research here has revealed that, with few exceptions, the nuclear arms race and defensive dispersal have been all but ignored in the literature of planning history and urban sociology (see however Beauregard 1993, 122-3; Bosworth 1997; Boyer 1985; Dimendberg 1997; Hare 1994; and Parsons 1989). Indeed, the work of the defensive dispersal movement itself seems essentially to have been forgotten by the profession.

As others have observed, planning and urban sociology may be less professional disciplines than they are ideologies (Castells 1975 [1968]; Levin 1984). As such, we should invest some attention to situating this history—replete as it is with ideology—in that light.

7.2   Situating Defensive Dispersal Theory Rhetorically

7.2.1   Defensive Dispersal as Fantasy Planning

In his 1999 book, *Mission Improbable: Using Fantasy Documents to Tame Disaster*, Lee Clarke examines how organizations—corporations and government alike—often formulate plans that are based on untestable and unrealistic assumptions, have little hope of being implemented in real-life situations, and are, indeed, so far removed from reality that Clarke has no hesitation in referring to them as "fantasy documents." Not insignificantly, the plans under discussion revolve around disastrous events such as oil spills, natural disasters, nuclear meltdowns and nuclear war. A classic example of this sort of planning that is cited by the

author is the initiative taken by the U.S. postal service during the Administration of President Jimmy Carter, to plan for the continuation of mail delivery after a nuclear war. Considerable effort was spent in this plan to describe the chain of command in the postal service, and how employees would assist in the completion of change of address cards for relocated populations. The assumptions underlying this exercise were so unbelievable that it was subject to Congressional inquiry (Clarke 1999, 31-2).

One of the means by which such disasters are planned for is to contain them, and to reduce the scope of their impacts to a manageable size. Detroit planner Donald Monson (1954) amply demonstrated this tendency with repeated attempts to reign in the effects of nuclear blasts: "...thermal effects are contained within the probable blast damage area and hence may be discounted" (Monson 1954, 379); "[radiation is deposited] well within the blast damage zone, and so may be discounted" (*ibid*); "...human genetic effects...[do] not affect the question of dispersal directly and so [are] not considered here" (*ibid*, 379-380). With so many serious consequences thus rendered within the scope of management, plans may then be proposed and put forward for consideration. This tendency is also an extremely modernist one, in that it attempts to reduce reality to a simplified construct (Scott 1998, 347).

For Clarke, however, such plans are surely not intended by their architects to be implemented, let alone succeed in their aims. Their value is purely symbolic, in that they are intended to impart some sense of rationality, expertise and control on the part of the organizations presenting the plans. In other words, fantasy disaster planning documents are prepared and presented solely for their rhetorical power. The intended result is that the given danger is normalized: the intended audience is led to believe that the most catastrophic

contingencies have been foreseen and planned for, and that the risks under consideration are ultimately acceptable ones (Clarke 1999).

Although Clarke doesn't refer to the defensive dispersal literature in his book, it is clear that, given the characteristics he provides for "fantasy documents", these plans were also fantastic and at least as useful for their symbolic and rhetorical power as for their practicality. While some of the more ambitious dispersal plans (building linear and donut-like cities and relocating millions of people, for instance) were acknowledged at the time to be hopelessly expensive, the dispersal options presented in *East River* and elsewhere (to accelerate contemporary trends) were clearly practical and achievable. However practical such plans were, one cannot disguise that their intended purpose—to reduce the danger from nuclear weapons—was utterly without hope.

Thus, their rhetorical value cannot be underestimated: for here were plans prepared by experts that appeared to offer a reasonable alternative to nuclear fear in the form of an urban America that was not a radical departure from the existing urban experience, but simply a more "modern", convenient and suburban one. Inasmuch as these plans promoted the construction of freeways, new factories and urban renewal projects, they also meant jobs.

In a larger sociological sense, however, the rhetorical value of defensive dispersal goes deeper—far deeper, in fact, than its architects surely intended.

7.2.2 Rationalizing the Irrational

Even as this thesis has explored professional responses to a time of global crisis, it has also suggested that the planning profession, itself, was faced with a profound crisis at the dawn of the atomic age. Inasmuch as planning as a goal and a profession assumes its domain to be the future (Mandelbaum 1985), the nuclear age generated a widespread sense of

futurelessness (Lifton and Mitchell 1995, 341-350; also Lifton and Falk 1982, 67), which could not have helped but impact planning theory and practice in myriad ways. This futurelessness also imbued the main object of that profession with an aura so negative that it may not yet have entirely dissipated.

In the nuclear threat, the rational and scientific profession of city planning found a planning problem that constituted the ultimate challenge for rational approaches. As such city planners represented an authority of some repute where the nuclear threat to cities was concerned, and members of the profession were asked to prepare speeches for professional associations and articles for national magazines, to participate on *Project East River*, and to join the National Security Resources Board.

Yet this rationality belied what ought to have been a patent truth: what was being rationalized by dispersal planners (a reasoned and—literally—constructive approach to living with atomic weapons) was quite irrational. No amount of urban re-engineering would have been able to prevent massive losses of life and the lethal radioactive contamination of most of the planet. Even on its own terms, the thesis that satellite cities would reduce the nuclear vulnerability of the country was an exceedingly specious one. In housing the newly dispersed war industries, satellites would not only become the more desirable target, but in their profusion would require a determined enemy to stockpile ever more weapons. And in considering only the effects of heat and blast—which could be ameliorated by distance—and neglecting the long-term consequences of radiation and social chaos, dispersal planners rationally "contained" a hypothetical threat beyond any point of contact with reality. As Donald Monson was to observe after the release of *East River*: "[T]he Project East River studies were based on the now outmoded "nominal" atomic bomb....while the differences between the newest hydrogen bomb and the "nominal" bomb may be only a matter of

degree...this point does not diminish the value of the [report]" (Monson 1953, 266). Dismissing the differences between a "nominal" 20 kiloton bomb and a multimegaton bomb thousands of times more powerful as a "matter of degree" bespeaks a single-minded and inflexible attachment to an idea.

For Lifton and Falk (1982), such faith in technically rational approaches to nuclear weapons constitutes embedded "nuclearism" and an "illusion of rationality":

> The illusion is of a "systems rationality"—of a whole structure of elements, each in "logical" relation to the other components and to the whole. We are dealing here with nothing less than the logic of madness—of [a] social madness and collective "mad fantasy"...For the builders of such "rational systems"...are, like the rest of us, confronted by an image they really do not know how to cope with, and seek desperately to call forth, however erroneously, the modern virtue of reason (Lifton and Falk 1982, 21-2).

Through the use of reason and rationality, experts such as city planners and other civil defence officials hoped to contain and redirect the widespread anxieties of their era.

7.2.3 Allaying Fear

City planners, along with members of other professions, helped to assuage public fears and in so doing tried to convince Americans to live with the bomb (Boyer 1985, 333). In this way they contributed to a cultural project of atomic normalization that has proven surprisingly effective for more than half a century. What is more significant still is that the contribution of the city planning profession to this project must represent the *ultimate expression* of that project, in that America's willingness to acquiesce to the presence of nuclear weapons could surely find no more profound a form than in the notion that our society's very physical structure—its cities—would need to adapt to them.

As remarkable as such sentiments sound today, what is even more so is that such an effort on the part of planners and atomic scientists should have been considered so necessary. It is an historical irony of some singularity that it was Americans, of all people, for

whom the atomic age should have brought such extreme manifestations of public anxiety. Pearl Harbor aside, the United States had proved virtually unassailable militarily, was physically unscathed by World War II, and possessed a nuclear monopoly for four years. Even once the Soviet Union developed their own atomic weapons, it was years before that country had the capability to launch them across the planet or even had enough quantities to compete with America's stockpile. Why then, did Americans so "quickly transmut[e] the devastation of Hiroshima into visions of American cities in smoldering ruins...[and] envisio[n] themselves not a potential threat to other peoples, but as potential victims"? (Boyer 1985, 14).

7.2.4 Expiating Guilt

Americans were perpetrators of Hiroshima rather than victims...Even victims can struggle with feelings of guilt, but perpetrators of such an event are likely to expend enormous energy in fending off self-doubt. One can do that either by investing the event with virtue...or by seeking to divest oneself of the perpetrator's role and take on that of the victim.
     -- Lifton and Mitchell (1995), 208.

The excerpt above is taken somewhat out of context. The authors are referring to the tendency of orthodox historians and laypersons to argue in support of the atomic bombings by citing Japanese atrocities, such as the attack on Pearl Harbor and the Bataan Death March. Yet in the context of this thesis it expresses perfectly what the present author believes was one of the most psychologically valuable rhetorical functions of the defensive dispersal movement. Like the greater civil defence program of which it was a part, it relentlessly focused the attention of Americans on their own potential for victimhood. As early as 1946, Dutch psychologist A.M. Meerloo had linked Americans' nuclear fears to "hidden feelings of guilt" (Boyer 1985, 182).

Another striking element in the dispersal literature is the salvation *motif* that permeates so much of it. Windels, Augur, the Monsons and others would repeatedly state their earnest belief that their plans, while devised in response to a terrible threat, would someday result in cities

> infinitely better than anything we have yet seen...[m]ost of us will not live to witness the final achievement, but we can at least have the satisfaction of a part in the creation of the efficient, comfortable, beautiful cities and town which will comprise the metropolitan regions of the next century (Windels 1950, 370).

