

# Novel Landscapes: Geographies of a Future North America

*Lisa Kadonaga*  
Department of Geography  
University of Victoria, Victoria, BC

*Science fiction and speculative fantasy are frequently set in altered versions of real present-day landscapes. These fictional worlds reflect popular concerns about technology, social problems, and environmental change. As such, they have many features in common with scientific scenarios developed to examine the impacts of resource depletion, economic restructuring, climate warming, or armed conflict. For this reason, the issues faced by writers and readers of this genre have more to do with the geographic disciplines than might initially be suspected. Works by several 20th century authors are explored, and classified into three main groups based on the degree of cultural and physical change displayed by their settings.*

## Introduction

Literary and cultural geographers have interpreted real landscapes, described by novelists ranging from Thomas Hardy (Barrell 1982) to John le Carré (Monaghan 1987, Hamilton 1991). In the past few decades, researchers have begun to apply the same methods to fictional landscapes (e.g. Elbow and Martinson 1980). The appeal of imaginary worlds is strong, and the vigorous expansion of science fiction and speculative fantasy has been one of the most remarkable characteristics of the 20th century. A hundred years ago, H.G. Wells and Jules Verne were creating some of the landmark novels of the genre. As the century ends, many of their visions have come true: powered flight, nuclear submarines, and space exploration. Today's authors are writing about artificial intelligence, biological engineering, extraterrestrial life, and the colonization of other planets—not just in books but through new media such as films, television, and most recently, computer games.

As writers explore new ideas and problems, they also seek “novel settings” freed from present day social and technological constraints. They may create entirely fictional worlds, or set their stories in real places, in the near or distant future. At the same time, these works reflect society, and also have the potential to influence it. By now, speculative fiction has become part of popular culture, to the extent that it is unusual for a new scientific discovery or social trend to be announced without someone claiming it had been anticipated by an earlier book or film. The last few decades are replete with examples, ranging from the “soma” tranquilizing drug of *Brave New World*, to the Orwellian television set that monitors its viewers, to the extraction of dinosaur DNA from fossilized amber (as described in *Jurassic Park*).

Other regions have experienced rapid cultural, political, and economic change this century, but North America’s transformation has been astonishing even in the global context. Within a single human lifetime, millions of immigrants have altered the ethnic composition of the continent, even as their descendents have begun to see themselves as no longer exclusively African, European, or Asian, but as something altogether new. The population base has shifted from rural to mainly urban, environments have come under increasing human influence (McCloskey and Spalding 1989), and economies have evolved from resource extraction to manufacturing, and now the provision of services and information. Centres of innovation have sprung up and flourished, like Hollywood for the entertainment industry, and Silicon Valley for computing and electronics. It seems appropriate that our continent has become the focus for many speculative novels set in the next millenium and beyond.

Some of the most popular science fiction scenarios involve catastrophic events such as social collapse, nuclear war, and climate change. These are the same phenomena which are being researched by physical and social scientists. In recent years much effort has been devoted to forecasting, as researchers attempt to extract human stories from raw numbers. For global warming, in particular, there has been a movement to develop projections for specific regions and sectors of the economy.

However, no matter how sophisticated these computer models are, their credibility is determined by how much is already known about the system, and the types of assumptions being made. Different models project a wide range of possible values for precipitation changes under a doubling of atmospheric carbon dioxide (Mitchell et al. 1990), and logically they cannot all be correct. In comparison, fiction writers use scientific guesses, personal experiences, and in-

tuition to develop their scenarios. Some of these techniques could be equally valid, given the high degree of uncertainty associated with many forecasts.

### Classification of Scenarios

Future scenarios may be classified by two variables, retention and recognition. For these purposes, retention is defined as how much information the characters or institutions in the story have about historical events. A high degree of retention for a particular scenario signifies that all or most of human knowledge at the time the book was written remains intact. In contrast, the recognition factor is external to the story. It is a measure of what the reader finds familiar in the setting—landscapes, structures, or artifacts—even if the characters do not know the true origin and history of these things. Both of these variables are negatively correlated with time, so the more distant the scenario, the lower the retention and recognition factors tend to be.