Perhaps the fullest expression of such sentiments can be attributed to Donald and Astrid Monson, who advised readers to consider that someday, if their plans were implemented and no atomic war came,

> the present fearful...threat hanging over the great city [will] have been turned into so great a blessing that men, looking backward in an age in which atomic power shall have been fully harnessed to peaceful ends, will say that the greatest benefit which flowed from the explosion at Los Alamos (*sic*) was the enforced rebuilding of our urban centers (Monson 1951c, 111).

There is something almost poignant in the barely veiled desperation couched in these visions: that the grand, spacious, and universally beneficial city of the future can somehow transform both the present threat and past employment of the atomic bomb into a "benefit" that "flows", cornucopia-like, into the lives of those yet unborn. What this amounts to is a subtle but potent symbolic reciprocity, one that implies that the act of building these beautiful dispersed cities can somehow redeem the annihilation of two other, distantly comprehended ones. The prospect of a brighter urban future is married to the existence of a city-destroying technology; therefore the continued existence of that technology is imbued with a higher meaning. That this meaning will only be apprehended someday in the far future may not be simply a function of pragmatism, but a recognition, albeit an unconscious one, that present guilt may not be so easily or quickly expiated.

For the present, however, defensive dispersal and civil defence encouraged Americans to expend their emotional energy contemplating how their own cities might be bombed, or somehow saved from bombing. As such it was easier for the nation as a whole to forget that it was Americans that had used the bombs against two cities with almost a half a million noncombatants between them. If such a past could thus be rationalized, then it was a very short psychological distance to contemplating using such bombs again.

7.2.5 Planners and Cold War Ideology

The calming tone of defensive dispersal discourse was not undertaken in the context of simply seeking to give peace of mind to a worried populace; it was part of the overall strategy of civil defence which was interested not just in promoting survival in case of a nuclear attack, but in maintaining a war economy to fight back afterwards, presumably with nuclear weapons. Americans were urged to put their fears aside so that they could be "masters of the atomic bomb", rather than its victims (Lapp 1953, 245). In other words, an "informed" population that has a "more healthy attitude towards atomic warfare" (Lapp 1949, 151) would avoid panic and, in the case of a war, would evacuate the cities and thus be able to resume war production and "support the retaliatory action needed for final victory" (Augur 1948, 30). As long as some factories were left this should be achievable, as William Platt, chairman of Industrial Planning Research at the Stamford Research Institute, observed: "if [civil defense measures are taken] the human body is less vulnerable to effects of atomic attack than are industrial facilities or equipment [so] there will be more workers than jobs" (Platt 1953, 264). The authors of *Project East River*, too, would recommend posting warnings in shelters to the effect that, after a bombing, shelter users should be "prepared to come out and fight fires as soon as possible"—presumably without regard for the lethal

radiation to which they would likely be exposed. (*PER IIb*, 24). Such a low regard for the

safety of the individual should not be considered out of place in a report which stated that

the "primary objective of such a program is to strengthen national defense and security"

(*PER V*, 66b).

To the extent that city planners participated in a project to render nuclear war

thinkable, winnable and rational, they can be said to have been guilty of, at best, wishful

thinking and naivete. A dimmer view would hold that the defensive dispersal project was, in

fact, one of misinformation, to "keep facts from a public which must be protected, to appear

to be doing something about civil defence, and to minimize in the public mind the extent of

the destruction likely to accompany an all-out war" (Thabit 1959, 36).

At its worst, however, one can view this chapter of planning history as something far

more complex and frightening: as one in which a profession was co-opted into perpetuating

Cold War ideology, and in so doing actually became, for a time, a partner in the war-making

apparatus of the United States.

We have seen how the Board of Governors of the American Institute of Planners

offered "all the facilities of our Institute and its members" to the NSRB Chairman and the

director of Selective Service "for defense and for military purposes." (Institute Affairs 1950,

200). Prominent AIP members contributed to *Project East River* under the aegis of the

Department of Defense, the National Security Resources Board and the Federal Civil

Defense Administration; and *East River* members formed a "Summer Study Group" with the

concurrent *Project Lincoln* to look at linking civil defence with the problem of continental air

defence and early warning systems (Lapp 1953, 234). The Board of Governors of the AIP

then endorsed *East River*. And in a closely related (but most overt) example, the American

Institute of Architects became one of many professional organizations that actually contributed to the testing of nuclear weapons (FCDA 1955, 159).

In attempting to make its particular services relevant to the nuclear age, the planning profession married itself to Cold War ideology and the "systems irrationality" of nuclearism (Lifton and Falk 1982, 21-22). Planners thus took the modernist project to what must be one of its most extreme expressions.

7.2.6 The Hole in Planning History

Such a history, if it were more widely acknowledged, would surely cause no little discomfort to a profession that has often viewed its history in "heroic" terms (Sandercock 1998, 34). This history now seems even more incongruous in light of contemporary espousal of environmental sustainability, social equity and "insurgent" practice, with the goal of empowering marginalized individuals and groups (ibid., 129-159). That the Cold War activities of American city planners have not been more widely discussed in the literature may be owed to such discomfort, but it would seem unlikely. Such discomfort would presuppose some general knowledge of the events under discussion.

Perhaps the interrelationships between the Cold War and city planning have been mostly overlooked because, although our profession has a long tradition of self-criticism and adjustment (summarized in Sandercock 1998, 89-104), there is an even more potent and general societal tradition of self-deception where the atom bomb is concerned. As Paul Brians has noted, "nuclear war must be the most carefully avoided topic of general significance in the contemporary world" (Brians 1987, 3-4; see also Lifton and Mitchell 1995). As well, if one views this movement within the greater social project to accommodate the bomb within the realm of the "thinkable", then is it not unreasonable to conclude that

defensive dispersal discourse was, along with the bomb itself, reluctantly rendered acceptable to a democratic—but "nuclearized"—society, and then willfully forgotten?

7.2.7 Defensive Dispersal as Conventional Wisdom

Judith Innes (1998) has theorized that information in planning acts as a lens, defining the "nature of the reality decision makers confront" (Innes 1998, 54-55). Such information can be said to be "embedded", and acts to shape the assumptions and the questions that are asked in a particular policy context.

During the Cold War, planners were asked to apply their skills to a project of literally unfathomable dimensions. Yet in the course of little more than a decade, it is herein being suggested that defensive dispersal became "embedded information" that "informatized" the planning profession; and,

> [w]hen information is most influential, it is also most invisible. That is, it influences most when it is part of policy participants' assumptions and their problem definitions, which they rarely examine (Innes 1998, 54 [italics in the original]).

Defensive dispersal became part of the assumptions of planners because it became conventional wisdom—or at least, was presented in such a way that it ought to have been. In its 1953 endorsement of Project East River, the American Institute of Planners used some particularly potent language to stress the essential correctness of dispersal principles:

> The American Institute of Planners does not claim competence in military measures of national defense, but it holds this fact self-evident, that the best way to prevent attacks upon this country is to deprive potential enemies of targets that will make such attacks profitable to them....plain common sense dictates that it should be remedied with all possible dispatch. (American Institute of Planners, 1953, 268 [emphasis added])

Readers at all familiar with American history should recognize the allusion in the first sentence, one which can hardly have been an accident. It is, of course, an echo of the second paragraph of one of the most hallowed of American documents, the Declaration of

Independence: "We hold these truths to be self-evident, that all men are created equal..." Such

an argument would have difficult to refute, particularly during a time of such ferocious

"anticommunist" purges.

The statement also calls defensive dispersal "plain common sense." Clearly, by 1953,

the concept of urban design being subject to the needs of the atomic age was a familiar one.

The sheer proliferation of literature concerning the needs for dispersing industry and

population (as evinced by Altmann and Moskowitz [1951]) indicates that defensive dispersal

was rapidly becoming "embedded" on a number of levels: amongst city planners, atomic

scientists, military strategists, city councils, engineers, politicians, real estate agents and

ordinary laypersons. The extent of this "informatization" is not really knowable, but it

cannot be doubted to have left some legacy of its own.

7.2.8 The Legacy of Cold War Planning

As McEnaney has noted, histories of civil defence during the Cold War can tend to

be "cutesy" (McEnaney 2000, 152), and almost smug in their postmodern sensibilities.

Unfortunately, an ironic detachment of this sort is unwarranted, for, although the Cold War

as we knew it has ended, the threat of nuclear war has receded only in public awareness. The

missiles are still there, as are the pairs of silo operators and their matching sets of keys.

What is of more concern in terms of this history is that the theories and imperatives

of defensive dispersal are not as remote as one would think. In the early 1980s, while

President Ronald Reagan was leading an enormous surge in military spending and bellicose

anti-Soviet rhetoric, (and the Deputy Undersecretary of Defense T.K. Jones made a

notorious remark to the effect that "everybody's going to make it if there are enough shovels

to go around" [Beres 1983, 7]), civil defence planning for cities once again went into

operation, this time on a concept known as "crisis relocation planning", or CRP (Leaning and Keyes, 1984).

Formulated in the last years of President Carter's administration (but dramatically augmented by Reagan to anticipate a "protracted" nuclear war), CRP was meant to temporarily relocate millions of people from high risk metropolitan areas to safer rural locations during times of international crisis, where "fallout protection" would be arranged. The concept's most important—and baseless—assumption was that 80% of the U.S. population could be saved in this way (Beres 1983, 7).

Most people, according to the plan, would be transported in their own vehicles; should a traffic jam occur, the Defense Civil Preparedness Agency (DCPA) instructed citizens in a pamphlet to "turn off your engine, listen for official instructions and be patient. Do not get off of the line to find an alternate route. All routes will be crowded" (quoted in Beres 1983, 8). The plan for New York City's evacuation did not account for half-filled gas tanks or mechanical failures, and the remaining New Yorkers who did not own their own cars could be flown out—on a fleet comprising 50% of the nation's Boeing 747s (*ibid.*, 9). The "systems irrationality" (Lifton and Falk 1982, 21-22) inherent in notions of "crisis relocation planning" is astonishing.

What is not so surprising is that, in this case, the plan to evacuate New York City has a direct link to the days of defensive dispersal: the plan was prepared by SRI International, the successor of the Stamford Research Institute (*ibid.*, 8-9), which had contributed to Industrial Dispersal studies in 1953 (Platt 1953).

Nuclear warfare is still, of course, being rationally planned by policy analysts who seek to convince politicians and members of the public of the rationality of living with and,

if necessary, using weapons of mass destruction. At the core of these analyses is a tenacious

faith in technical rationality on the part of the social sciences:

> The analysts behave as though they are under a moral imperative to deflate the so-
> called myths and mysteries that surround the subject of nuclear disaster, [and] to
> simplify the phenomena under investigation so as to accommodate it to their
> models...yet, the entire edifice of analysis, prediction and planning comes tumbling
> down as soon as we question the moves and the underlying assumptions that give
> the edifice a foundation (Schön 1984, 46).

At the time of this writing, the United States is again gearing up to commit further

tens of billions of dollars on a "shield" (the sequel to President Reagan's extravagantly

expensive and abortive Strategic Defense Initiative) to counter missiles launched by so-

called "rogue states." Military planners are also contemplating "mini-nukes" a third of the

size of the Hiroshima bomb that could be used on battlefields to "burrow" into the earth to

destroy hardened bunkers "without 'collateral damage' to nearby civilians"(Mackenzie 2000,

6).

That claims of rationality concerning nuclear weapons on the part of policy analysts

and scientists are still being seriously tendered in the 21" Century attests to the entrenched

nature of not only the sometimes dubious claims of rationality on the part of the policy

sciences, but to the embedded "nuclearism" in American society—a condition of which city

planners can be said to have played a not inconsiderable role in facilitating.

7.3   Implications for Postmodern Planning

7.3.1   Crises and a Postmodern Dilemma

For a profession that does seek to engage in progressive, environmentally and

socially sustainable practice, it would seem reasonable that this history should be reclaimed,

made a part of planning curricula and otherwise disseminated in order that it might become

part of other postmodern critiques of the planning profession. What makes such a goal even

more imperative is that the history of city planning in the Cold War is replete with relevance for the postmodern planner during an era that is widely being referred to as one of global environmental crisis. As Altermann (1995) has noted, the literature provides few examples of planners facing crisis in practice.

Many (but by no means all) of the criticisms leveled against defensive dispersal in this thesis are in essence the same ones that have for decades been raised against rational comprehensive planning in general: top-down, modernist, technocratic and undertaken by professional "experts" for a "public good" that was only assumed. In this case, the public good was measured, for the most part, in the grossest of manners—as an alternative to being bombed.

If one is to see in this history some applicable lessons for the planner in the information age, then there should first be an acknowledgement of how much the planning profession has changed since the 1950s. As Sandercock (1998) and Taylor (1999) note, the profession has undergone continual self appraisal and adjustment, questioning its rational approaches, recognizing its many harmful and discriminating oversights, and attempting to account for the needs—and contributions—of multiple publics. Planners are now being trained to plan *with* communities rather than *for* them (Healey 1997), and to consider "metanarratives" with suspicion (Taylor 1999, 338-339)—and surely the ideology of nuclear deterrence must represent a metanarrative on the grandest of scales.

As a result of these developments (Taylor [1999] hesitates to call them "paradigm shifts"), we can speculate that planners would be unlikely to react today to a social and technological threat such as that posed by the atomic bomb in the same manner that we have seen here. Such unquestioning affiliation with government as is evinced in this history would probably be, for a variety of reasons, unpalatable for many planners. Similarly,

planners would not be capable of promoting grand new designs for metropolitan areas created without benefit of any kind of consultation with communities. Urban society and the planning profession have both progressed to a point where such planning is no longer considered desirable, possible or morally defensible. Indeed, it would in all likelihood be extremely difficult to get a nation's planners to "generally agree" (as Thabit [1959] would observe of dispersal planning) on any one project, regardless of how urgent some thought it to be. This line of reasoning is not, as we shall see, entirely conjectural.

We now have an abundant literature that responds to the present crisis of ecological destruction and the need for sustainable practices by calling for a "new planning agenda" (Beatley and Manning 1997, 1-26). Yet how are planners responding in practice?

In Philip Berke's 2000 article, "Are we planing for sustainability?" (Berke 2000) the author reveals the results of study undertaken of 30 comprehensive plans, in order to determine the extent to which the plans supported the principles of sustainable development. To the author's surprise, while some plans explicitly stated their intentions to support these principles, a thorough analysis revealed that there was no difference between the ability of such plans to promote sustainability and those that advocated no such goals. Berke concluded that, while certain aspects of sustainability appear to have become commonly accepted, most planners only have a superficial understanding of what sustainable planning actually entails. The author recommends that planners need to take a much more expansive view of sustainability, that it needs to become less symbolic and integrated much better in the overall operating assumptions of planning. Furthermore, governmental direction is desirable, for when sustainability becomes operationalized at the state level, then local decision-makers will have fewer difficulties in implementing sustainability-promoting initiatives (Berke 2000).

The reader will undoubtedly recognize much of the defensive dispersal tradition in Berke's admonitions: planners urgently need to be made more thoroughly aware of this new planning concept; it must become part of planners' assumptions; and the state must mandate this mode of planning so that it may become more easily incorporated at the local level. The difficulty in all this is that sustainability is being touted as a new metanarrative—something postmodernists tell us to regard with suspicion (Taylor 1999, 338-339). Planners are being urged to "embed" (Innes 1998) this new planning idea, and to rally behind a project that must become state-driven. What remains for the postmodern planner, then, is a practical and philosophical dilemma.

7.4   Conclusion: Toward a New Planning History

Ken Wilber (2000) postulates that, as human consciousness evolves, the tendency is for each successive wave of consciousness to "transcend and include" those that preceded it. Each wave, in order to move beyond its predecessor, must first embrace the earlier wave in its own composition. Should this occur at our postmodern stage, Wilber suggests that the aforementioned aversion for metanarratives is replaced by "softer, nested" metanarratives that are inclusive and integrative, and thus avoid the exclusionary oppressiveness that characterized such metanarratives in the past.

Wilber applies these principles of integrative consciousness to several professional disciplines, with profound results (Wilber 2000). Although the present author makes no claim to be able to follow suit in regards to the planning profession, Wilber's ideas do lend support for our immediate concern. In the context of planning for sustainability and the neglected history of defensive dispersal, it would seem that the dilemma described above in

Chapter 7.3 can vanish: if the planning profession fully embraces its past, it will then be able

to transcend it. To aid in this process, the planning profession should consider that:

- at least some of the (multiple) causes of our current crisis of unsustainability were deliberately advocated by planners in support of a doctrine of nuclear war-making;

- as a result, our built form has to some degree been influenced by this doctrine. In embracing sustainability we can also reject the historical militarization of urban form;

- we should not underestimate either the impacts that our plans can have, nor the different psycho-social levels at which these impacts may be manifested;

- because we are capable of contributing to such an extent to the "embedding" of information on so many levels, we should be affirmed of our ability to be agents of change;

- that this history is woefully underexamined in the professional literature strongly indicates that many of the imperatives it describes remain "embedded" and thus retain some potency. Because the nuclear imperative as it concerns cities might be very deeply embedded, we should be aware of the possibility that it still informs our feelings about cities and how to plan them;

- planning as a function and as an ideal should not be viewed ahistorically, i.e., outside of its historical contexts. This should extend to how we appraise our own roles, motivations, precedents and actions today;

- because so many planners work for various levels of government, we should be acutely aware that our work may be tied to projects that are politically and ideologically charged;

- while we should exercise judgment and caution about becoming closely associated with government-sanctioned projects, the integrative paradigm described in Wilber (2000) recognizes the value of metanarrative and hierarchy in holistic approaches;

- because the civil defence program never succeeded in engaging the full cooperation of a wide spectrum of the public, it is clear that its methods for dealing with crisis—top-down, modernist and rational—are not to be emulated. By contrast, the planning approaches that have been evolving since the 1960s—radical practice, collaboration, the use of diverse sources of knowledge, and transactive planning—are going to be essential if planners are to engage multiple publics in the new urban planning project of sustainability.

Finally, while much of this analysis has been exceedingly critical of dispersal planners, it must be granted that some of the early Cold War dispersal planners probably recognized something that many of our own latter-day counterparts have apparently failed to (Berke 2000): that there *was* a crisis that must be dealt with, and that planners had the ability to reduce the threat this crisis posed. By including this history and what it tells us about the planner *in* society, perhaps our profession can transcend it and commit to a new vision that acknowledges that we not only have a role to play in addressing crises, but that our practice can make a difference in these crises. It depends upon the choices we make as professionals whether or not such interventions are for good or ill.

Hiroshima is the place of no place, revealing a deep lacunae, a placelessness, at the heart of postindustrial culture.