Ever since the invention of media which are capable of generating multiple copies, we have taken comfort from the assumption that hard-won knowledge is now secure for generations to come. Beginning with the printing press, and continuing with the computer disk drive and CD-ROM, societies are no longer dependent on single parchments or on the fallible memories of individual humans. Books have become our elders. The destruction of the original Declaration of Independence would be a misfortune, yet its continued existence in the form of thousands of copies ensures that its text will live on. In today's paper glut, someone must have a copy stashed away somewhere.

Despite such technological advances, knowledge can still be lost in a relatively short time. Sources may be deliberately vandalized because of political or religious repression, or inadvertently lost in the confusion when social organization breaks down due to armed conflict, epidemics, or economic collapse. Most western industrialized nations have not seen these kinds of widespread disturbances since the Second World War, fifty years ago, but others have. Worldwide, many ethnic minorities are experiencing rapid and irreversible losses in traditional knowledge, as languages and traditions are no longer being passed along to younger generations. This trend is particularly evident among aboriginal cultures, when relatively small populations may be overwhelmed by more powerful groups.

Curiously, even writers depicting advanced, peaceful societies assume that the loss of some knowledge is inevitable, despite im-

provements in data storage. This might be due to the disappearance of unused skills, such as the construction of certain types of buildings (Kotani and Roberts 1990), or the failure of some records to be transferred into newer formats as technology changes (Fulford 1994).

A longer time is required for a setting to lose its recognition factor for us as spectators. Barring widespread disturbances like glaciation, it takes thousands of years for geological processes to erase human modification of the landscape. Ruins of cities many centuries old can still be distinguished from the surrounding countryside, due to anomalies in vegetation cover or drainage patterns. Natural features such as rivers, lakes, and waterfalls can endure for tens of millennia, while mountain ranges can withstand erosion for millions of years.

Based on degrees of retention and recognition, I have identified three main groupings based on a sampling of future scenarios, written by various authors during the past few decades.

## Type I

Type I scenarios are characterized by high degrees of both retention and recognition. Generally they are set in the near future, only a few generations removed from the present. Although the political situation may be different, landscapes and place names are intact. Many things are still recognizable, and cultural and political transformations are more prominent in the story than physical change. In fact, novels fitting this description are closer to social commentary than pure fantasy (e.g. Huxley's *Brave New World*, 1932; Orwell's *1984*, 1949), and may be written by established science fiction authors like Ray Bradbury (*Fahrenheit 451*, 1953) or by mainstream writers like Margaret Atwood (*The Handmaid's Tale*, 1985) and P.D. James (*The Children of Men*, 1993).

Early Type I settings often depicted utopias (a term originated by Sir Thomas More's 1516 book of that name), near-perfect societies created by judicious application of morality, science, and rational planning. In this century, particularly since the 1960's, stories have portrayed frightening or unpleasant dystopias far more frequently than utopias. (Perhaps people are becoming cynical about the attainability of such a lofty goal, or else bad places provide more fascinating plot complications.) Often these scenarios were developed by extrapolating trends perceived by the writers: totalitarianism, urban decay, human infertility, ecological collapse, social unrest, racism, or the spread of disease. Most recently, contributors such as

William Gibson and Bruce Sterling have explored the realm of information technology and computer networks.

## Type II

The next category consists of scenarios which have undergone noticeable changes in the physical environment, especially climate. While retention remains moderate to high, recognition is only moderate, due to glaciation, desertification, or changes in natural vegetation and land use. An example of this is Colleen McCullough's *A Creed for the Third Millennium* (1985), which takes place after residents of Canada and the border states have been evacuated to escape the onset of a new ice age. Orson Scott Card's collection of short stories, *Folk of the Fringe* (1989), is a meticulous description of an attempt by Mormons to colonize the Great Basin deserts, made habitable by shifts in rainfall patterns.

Until the late 1980's, many climate change stories assumed global cooling (Silverberg 1964, Hughes 1982, McCullough 1985). Allowing for time lags in writing and publication, this coincides with a period in the 1960's and 1970's when scientific and media reports predicted cooler conditions and more severe winters. Although the possibility of an enhanced greenhouse effect was known to researchers, opposing factors such as particulate emissions, aircraft vapour trails, and the widespread alteration of surface reflectivity were thought to be more immediate (*Time Magazine* 1974). The cold winters of the 1970's (Gullett and Skinner 1992) probably contributed to this line of thinking, just as the unusually hot summers of the 1980's drew popular attention to global warming theories.