-- Michael Perlman, *Imaginal Memory and the Place of Hiroshima*

There is little sense of having arrived anywhere, because everyplace looks like noplace in particular.

--James Howard Kunstler, *Home From Nowhere*

Citation Sources:

——. 1993. *Chicago Manual of Style* 14ᵗʰ ed., rev. Chicago, University of Chicago press.

——. 2000. *Electronic Sources: APA Style of Citation.* [Online] Available http://www.uvm.edu/~ncrane/estyles/apa.html (14 December 2000).

——. 1986. *Uniform System of Citation,* 14ᵗʰ ed. Cambridge Mass., Harvard Law Review Association.

Bibliography

42 U.S.C. § 1522 (1999)

H.R. 7839, 83ʳᵈ Cong., § 811 (1954), reprinted in 1954 U.S.C.C.A.N., 745.

H.R. 7839, 83ʳᵈ Cong., § 910 (1954), reprinted in 1954 U.S.C.C.A.N., 2821.

——. 1965. *Congress and the Nation 1945-1964: A Review of Government and Politics in the Postwar Years.* Washington D.C., Congressional Quarterly Service.

——. 1981. *Hiroshima and Nagasaki: the Physical, Medical and Social Effects of the Atomic Bombings,* edited by The Committee for the Compilation of Materials on Damage Caused by the Atomic Bombs in Hiroshima and Nagasaki. New York, Basic Books, Inc. Publishers.

——. 1950. How U.S. cities can prepare for atomic war. *Life* December 18ᵗʰ, 77-86.

——. 1950. Institute affairs, planners and the national emergency. *Journal of the American Institute of Planners.* Fall, 200.

——. 1951. The Pros and cons of architecture for civil defense. *Progressive Architecture* (September), 63

——. 1952. Federal leadership to reduce vulnerability. *Project East River Part II-B.* New York: Associated Universities, Inc. [PER]

——. 1952. Reduction of urban vulnerability. *Project East River Part V.* n.p.

Abrams, Charles. 1951. Does safety lie in dispersal?...no. *Progressive Architecture* (September), 75.

Abbate, Janet. 1999. *Inventing the Internet.* Cambridge, The MIT Press.

Adams, Carolyn et al. 1991. *Philadelphia, Neighborhoods, Division, and Conflict in a Postindustrial City.* Philadelphia, Temple University Press.

Adams, Frederick J. 1950. President's report for 1949. *Journal of the American Institute of Planners* (Winter).

Alonso, William. 1964. *Location and Land Use*. Cambridge, MA: Harvard University Press.

Alperovitz, Gar. 1985. *Atomic Diplomacy*. New York, Penguin.

Alperovitz, Gar. 1995. *The Decision to Use the Atomic Bomb and the Architecture of an American Myth*. New York, Alfred Knopf.

Alterman, Rachelle. 1995. Can planning help in time of crisis? *Journal of the American Planning Association* 61 (2), p156-178.

Altmann, Berthold and Harry Moskowitz. 1951. Dispersal – a selected reading list. *Bulletin of the Atomic Scientists* 7 (9), 280-284.

Alvord, Katie. 2000. *Divorce Your Car!* Gabriola Island, New Society Publishers.

American Institute of Planners. 1953. Defense considerations in city planning. *Bulletin of the Atomic Scientists* 9 (7), 268.

American Institute of Planners Committee on Land Policy. 1950. Urban policy USA. *Town and Country Planning* (October 18th), 400-405.

America's Defense Monitor – Center for Defense Information. 1998. *Legacy of Hiroshima*. [Online] Available http://www.cdi.org/adm/Transcripts/847. (Accessed 19 November 2000).

Anderson, Martin. 1964. *The Federal Bulldozer: a Critical Analysis of Urban Renewal, 1949-1962*. Cambridge, The MIT Press.

Anderson, Martin. 1966. The federal bulldozer. In *Urban Renewal, The Record and the Controversy*, edited by James Q. Wilson, 491-508. Mass, The MIT Press.

Angel, William D. Jr. 1977. To Make a city: entrepreneurship on the Sunbelt frontier. In *The Rise of the Sunbelt Cities*. edited by David C. Perry and Alfred J. Watkins. Beverly Hills, Sage.

Ash, Brian, ed. 1977. *The Visual Encyclopedia of Science Fiction*. New York, Harmony Books.

Augur, Tracy B. 1948. Decentralization – blessing or tragedy? In *Proceedings of the Annual National Planning Conference held in New York City October 11-13* 1948, Chicago, American Society of Planning Officials.

Augur, Tracy B. 1948. The dispersal of cities as a defense measure. *Journal of the American Institute of Planners* (Summer, 1948), 29-35.

Ballinger, R. Maxil. 1950. If the A-bomb drops. *Management Record* (August), 286-291.

Bardach, Eugene. 1978. *The Implementation Game: What Happens After a Bill Becomes a Law.* Cambridge, Massachusetts, Harvard University Press.

Barnett, Jonathan. 1995. *The Fractured Metropolis.* New York, Icon Editions.

Barrett, Susan. and Colin Fudge, eds. 1981. *Policy and Action: Essays on the Implementation of Public Policy.* London, Methuen.

Bassett, Keith and John Short. 1980. *Housing and Residential Structure: Alternative Approaches.* London, Routledge and Kenan Paul.

Bauer, Catherine. 1951. Housing, planning and the new emergency. *Community Planning Review* 1 (3), 78-82.

Baum, Howell S. 1983. *Planners and Public Expectations.* Cambridge, Massachusetts, Shenckman.

Baum, Howell S. 1986. Politics in planners' practice. In *Strategic Perspectives on Planning Practice*, edited by Barry Checkoway. Lexington, Massachusetts, Lexington Books, 25-42.

Beatley, Timothy and Kristy Manning. 1997. *The Ecology of Place.* Washington D.C.: Island Press.

Beauregard, Robert A. 1993a. Representing Urban Decline: postwar cities as narrative objects. *Urban Affairs Quarterly* 29 (2), 187-202.

Beauregard, Robert A. 1993b. *Voices of Decline: the Postwar Fate of U.S. Cities.* Cambridge, Blackwell.

Beauregard, Robert A. 1996. Between modernity and postmodernity, the ambiguous position of U.S. planning. In *Readings in Planning Theory*, edited by S. Campbell and S. Fainstein. Cambridge Mass., Blackwell.

Benveniste, Guy. 1989. *Mastering the Politics of Planning: Crafting Credible Plans and Policies That Make a Difference.* San Francisco, Jossey-Bass.

Beres, Louis Rene. 1983. Subways to Armageddon. *Society* 20 (6), 7-10.

Berke, Philip R. 2000. Are we planning for sustainable development? *Journal of the American Planning Association* 66 (1), 21-37.

Berman, Marshall. 1982. *All That is Solid Melts into Air: the Experience of Modernity.* New York, Simon and Schuster.

Bird, Kai and Lawrence Lifschultz, eds.. 1998. *Hiroshima's Shadow.* Stony Creek, CT, Pamphleteer's Press.

Birmingham, Elizabeth. 1999. Reframing the ruins: Pruitt-Igoe, structural racism, and African-American rhetoric as a space for cultural critique. *Western Journal of Communication* 63 (3), 291-310, in Academic Search Elite [database on-line]; http://www.epnet.com/ehost/login.html. (Boston, MA.: EBSCO Publishing, accessed 19 November 2000).

Blais, Pamela. 1998. The Shape of the information city: Understanding the impacts of the information revolution on city form. *Plan Canada* 39 (September), 8-11.

Bluestone, Barry and Harrison Bennett. 1982. *The Deindustrialization of America: Plant Closings, Community Abandonment, and the Dismantling of Basic Industry*. New York, Basic Books Inc, Publishers.

Bosworth, Thomas L. 1997. The Bomb and the suburbanization of America. *The Atomic Age Opens: American Culture Confronts the Atomic Bomb. Selected Proceedings from the Conference Sponsored by the Popular Culture Library and the Department of Popular Culture, Bowling Green State University, July 13-15, 1995*, 275-286.

Bottomore, Tom and Patrick Goode, eds. 1983. *Readings in Marxist Sociology*. Oxford, Clarendon Press.

Bourne, L. S. 1993. Close together and worlds apart: an analysis of changes in the ecology. *Urban Studies* 30 (8), 1293-1318.

Bourne, Larry S. 1978. *Perspectives on the Inner City: its Changing Character, Reasons for Decline and Revival*. Toronto, Centre for Urban and Community Studies, University of Toronto.

Boyer, Christine. 1983. *Dreaming the Rational City: the Myth of American City Planning*. Cambridge, Massachusetts, MIT Press.

Boyer, Paul. 1985. *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age*. New York, Pantheon Books.

Boyer, Paul. 1998. *Fallout: a Historian Reflects on America's Half-Century Encounter With Nuclear Weapons*. Columbus, Ohio State University Press.

Bradbury, Katharine L., Anthony Downs, and Kenneth A. Small. 1982. *Urban Decline and the Future of American Cities*. Washington, the Brookings Institution.

Brians, Paul. 1987. *Nuclear Holocausts: Atomic War in Fiction, 1895-1984*. Kent, Ohio, Kent State University Press.

Broderick, Mick. 1991. *Nuclear Movies: a Critical Analysis and Filmography of International Feature Length Films Dealing with Experimentation, Aliens, Terrorism, Holocaust, and Other Disaster Scenarios, 1914-1989*. Jefferson, N.C. : McFarland & Co.

Burd, Gene. 1977. The Selling of the Sunbelt: civic boosterism in the media. In *The Rise of the Sunbelt Cities*, edited by David C. Perry and Alfred J. Watkins. Beverly Hills, Sage.

Burgess, Ernest W. 1996. The growth of the city: an introduction to a research project. In *The City Reader*, edited by Richard T. LeGates and Frederic Stout. New York, Routledge.

Cadwallader, Martin. 1991. Metropolitan growth and decline in the United States: An empirical analysis. *Growth & Change* 22 (3):1-17, in Academic Search Elite [database on-line]; http://www.epnet.com/ehost/login.html. (Boston, MA.: EBSCO Publishing, accessed 19 November 2000).

Calthorpe, Peter. 1993. *The Next American Metropolis: Ecology, Community, and the American Dream*. New York, Princeton Architectural Press.

Campbell, Scott and Susan S. Fainstein, eds. 1996. *Readings in Planning Theory*. Cambridge Mass., Blackwell.

Caro, Robert A. 1974. *The power broker: Robert Moses and the fall of New York*. New York, Knopf.

Castells, Manuel. 1976 [1968]. Is there an urban sociology? In *Urban Sociology: Critical Essays*, edited by Chris G. Pickvance. London, Tavistock.

Castells, Manuel. 1977. *The Urban Question*. Cambridge, MIT Press.

Caute, David. 1978. *The Great Fear: The Anti-Communist Purge Under Truman and Eisenhower*. New York, Simon and Schuster.

Chakrawarti, Pranab. 1996. The Dispersed city. *Ekistics: the Problems and Science of Human Settlements* 63 (376/377/378), 53-60.

Checkoway, Barry. 1983. Large builders, Federal housing programs, and postwar suburbanization. In *Readings in Urban Analysis: Perspectives on Urban Form and Structure*. New Brunswick, NJ, Rutgers State University Center for Urban Policy Research.

Chee, Yoon. 1972. *An Examination of the Rational-Irrational Components in the Planning Process*. Thesis. University of Manitoba.

Christensen, Karen S. 1985. Coping with uncertainty in planning. *Journal of the American Planning Association* 51 (1), 63-73.

Chudacoff, Howard P. 1981. *The Evolution of American Urban Society*. 2nd ed. New Jersey, Prentice-Hall.

Clapson, Mark. 1998. *Invincible Green Suburbs, Brave New Towns: Social Change and Urban Dispersal in Postwar England*. Manchester: Manchester University Press.

Clarke, Lee Ben. 1999. *Mission Improbable: Using Fantasy Documents to Tame Disaster*. Chicago, University of Chicago Press.

Clayton, Philip. 1960. Can we plan for the atomic age? *Journal of the American Institute of Planners* 26 (2), 111-118.

Committee on Physical Planning. 1956. *A Guide to Urban Dispersal.* Montreal, McGill University.

Cox, Kevin R. ed. 1978. *Urbanization and Conflict in Market Societies.* Chicago: Maaroufa Press, Inc.

Creighton, Thomas H. 1951. Is there any defense from the bomb?...No. *Progressive Architecture* (September), 80.

Crowley, Terry. 1988. *Clio's Craft: a Primer of Historical Methods.* Toronto, Copp Clark Pitman Ltd.

Cusker, Joseph P. 1980. The World of tomorrow: science, culture, and community at the New York World's Fair. In *Dawn of a New Day: The New York World's Fair, 1939/40* edited by Helen A. Harrison. New York, The Queen's Museum.

Davis, Mike. 1998. *Ecology of Fear: Los Angeles and the Imagination of Disaster.* New York, Henry Holt and Company.

Dean, Robert D. 1973. *Suburbanization of Industry in the U.S.* Oak Ridge Tenn., Oak Ridge National Laboratory.

Dear, Michael J. and Jonathan Long. 1978. Community strategies in locational conflict. In *Urbanization and Conflict in Market Societies,* edited by Kevin R. Cox. Chicago: Maaroufa Press, Inc.

Dimendberg, Edward. 1997. City of fear, defensive dispersal and the end of film noir. *Any* 18, 14-17.

Doheny-Farina, Stephen. 1996. *The Wired Neighborhood.* New Haven, Yale University Press.

Doxiades, Konstantinos. 1966. *Urban Renewal and the Future of the American City.* Chicago, Public Administration Service.

Duany, Andres, Elizabeth Plater-Zyberk and Jeff Speck. 2000. *Suburban Nation: the Rise of Sprawl and the Decline of the American Dream.* New York, North Point Press.

Dudley, Michael Q. 2001 (forthcoming). Sprawl as strategy: city planners face the bomb. *The Journal of Planning Education and Research.* 20 (4).

Duncan, Otis Dudley. 1959. Human ecology and population studies. *Study of Population: an Inventory and Appraisal,* edited by Philip M. Hauser and Otis Dudley Duncan. Chicago, The University of Chcago Press.

Dunn, Michael. 1998. *Driving Forces: the Automobile, its Enemies and the Politics of Mobility.* Washington DC, Brookings Institute.

Edwards, Paul N. 1996. *The Closed World: Computers and the Politics of Discourse in Cold War America.* Cambridge, The MIT Press.

Feagin, Joe R. 1983. *The Urban Real Estate Game.* Englewood Cliffs N.J., Prentice-Hall.

Feagin, Joe R. 1986. The Corporate center strategy: the state in central cities. *Urban Affairs Quarterly* 21 (4), 617-628.

Feagin, Joe R. 1998a. The Global context of metropolitan growth: Houston and the oil industry. In *The New Urban Paradigm: Critical perspectives on the City*, edited by Joe R. Feagin. New York, Rowman & Littlefield Publishers.

Feagin, Joe R., ed. 1998b. *The New Urban Paradigm: Critical perspectives on the City.* New York, Rowman & Littlefield Publishers.

Federal Civil Denfense Administration [FCDA]. 1955. *Cue for Survival: Operation Cue A.E.C. Test Site May 5th, 1955, a Report by the Federal Civil Defense Administration.* Washington D.C., United States Government Printing Office.

Finc, Marc. 1993. Toward a sunbelt urban design manifesto. *Journal of the American Planning Association.* 59 (3): 320-334, in Academic Search Elite [database on-line]; http://www.epnet.com/ehost/login.html. (Boston, MA.: EBSCO Publishing, accessed 19 November 2000).

Fishman, Robert. 1999. *The American Metropolis at Century's End: Past and Future Influences.* Washington DC., Fannie Mae Foundation.

Fishman, Robert. 1987. *Bourgeois Utopias: the Rise and Fall of Suburbia.* New York, Basic Books Inc, Publishers.

Fishman, Robert. 1977. *Urban Utopias in the twentieth century: Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier.* New York, Basic Books Inc, Publishers.

Flanagan, William G. 1993. *Contemporary Urban Sociology.* New York, Cambridge University Press.

Fleischmann, Arnold. 1977. Sunbelt boosterism: the politics of postwar growth and annexation in San Antonio. In *The Rise of the Sunbelt Cities.* edited by David C. Perry and Alfred J. Watkins. Beverly Hills, Sage.

Flink, James J. 1988. *The Automobile Age.* Cambridge, the MIT Press.

Flink, James J. 1975. *The Car Culture.* Cambridge, the MIT Press.

Forrest, Ray, Jeff Henderson and Peter Williams, eds. 1982. *Urban Political Economy and Social Theory.* Hampshire, England, Gower Publishing Company.

Fowler, Edmund P. 1992. *Building Cities that Work.* Montreal: Queen's University Press.

Franck, James, et al. 2000. *Report of the Committee on Political and Social Problems*. Manhattan Project, University of Chicago, June 11th, 1945. [Online] Available http://www.dannen.com/decision/franck.html (accessed 19 November 2000).

Frieden, Bernard. 1966. Policies for rebuilding. In *Urban Renewal, The Record and the Controversy*, edited by James Q. Wilson. Mass, The MIT Press.

Friedland, Roger. 1980. Corporate power and urban growth: the case of urban renewal. *Politics and Society*. 10 (2), 203-224.

Friedmann, John. 1987. *Planning in the Public Domain, From Knowledge to Action*. Princeton, Princeton University Press.

Funigiello, Philip J. 1990. Managing armageddon: the Truman Administration, atomic war and the National Security Resources Board. *Journal of Policy History*. 2 (4), 403-424.

Furedi, Frank. 1992. *Mythical Past, Elusive Future: History and Society in an Anxious Age*. London, Pluto Press.

Fusfeld, Daniel R. 1998. Economics and the Cold War: An inquiry into the relationship between ideology and theory. *Journal of Economic Issues* 32 (2), 505-512.

Gans, Herbert J. 1966. The Failure of urban renewal. In *Urban Renewal: the Record and the Controversy*, edited by James Q. Wilson. Cambridge Mass., MIT Press.

Garreau, Joel. 1988. *Edge City: Life on the New Frontier*. New York, Doubleday.

Gelfand, Mark I. 1975. *A Nation of Cities: The Federal Government and Urban America, 1933-1965*. New York, Oxford University Press.

Goldsmith, William W. 1996. America cannot afford to abandon its cities. *International Planning Studies* 1 (3), 263-290.

Gordon, David M. 1984. Capitalist development and the history of American cities. In *Marxism and the Metropolis: New Perspectives in Urban Political Economy*, edited by William K. Tabb and Larry Sawers. New York, Oxford University Press.

Gorrie, Jack. 1951a. Federal dispersion policy stresses local initiative. *Bulletin of the Atomic Scientists* 7 (9), 270-271.