## Type III

Type III scenarios are characterized by even more severe changes, usually for the worse, in the physical environment. The causes can be natural (glaciation, flooding, earthquakes) or anthropogenic (pollution or warfare), but in any case major disruptions may have resulted in the abandonment of some settlements and the building of new ones. Recognition is moderate to low: although major rivers and mountain ranges survive, coastlines and drainage systems may be considerably different from today. The only hard evidence of our civilization may be the ruins of large, durable structures like roads, airports, and hydroelectric dams. Generally, the elapsed time since the present is considerably greater than for Type II scenarios, a millennium or more. Among surviving human cultures, the retention

factor tends to be low, due to the loss or corruption of present-day knowledge. The classic H.G. Wells novel *The Time Machine* (1895), set in England's distant future, is an extreme example. Other scenarios retain sacred texts like the Bible, distorted fragments of popular songs, and the names of cities and historical figures (Wyndham 1955, Moorcock 1968, Tilley 1983).

An additional category, Type IV, includes novels which are so far removed from the present that they could just as easily take place on another planet or in the remote past without affecting the story. These "technomagic" fantasies drop vague hints that they are occurring in the future of our own world, but without identifiable topography, artifacts, or place names, it is impossible to locate them more precisely. Contemporary examples are the settings created by Brooks (1977) and Weis and Hickman (1990).

### **Selected Type III Novels—A Geographical Perspective**

Comparing a number of scenarios which fit the Type III category, there are some broad similarities in their visions of a future North America. Nearly all of the books surveyed describe dangerous areas which are effectively off limits. These have become barriers to migration, invasion, and trade. After centuries of isolation, surviving populations have developed into diverse new cultures. Along with this social differentiation, mutations induced by radioactive fallout or genetic experimentation have evolved into new races. Major geological features such as the Rocky Mountains and Mississippi River have endured, while names of cities and larger jurisdictions may be distorted but still recognizable. The minimum time period necessary to effect these changes has been estimated by various authors as a thousand years (Weinbaum 1948, Moorcock 1968, Tilley 1983, Roberts 1990). In reality it would take orders of magnitude longer, even with higher rates of mutation.

In many of the books, writers distinguish between places that are inimical to life (due to radiation, toxic chemicals, or pathogens) and places that have escaped contamination or outlasted it, but are inhabited by hostile people or predators. The locations of hazardous areas differ tremendously, depending on the author. There is a slight preference for indicating regions which today are highly populated (the eastern seaboard of the United States), or contain strategic military targets (Wyoming and Colorado). Tilley's scenario has virtually the entire aboveground environment radioactive, with only specially-adapted human populations experiencing normal lifespans.

The safe areas also exhibit a range of characteristics. Human cultures which have evolved there may be anarchistic, oppressive, pastoral, or more technologically advanced and socially enlightened than today. Safe areas fall into two main sub-categories: the safe-aberrant (non-toxic but still a danger to visitors because of lawlessness, intolerance, or local customs); and the true sanctuaries. There are many examples of the first category in the literature, from isolated settlements dominated by religious zealots who persecute "imperfect" humans (Wyndham 1955), to Moorcock's pirate culture of Narleen (formerly New Orleans), to sterile underground bases inhabited by descendents of military personnel (Tilley 1983). Much rarer are the true sanctuaries, safe from both contamination and attack, with conditions similar to the present, or better. Moorcock's supernatural city of Dnark (New York) is a calm and benign place, inhabited by spiritual beings. Wyndham chose to locate his technologically-advanced sanctuary not in North America but in New Zealand, believing that this location had a better chance of withstanding a nuclear conflagration.

Significantly, thermonuclear war is a recurring theme, even among technological optimists like *Star Trek* fans. Many episodes in Roddenberry's original television series, and subsequent spinoffs, have painted a rosy future where poverty and discrimination have been all but eliminated, and technology has opened up wondrous opportunities. Nevertheless, current *Star Trek* mythology insists that we must endure horrendous global conflicts in the coming centuries before we reach the world of captains Kirk and Picard. Why is there such a discrepancy?

Prior to the Manhattan Project, nuclear weapons were being discussed in scientific circles. Weinbaum, among others, had already predicted the use of "atomic bombs" in warfare (1936), and early newspaper accounts of the power of the Hiroshima blast were sufficient to alert pulp fiction readers that such a bomb had been developed, before this was public knowledge. By now, two or three generations of science fiction and fantasy writers have been influenced by the threat of nuclear annihilation. Those under fifty years of age have never known a time before the bomb.