Gorrie Jack. 1951b. Official dispersal recommendations of the national security resources board *Bulletin of the Atomic Scientists* 7 (9), 264.

Gorrie, Jack. 1951. NSRB dispersion policy. *Bulletin of the Atomic Scientists* 7 (9), 263.

Gottdiener, M. and Joe R. Feagin. 1988. The Paradigm shift in urban sociology. *Urban Affairs Quarterly* 24 (2), 163-187.

Gottdiener, Mark. 1977. *Planned Sprawl: Private and Public Interests in Suburbia.* Beverly Hills, Sage Publications, Inc.

Guinther, John. 1996. *The Direction of Cities.* New York, Viking.

Gurwitt, Rob. 2000. Death of a neighborhood. *Mother Jones* 25 (5), 46-53+.

Haig, Robert M. 1926. Towards an understanding of the metropolis. *Quarterly Journal of Economics* 40 (2,3), 179-208; 401-434.

Hall, Peter. 1996. *Cities of Tomorrow: an Intellectual History of Urban Planning and Design in the Twentieth Century.* Cambridge, Blackwell Publishers, Inc.

Hall, Peter. 1998a. *Cities in Civilization.* New York, Pantheon Books.

Hall, Peter. 1998b. "Tomorrow" for today. *Town and Country Planning Special Supplement:100 Years of "Tomorrow".* London, Town and Country Planning Association.

Hanchett, Thomas W. 1996. Roots of the "renaissance": Federal incentives to urban planning, 1943-1948. In *Planning the Twentieth-Century American City,* edited by Mary Corbin Sies and Christopher Silver. Baltimore, John Hopkins Univesity Press.

Hare, Timothy George. 1994. *Decentralization of American Cities: Four Case Studies.* Thesis. East Stroudsburg University, Pennsylvania.

Harris, Richard and Robert Lewis. 1998. How the past matters: North American cities in the twentieth century. *Journal of Urban Affairs* 20 (2), 159-175.

Harrison, Helen A., ed. 1980. *Dawn of a New Day: the New York World's Fair, 1939/40.* New York, New York University Press.

Harvey, David. 1973. *Social Justice and the City.* Baltimore, John Hopkins University Press.

Hauser, Francis L. 1953. Review of "The Future of cities and urban redevelopment and urban redevelopment problems and practices" by Coleman Woodbury, ed. *Journal of the American Institute of Planners* (Summer), 176-179.

Hauser, Philip M. and Otis Dudley Duncan, eds. 1959. *Study of Population: an Inventory and Appraisal.* Chicago, The University of Chcago Press.

Hawley, Amos Henry. 1950. *Human Ecology: a Theory of Community Structure.* New York : Ronald Press Co.

Healey, Patsy. 1997. *Collaborative Planning: Shaping Places in Fragmented Societies.* Vancouver, University of British Columbia Press.

Hearn, Greg, Tom Mandeville and David Anthony. 1998. *The Communication Superhighway: Social and Economic Change in the Digital Age.* St Leonards, N.S.W. : Allen & Unwin.

Hebbert, Michael. 1998. "Tomorrow never came – or did it? *Town and Country Planning Special Supplement:100 Years of "Tomorrow"*. London, Town and Country Planning Association.

Henriksen, Margot A. 1997. *Dr. Strangelove's America: Society and Culture in the Atomic Age*. Berkeley, University of California Press.

Hersey, John. 1946. *Hiroshima*. New York, A.A. Knopf.

Hill, John W. 1965. *City Halls and Emergency Operating Centers*. Washington, Office of Civil Defense.

Hoover, Edgar M. and Raymond Vernon. 1959. *Anatomy of a Metropolis: the Changing Distribution of People and Jobs in the New York Metropolitan Region*. Cambridge, Harvard University Press.

Horowitz, David, ed. 1969. *Corporations and the Cold War*. New York, Monthly Review Press.

Hough, Michael. 1995. *Cities and Natural Processes*. London, Routledge.

Howard, Ebenezer. 1996. The town-country magnet. In *The City Reader*, edited by Richard T. LeGates and Frederic Stout. New York, Routledge.

Howard, John T. 1957. Impact of the federal highway program. *Selected Papers from the National Planning Conference, San Francisco California, March 17th –21st 1957*. Chicago, American Society of Planning Officials.

Innes, Judith E. 1995. Planning theory's emerging paradigm: communicative action and interactive practice. *The Journal of Planning Education and Research* 14,3: 183-9.

Innes, Judith E. 1998. Information in communicative planning. *Journal of the American Planning Association* 64 (1) 52-63.

Irvine, E. Eastman, ed. 1949. *World Almanac*. New York, World Telegram.

Jackson, Kenneth T. 1985. *Crabgrass Frontier: the Suburbanization of the United States*. New York, Oxford University Press.

Jacobs, Jane. 1961. *The Death and Life of Great American Cities*. New York, Vintage Books.

Joint Committee on the Economic Report [JCER]. 1951. *The Need for Industrial Dispersal*. Washington D.C., United States Government Printing Office.

Kay, Jane Holtz. 1997. *Asphalt Nation: How the Automobile Took over America and How We Can Take it Back*. New York, Crown Publishers, Inc.

Kelly, Burnham. 1953. The necessity for dispersal. *Journal of the American Institute of Planners* (Winter), 20-25.

Kirby, Andrew, ed. 1992. *The Pentagon and the Cities.* Volume 40, Urban Affairs Annual Reviews. Newbury Park, CA, Sage Publications.

Klaber, Eugene H. 1951. Should urban redevelopment go forward now?...yes. *Progressive Architecture* (September), 73-152+.

Kleniewski, Nancy. 1984. From industrial to corporate city: the role of urban renewal. In *Marxism and the Metropolis: New Perspectives in Urban Political Economy*, edited by William K Tabb and Larry Sawers. New York, Oxford University Press.

Kleniewski, Nancy. 1994. Views of the city: urban and regional sociology. In *From the Left Bank to the Mainstream: Historical Debates and Research in Marxist Sociology*, edited by Patrick McGuire and Donald McQuarie. Dix Hills, NY, General Hall, Inc.

Korten, David C. 1998. *The Post-Corporate World: Life After Capitalism.* San Francisco: Berret-Koehler Publishers, Inc.; West Hartford, CT: Kumarian Press, Inc.

Krieger, Leonard. 1989. *Time's Reason: Philosophies of History Old and New.* Chicago, University of Chicago Press.

Kunstler, James Howard. 1993. *Geography of Nowhere: The Rise and Decline of America's Man-Made Landscape.* New York, Simon and Schuster.

Kunstler, James Howard. 1996. *Home From Nowhere: Remaking Our Everyday World for the Twenty-First Century.* New York, Simon and Schuster.

Kyle, David. 1976. *A Pictorial History of Science Fiction.* Toronto, Hamlyn Publishing Group Limited.

Lake, Robert W., ed. 1983. *Readings in Urban Analysis: Perspectives on Urban Form and Structure.* New Brunswick N.J., Rutgers University Center for Urban Policy Research.

Lake, Robert W., ed. 1997. *Resolving Locational Conflict.* New Brunswick, NJ, Rutgers University Center for Urban Policy Research.

Lamarche, Francois. 1976. Property development and the economic foundation of the urban question. In *Urban Sociology: Critical Essays*, edited by C.G. Pickvance. London, Methuen & Co.

Lanouette, William. 1998. Three attempts to stop the bomb. In *Hiroshima's Shadow*, edited by Kai Bird and Lawrence Lifschultz. Stony Creek, CT, Pamphleteer's Press.

Lapp, R.E. 1949. *Must We Hide?* Cambridge Mass., Addison-Wesley Press, Inc.

Lapp, Dr. Ralph E. 1951. Does safety lie in dispersal?...yes. *Progressive Architecture* (September), 75.

Lapp, Dr. Ralph E. 1953. Eight years later. *Bulletin of the Atomic Scientists* 9 (7), 234-236.

Leaning, Jennifer and Langley Keyes. 1984. *The Counterfeit Ark: Crisis Relocation for Nuclear War*. Cambridge Mass., Ballinger Publishing Company.

Lefebvre, Henri. 1996. *Writings on Cities*, edited by Eleanore Kofman and Elizabeth Lebas. Oxford, Blackwell publishers.

LeGates Richard T. and Frederic Stout, eds. 1997. *The City Reader*. London: Routledge.

Levin, Earl A. 1984. *City Planning as Utopian Ideology and City Government Function*. Winnipeg, Institute of Urban Studies, University of Winnipeg. Research and Working Paper no. 10.

Lewis, Tom. 1997. *Divided Highways: Building the Interstate Highways, Transforming American Life*. New York, Viking.

Ley, David and John Mercer. 1983. Locational conflict and the politics of consumption. In *Readings in Urban Analysis: Perspectives on Urban Form and Structure*, edited by Robert Lake. New Brunswick, New Jersey, Rutgers State University Center for Urban Policy Research.

Ley, David. 1983. *A Social Geography of the City*. New York, Harper & Row, Publishers.

Lifton, Robert Jay and Greg Mitchell. 1995. *Hiroshima in America, Fifty Years of Denial*. New York, G.P. Putnam's Sons.

Lifton, Robert Jay and Richard Falk. 1982. *Indefensible Weapons, The Political and Psychological Case Against Nuclearism*. New York, Basic Books, Inc.