Through the 1950's and 1960's, a growing number of people became alarmed about the effects of radiation. In part, this fostered a wave of activism that helped bring about the Atmospheric Test Ban Treaty (Barash 1987). Prominent scientists began to project a grim aftermath for human society following a nuclear war. Fiction writers started to incorporate these elements into works such as Shute's *On the Beach* (1957), which in turn stimulated more public

concern and scientific research. Anxiety peaked during the 1980's (Barash 1987), after the first papers on nuclear winter began to appear (Crutzen and Birks 1982). The sense of insecurity was compounded when earlier strategies of civil defence and bomb shelters were criticized as ineffectual or an outright sham.

Young people are major consumers of fantasy and science fiction, and during that uncertain period, many doubted they would survive to adulthood. Studies on the psychological impacts of the nuclear threat on children and adolescents were widely reported (Caldicott 1984). Yet there was also a persistent, and at times desperate, belief that a nuclear holocaust would not mean "the end" for humanity. Paradoxically, much of the fictional literature nurtured a deeper hope that cultural diversity, courage and idealism, and even romance would survive. A favourite theme of postapocalyptic films involves a small group of survivors, of different ages and social classes, banding together to reach a safe haven and start a new world. Even reprehensible characters like the outlaw biker in *Damnation Alley* are shown to be capable of altruistic behaviour under such circumstances (Zelazny 1969).

### **Relevance of Science Fiction to the Discipline**

For the most part, serious researchers have tended to avoid science fiction. On the occasions when professional scientists have contributed to the genre, some have used pen names to avoid being ridiculed by their colleagues. However, there appears to be increasing support for the use of science fiction as an aid to both teaching and research. The use of creative brainstorming techniques in class can encourage students to develop new ways to approach problems, add realism to social or environmental forecasts, and even lead to new questions which might not otherwise have been considered. Science fiction scenarios have the potential to interest students in many aspects of human and physical geography. The creation of new countries, mass migration, the abandonment of some settlements and the establishment of new ones, the abrupt transformation of grasslands into forests or deserts—these processes have shaped our world, and will continue in the future.

In addition to predicting the possible impacts of such occurrences as climate change and resource depletion (e.g. water and fisheries), researchers have begun to look at longer-term scenarios, such as the fate of nuclear waste depositories over the next ten thousand years. Until fairly recently, the engineers designing structures to store hazardous wastes did not examine the possibility that history could

repeat itself. In the distant future, these sites might actually attract people hunting for building materials or hidden treasure. Warning signs might be unreadable by that time, or dismissed as superstitious curses. A U.S. Department of Energy study carried out by the Sandia National Laboratories attempted to come up with alternative ways to discourage intruders (Erikson 1994). Remarkably, these arid-sounding government reports and academic papers are examples of an earlier style of science fiction. They return the genre to its speculative roots, rather than rehashing the plots of Westerns, war epics, and hard-boiled detective stories against a backdrop of lasers and spaceships.

### **Geography and the Future**

Why go to the trouble of crafting a future version of Earth when it might be easier to create an entirely fictional planet, with its own unique characteristics and problems? The reason could be that people are fascinated and a little frightened by the future of our world, even if it is sufficiently far away that they are unlikely to see it. The approach of the new millenium has contributed to the surge in public interest, and the popularity of works like the prophecies of Nostradamus and the Book of Revelations.

Geographers have also felt the need to take stock of human accomplishments, and contemplate what the future may hold for ourselves and our discipline. In a widely-used textbook, Haggett (1979) noted that although geographical research is disproportionately concerned with the past few decades, concern with the future is becoming more evident. Various techniques, from the empirical to the highly subjective, have been used to forecast what may happen to us and our environment within ten, fifty, or a hundred years.

Yet even with the huge amounts of information possessed by our society today, imagining what life might be like in longer spans of time is like "peering into a universe of darkness with a flashlight" (Erikson 1994). He adds, "What vocabulary can we draw on to speak sensibly of such a thing? What compass can we use to find our way in such a vastness?" In that sense, history and geography are the only tools available to us, to illuminate our path and show us where we are going. Geography itself has changed a lot since the origins of academia, more than twenty centuries ago, but it will remain a vital discipline as long as there are people drawing maps and wondering what lies beyond the horizon.

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