Lippard, Lucy R. 1997. *The Lure of the Local: Sense of Place in a Multicentred Society*. New York, NY, The New Press.

Livingston, Goodhue, Jr. 1951. The blight of our cities. *Bulletin of the Atomic Scientists* 7 (9), 260-262.

Logan, John R. and Harvey L. Molotch. 1987. *Urban Fortunes: A Political Economy of Place*. Berkeley, University of California Press.

McCarthy, Mary. 1998. The "Hiroshima" New Yorker. In *Hiroshima's Shadow*, edited by Kai Bird and Lawrence Lifschultz. Stony Creek CT., Pamphleteer's Press.

McEnaney, Laura. 2000. *Civil Defense Begins at Home: Militarization Meets Everyday Life in the Fifties*. Princeton, Princeton University Press.

McGuire, Patrick and Donald McQuarie, eds. 1994. *From the Left Bank to the Mainstream: Historical Debates and Research in Marxist Sociology*. Dix Hills, NY, General Hall, Inc.

McLean, Joseph E. 1953. Project East River, survival in the atomic age. *Bulletin of the Atomic Scientists* 9 (7), 247-252+.

Mackenzie, Debora. 2000. Burrowing bombs could nuke dictators. *New Scientist* 2259 (October), 6.

MacLear, Kyo. 1999. *Beclouded Visions: Hiroshima-Nagasaki and the Art of Witness*. Albany, State University of New York Press.

Maddox, Robert James. 1995. *Weapons for Victory: The Hiroshima Decision Fifty Years Later*. Columbia, University of Missouri Press.

Maines, David R. and Bridger, Jeffrey C. 1996. Mythic facts and Park's pragmatism: On predecessor-selection and theorizing in human ecology. *Sociological Quarterly*. 37 (3), 521-550, in Academic Search Elite [database on-line]; http://www.epnet.com/ehost/login.html. (Boston, MA.: EBSCO Publishing, accessed 19 November 2000).

Mandelbaum, Seymour J. 1985. Historians and planners: the construction of pasts and futures. *Journal of the American Planning Association* 51 (2), 185-188.

Mander, Jerry and Edward Goldsmith, eds. 1996. *The Case Against the Global Economy and for a Turn Toward the Local*. San Francisco, Sierra Club Books.

Markusen Ann, Scott Campbell, Peter Hall and Sabina Deitrick. 1991. *The Rise of the Gunbelt: the Military Remapping of Industrial America*. New York, Oxford University Press.

Markusen, Ann R. and Joel Yudken. 1992. *Dismantling the Cold War Economy*. n.p., Basic Books.

Marwick, Arthur. 1989. *The Nature of History*. 3rd Edition. London, Macmillan Press.

May, Elaine Tyler. 1988. *Homeward Bound: American Families in the Cold War Era*. n.p., Basic Books.

Mayer, Albert. 1951. Is there any defense from the bomb?...Yes. *Progressive Architecture* (September), 80.

Melman, Seymour. 1970. *Pentagon Capitalism: the Political Economy of War*. New York, McGraw-Hill Book Company.

Melman, Seymour, ed. 1971. *The War Economy of the United States: Readings on Military Industry and Economy*. New York, St. Martins Press.

Merton, Robert K. 1976. The Sociology of knowledge. In *Sociology of Knowledge*, edited by Kewal Motwani. Bombay, Somaiya Publications.

Merriam, Robert E. 1951. Cities are here to stay. *Bulletin of the Atomic Scientists* 7 (9), 251-260.

Miller, Donald L. ed. 1986. *Lewis Mumford Reader*. New York, Pantheon Books.

Miller, Richard L. 1986. *Under the Cloud: the Decades of Nuclear Testing.* New York, The Free Press.

Mills, C. Wright. 1959. *The Sociological Imagination.* New York, Oxford University Press.

Mitchell, Greg. 1995. A Hole in history. *Progressive* 59 (8), 22-7, in Academic Search Elite [database on-line]; http://www.epnet.com/ehost/login.html. (Boston, MA.: EBSCO Publishing, accessed 19 November 2000).

Mitchell, William J. 1997. *City of Bits: Space, Place and the Infobahn.* Cambridge, the MIT Press.

Molotch, Harvey. 1976. The City as growth machine: toward a political economy of place. *American Journal of Sociology* 82: 309-333.

Molotch, Harvey. 1983. Toward a more human human ecology. In *Readings in Urban Analysis: Perspectives on Urban Form and Structure,* edited by Robert W. Lake. New Brunswick N.J., Rutgers University Center for Urban Policy Research.

Monson, Donald and Astrid. 1950. How can we disperse our large cities? Part I. *American City* 65 (12), 90-92.

Monson, Donald and Astrid. 1951b. A program for urban dispersal. *Bulletin of the Atomic Scientists* 7 (9), 244-250.

Monson, Donald and Astrid.1951c. How can we disperse our large cities? Part II *American City* 66 (1), 107-111.

Monson, Donald. 1951a. Should urban redevelopment go forward now?...no. *Progressive Architecture* (September), 73.

Monson, Donald. 1953. City planning in east river. *Bulletin of the Atomic Scientists* 9 (7), 265-267.

Monson, Donald. 1954. Is dispersal obsolete? *Bulletin of the Atomic Scientists* 10 (10), 378-383.

Moore Milroy, B. 1990. Into postmodern weightlessness. 1991. *Journal of Planning Education and Research* 10 (3), 181-187.

Motwani, Kewal, ed. 1976. *Sociology of Knowledge.* Bombay, Somaiya Publications.

Mumford, Lewis. 1961. *The City in History: its Origins, its Transformations and its Prospects.* New York, Harcourt, Brace Jovanovich.

Mumford, Lewis. 1938. *The Culture of Cities.* New York, Harcourt, Brace & World, Inc.

Mumford, Lewis. 1998. Gentlemen: You are mad! In *Hiroshima's Shadow,* edited by Kai Bird and Lawrence Lifschultz. Stony Creek, CT, Pamphleteer's Press.

Mumford, Lewis. 1947. Social effects. *Air Affairs* (March), 370-382.

National Academy of Sciences-National Research Council. 1962. *Design for the Nuclear Age*. Washington, National Academy of Sciences--National Research Council.

National Security Council. 2000. National Security Council Website [database online] Available http://www2.whitehouse.gov/WH/EOP/NSC/html/NSChistory#history (accessed 19 November 2000).

National Security Resources Board. Industrial dispersion as a national policy. *Bulletin of the Atomic Scientists* 7 (9), 265-269.

Nelson, Herbert U. 1950. Real estate and the atom bomb. *Air Affairs* 3 (2), 364-372.

Nelson, General Otto L. 1953. Planning cities in an atomic era. *Proceedings of the Annual National Planning Conference, Detroit Michigan, October 11-15* 1953. Chicago, American Society of Planning Officials.

Nelson, Richard. 1997. How new is new growth theory? *Challenge*. 40 (5), 29-59.

Newman, Oscar. 1972. *Defensible Space*. New York, MacMillan.

Norton, C. McKim. 1953a. Report on Project East River, part I. *Journal of the American Institute of Planners* (Spring), 87-94.

Norton, C. McKim. 1953b. Report on Project East River, part II, development of standards. *Journal of the American Institute of Planners* (Summer), 159-167.

Pahl, Ray E. 1983. Urban Social Theory and Research. In *Readings in Urban Analysis: Perspectives on Urban Form and Structure*, edited by Robert W. Lake. New Brunswick N.J., Rutgers University Center for Urban Policy Research.

Palen, John J. 1995. *The Suburbs*. New York, McGraw Hill.

Park, Robert Ezra. 1936. Human ecology. *The American Journal of Sociology* 42 (1), 1-15.

Parkman, Henry. 1953. Nonmilitary measures of national defense. *Bulletin of the Atomic Scientists* 9 (7), 259-260+.

Parsons, K.C. 1989. Shaping the regional city: 1950-1990: the plans of Tracy Augur and Clarence Stein for dispersing federal workers from Washington D.C. *The Third National Congress on American Planning History, Cincinnati Ohio, 30 November-2 December 1989*, 649-690. The Society for American City and Regional Planning History.

Pearson, Norman. 1957. Review of *A Guide to Urban Dispersal*, by the Committee on Physical Planning, McGill University. In *Community Planning Review* 7 (2), 100-103.

Pennsylvania State University. Department of Architectural Engineering. 1968. *Design Modification Studies*. Washington, Office of Civil Defense.

Perlman, Michael. 1988. *Imaginal Memory and the Place of Hiroshima.* New York, SUNY.

Pickvance, C.G. 1984. The Structuralist critique in urban studies. In *Cities in Transformation*, edited by M.P. Smith. Beverley Hills, CA, Sage.

Pickvance, C.G., ed. 1976. *Urban Sociology: Critical Essays.* London, Methuen & Co.

Platt, William. 1953. Industrial defense, a community approach. *Bulletin of the Atomic Scientists* 9 (7), 261-264.

Prentiss, Augustin Mitchell. 1941. *Civil Air Defense.* New York, London, Whittlesey House, McGraw-Hill Book Co. Inc.

Rabinowitch, E. 1951. The Only defense, editorial. *Bulletin of the Atomic Scientists* 7 (9), 242-243.

Rafferty, Kevin, Jayne Loader and Pierce Rafferty. 1982. *The Atomic Café.* Produced and Directed by Kevin Rafferty, Jayne Loader and Pierce Rafferty. 88 min., Archives Project. Videocassette.

Reade, E. 1985. An Analysis of the use of the concept of rationality in the literature of planning. In *Rationality in Planning: Critical Essays on the Role of Rationality in Urban and Regional Planning*, edited by M. Breheny and A. Hooper. London, Pion Limited.

Rhodes, Richard. 1986. *The Making of the Atomic Bomb.* New York, Simon and Schuster.

Rittel, H., and Melvin Webber. 1973. Dilemmas in a general theory of planning. *Policy Sciences* 4 (2), 155-69.

Roseland, Mark. 1998. *Toward Sustainable Communities: Resources for Citizens and Their Governments.* Gabriola Island, B.C., New Society Publishers.

Roweis, S.T., and A.J. Scott. 1976. *The Urban Land Question.* Toronto: Department of Urban and Regional Planning.

Royal Architectural Institute of Canada. 1942. *Journal (special issue on Civil Defence)* 19(5).

St. Clair, David J. 1986. *The Motorization of American Cities.* New York, Praeger Publishers.

Sale, Kirkpatrick. 1975. *Powershift: the Rise of the Southern Rim and its Challenge to the Eastern Establishment.* New York, Random.

Salus, Peter H. 1995. *Casting the Net from ARPANET to INTERNET and Beyond.* Reading, Mass., Addison-Wesley Pub. Co.

Sandercock, Leoni. 1998. *Towards Cosmopolis: Planning for Multicultural Cities.* Toronto, John Wiley and Sons.

Sawers, Larry. 1984. The Political economy of urban transportation: an interpretive essay. In *Marxism and the Metropolis: New Perspectives in Urban Political Economy*, edited by William K Tabb and Larry Sawers. New York, Oxford University Press.

Schell, Jonathan. 1999. The unfinished twentieth century: what we have forgotten about nuclear weapons. *Harpers* 300 (1796), 41-56.

Schön, Donald A. 1984. Faith in the rational leap: social science research and crisis relocation planning. In *The Counterfeit Ark: Crisis relocation for Nuclear War*, edited by Jennifer Leaning and Langley Keyes. Cambridge Mass., Ballinger Publishing Company.

Schwab, William A. 1982. *Urban Sociology: a Human Ecological Perspective*. London: Addison-Wesley Publishing Company.

Scott, James. C. 1998. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven, Yale University Press.

Scott, Mel. 1969. *American City Planning Since 1890*. Berkeley, University of California Press.

Shafer, Robert ed. c1980. *A Guide to Historical Method* 3rd ed. Homewood, Ill., Dorsey Press.

Shils, E. 1991. Robert E. Park 1864-1944. *American Scholar*. 60 (1), 120-8, in Academic Search Elite [database on-line]; http://www.epnet.com/ehost/login.html. (Boston, MA.: EBSCO Publishing, accessed 19 November 2000).

Sies, Mary Corbin and Christopher Silver, eds. 1996. *Planning the Twentieth-Century City*. Baltimore, The John Hopkins University Press.

Simonds, A.P. 1978. *Karl Mannheim's Sociology of Knowledge*. Oxford, Clarendon Press.

Smith, Adam. 1976. *An Inquiry into the Nature and Causes of the Wealth of Nations*, edited by R.H. Campbell and A.S. Skinner. Oxford, Clarendon Press.

Smith, David A. 1995. The new urban sociology meets the old, rereading some classical human ecology. *Urban Affairs Review* 3 (January), 432-458, in Academic Search Elite [database on-line]; http://www.epnet.com/ehost/login.html. (Boston, MA.: EBSCO Publishing, accessed 19 November 2000).

Sogg, Wilton S. and Warren Wertheimer. 1966. Legal and governmental issues in urban renewal. In *Urban Renewal: the Record and the Controversy* edited by James Q. Wilson. Cambridge Mass., MIT press.

Spain, Daphne. 1993. Been-heres versus come-heres, negotiating conflicting community identities. *Journal of the American Planning Association* 59 (2), 156-172, in Academic Search Elite [database on-line]; http://www.epnet.com/ehost/login.html. (Boston, MA.: EBSCO Publishing, accessed 19 November 2000).

Spirn, Anne Whiston. 1984. *The Granite Garden: Urban Nature and Human Design.* n.p., Basic Books.

Stein, Clarence, Benton MacKaye, Lewis Mumford, Catherine Bauer, Hugh Pomeroy and Albert Mayer. 1951. Dispersal for productive defence. *Town and Country Planning* (July), 304-309.

Stein, Clarence S. 1951. Do new towns provide safety?...yes. *Progressive Architecture* (September), 77.

Stimson, Henry L. 1947. The Decision to use the atomic bomb. *Harpers* (February) 97-107.

Stone, I.F. 1963. *The Haunted Fifties.* New York, Vintage Books.

Sugrue, Thomas J. 1996. More than skin deep. *Journal of Urban History* 22 (6), 750-760, in Academic Search Elite [database on-line]; http://www.epnet.com/ehost/login.html. (Boston, MA.: EBSCO Publishing, accessed 19 November 2000).

Summers, Gene F., Sharon D. Evans, Frank Clements, E.M. Beck and Jon Minkoff. 1976. *Industrial Invasion of Nonmetropolitan America: a Quarter Century of Experience.* New York, Praeger Publishers.

Tabb, William K. and Larry Sawers, eds. 1984. *Marxism and the Metropolis: New Perspectives in Urban Political Economy.* 2nd ed. New York, Oxford University Press.

Taylor, Nigel. 1999. Anglo-American town planning theory since 1945: three significant developments but no paradigm shifts. *Planning Perspectives* 14 (1999), 327-345.

Thabit, Walter. 1959. Planning and civil defense. *Journal of the American Institute of Planners* 25 (1), 35-39.

Theodorson, George, ed. 1982. *Urban Patterns: Studies in Human ecology.* University Park : Pennsylvania State University Press.

Truman, President Harry S. 1951. National dispersal program forecast by presidential statement. *Bulletin of the Atomic Scientists* 7 (9), 263.

Tuchman, Barbara W. 1978. *A Distant Mirror: the Calamitous 14th Century.* New York, Ballantine Books.

Tyrwhitt, Jaqueline. 1951. Do new towns provide safety?...no. *Progressive Architecture* (September), 77.

United States. Business and Defense Services Administration. 1968. *Preparedness in the Chemical and Allied Industries: an Industrial Civil Defense Handbook.* Washington, For sale by the Supt. of Docs., U.S. Govt. Print. Off.

United States. Dept. of Housing and Urban Development. 1970. *Housing with Shelter: Dual Purpose Residential Fallout Shelter Protection*. Washington; For sale by the Supt. of Docs., U.S. Govt. Print. Off.

United States. Office of Civil and Defense Mobilization. 1959. *The Family Fallout Shelter*. Washington D.C.

University of Chicago Press. 1993. *The Chicago Manual of Style*. Chicago, University of Chicago Press.

Walker, Mabel. 1957. *Business Enterprise and the City*. Princeton, Tax Institute.

Walker, Richard A. 1978. The Transformation of urban structure in the nineteenth century and the beginnings of suburbanization. In *Urbanization and Conflict in Market Societies*, edited by Kevin R. Cox. Chicago, Maaroufa Press.

Walter, Uwe-Jens. 1982. The Making of a new urban sociology: Castells in context. In *Urban Political Economy and Social Theory*, edited by Ray Forrest, Jeff Henderson and Peter Williams. Hampshire, England, Gower Publishing Company.

Weart, Spencer R. 1988. *Nuclear Fear, A History of Images*. Cambridge, Harvard University Press.

Weaver, C., J. Jessop and V. Das. 1985. Rationality in the public interest, notes towards a new synthesis. In *Rationality in Planning, Critical Essays on the Role of Rationality in Urban and Regional Planning*, edited by M. Breheny and A. Hooper. London, Pion Limited.

Wheaton, William L.C. 1951. Federal action toward a national dispersal policy. *Bulletin of the Atomic Scientists* 7 (9), 271-275.

Wigton, C. Benson. 1953. Is your city a target? *American City* 68 (2), 159-161.

Wilber, Ken. 2000. *A Theory of Everything: an Integral Vision for Business, Politics, Science and Spirituality*. Boston Mass., Shambhala Publications.

Wilson, James Q, ed. 1966. *Urban Renewal: The Record and the Controversy*. London, Massachusetts Institute of Technology Press.

Windels, Paul. 1950. How should our cities grow? *Town and Country Planning* 18 (September), 362-370.

Woodbury, Coleman. 1953. Security considerations in industrial development. In *The Future of Cities and Urban Redevelopment: Urban redevelopment Study Vol. 2*, edited by Coleman Woodbury. Chicago, University of Chicago Press.

Wright, Frank Lloyd. 1935. Broadacre City: a new community plan. *Architectural Record* 77 (April 1935): 243-254.

Wylie, Philip. 1954. Panic, psychology and the bomb. *Bulletin of the Atomic Scientists* 10 (2), 37-40, 63.

Yago, Glenn. 1984. *Decline of Transit: Urban Transport in German and U.S. Cities, 1900-1970.* New York, Cambridge University Press.

Yeates, Maurice and Barry Garner. 1980. *The North American City.* New York, Harper and Row, Publishers.

Zhang, Wei-Bin. 1993. Rent and residential distribution in a two-group neo-classical growth model. *Economic Systems Research* 5 (4), 395-409, in Academic Search Elite [database on-line]; http://www.epnet.com/ehost/login.html. (Boston, MA.: EBSCO Publishing, accessed 19 November 2000).