immediately outside our heads and continues to the visible horizon – in which the dialogue between mind and matter is expressed in the creation and re-arrangement of objects and environments. I can think of no place which is more worthy of our concern, for it is the one in which we are all born, live, work, love and die, in widely varying degrees of comfort and good fortune. It is, in every sense, where we live – and it behoves us to understand it.

In the absence of any notable recent progress to the stars, and as a function of a cyclical refocusing of its core concerns, modern science fiction can now be seen turning its attention once again to this closer space: the geographical space, the space of cities and landscapes, and the lives and relationships of the people within them. Perhaps then it is time for the traditional alliance between science fiction writers and the hard, physical scientists to be augmented and enriched with a further liaison, one between those who – through either invention or interpretation – are concerned with the human space in both its most general and specific senses. Just as the existing landscape records our past, these future worlds and environments are an expression of our internal present. The better our maps of these lands, whether real or virtual, the keener will be our understanding of who we are, where we are, and why.

1

LOST IN SPACE

James Kneale and Rob Kitchin

Are there geographies of science fiction? William Gibson, one of the best-known SF writers of recent years, seems to suggest not. His descriptions of cyberspace, the virtual information realm introduced in his first novel *Neuromancer*, place it in the 'nonspace of the mind' (1984: 67); in his third, *Mona Lisa Overdrive*, a character recalls '*There's no there, there.* They taught that to children, explaining cyberspace' (1989: 55, emphasis in original). This is, of course, an echo of the argument that computer-mediated communications have 'conquered' space (see Kitchin 1998). In his latest novel Gibson goes one further: 'He had been taught, of course, that history, along with geography, was dead' (Gibson 1999: 165).

What Gibson means, however, is that conventional senses of geography and history are 'dead' – geography as a jigsaw puzzle made up out of discrete, bounded spaces, and history as truth rather than narrative. He continues the quote above by concluding: 'History was plastic, was a matter of interpretation. The digital had not so much changed that as made it too obvious to ignore. History was stored data, subject to manipulation and interpretation' (p. 165). Gibson's sense of the importance of space is equally significant. In the San Francisco trilogy (*Virtual Light*, 1992; *Idoru*, 1996; *All Tomorrow's Parties*, 1999), the Bay Bridge is clearly offered as an iconic representation of post- (or late) modernity. The Bridge is home to those squeezed out of a near-future San Francisco dominated by libertarian capitalism, and has been transformed into a kind of squatter settlement, ramshackle shops and houses built around its structure and on top of each other. This space of bricoleurs seems to represent a positive interstice for survival in an otherwise hostile world. But, returning to the Bridge in *All Tomorrow's Parties*, it seems that even this space is not immune from the touch of global capital:

> And emerged again into that wet light, but here it ran not across the stalls and vendors of memory, but across the red-and-white front of a modular convenience store, chunked down front and center across the entrance to the bridge's two levels, LUCKY DRAGON and the shudder of video up across the trademark tower of screens.

'Fucking hell,' said Tessa, 'how interstitial is that?'
Chevette stopped, stunned. 'How could they do that?'
'It's what they do,' Tessa said. 'Prime location.'
'But it's like . . . like Nissan County or something.'
' "Gated attraction." The community's a tourist draw, right?'
'Lots of people won't go where there's no police.'
'Autonomous zones are their own draw,' Tessa said. 'This one's been here long enough to become the city's number-one postcard.'

(Gibson 1999: 67)

Apart from the irony of a Singaporean multinational colonizing a First World space, implying that globalization does not necessarily flow one way, Gibson's recognition of the attraction that 'autonomous zones' hold for tourists, gentrifiers and other travellers suggests that some kinds of science fiction are highly geographical in their concerns.

Not all science fictional geographies are, however, as concrete as Gibson's Bridge; the space in SF is just as likely to be a metaphorical one. In some ways this is inevitable, given some of the concerns of these fictions:

> References to borders and frontiers have always been the staple discourse of outer-space fiction. If fantasy is about being absent from home (the abandoned child or assertive voyager of the fairy tale, the science-fiction traveller or pioneer, and the inhabitant of the gothic mansion who finds her space invaded from within by the presence of the uncanny) then the inhabitant of the fantastic is always the stranger.
>
> (Armitt 1996: 8)

This book sets out to explore the potential of geographical readings of science fiction.

TEXTUAL GEOGRAPHIES

Over the last twenty years, as part of what has been described as a 'cultural turn' in the humanities and social sciences, geography has re-evaluated the importance of culture to its traditional concerns. Studies of the experience of place, representations of space, and issues of identity and cultural politics have gone hand in hand with a valuable re-theorizing of the nature of the discipline itself. Drawing upon a wide range of ideas – including poststructuralist and post-colonial theory, ideas of postmodernity, psychoanalysis, and post-Marxist approaches – recent work has emphasized that space is not a neutral backdrop for human action but is charged with meaning through discourse and practice. These developments have led, amongst other things, to an interest in spatial representations in popular texts: cultural productions like writing, film and landscape.

Geographers have long been interested in literature, from studies which used

novels as sources of geographical 'data' (Darby 1948; Jay 1975) to humanistic interest in literature's apparent success in capturing the subjective experience of place in print (Tuan 1976, 1978; Pocock 1979, 1981). Following criticism of both approaches (Thrift 1978; Gregory 1981), and a closer engagement with literary theory (Brosseau 1994), representations of space in novels and non-fictional forms like travel writing are once again being interrogated. Attention is now given to the sociological and geographical imaginations of writers (Daniels and Rycroft 1993; Foster 1994; Schmid 1995); the textualization of movement, routes and other spatial narratives (Carter 1987; Cresswell 1993; Brosseau 1995); and the place of literature in the production and consumption of geographical knowledges and cultural differences (Sharp 1994; Phillips 1997). At the same time, increasing attention is being given to space by those working in cultural studies, anthropology, literary theory and elsewhere, and this has also emphasized the spatiality of literature (Davis 1987; Moretti 1998).

Geographers have also asked similar questions of other media, principally film (Aitken and Zonn 1993, 1994; Clarke 1997) and television (Burgess 1987; Higson 1987) as part of a wider interest in the production and consumption of mediated meanings (Burgess and Gold 1985; Burgess 1990). Key strands of research on the spatiality of film have examined the relationship between cinematic space and urban space, and how understandings of each inform each other (see Clarke 1997); how film through its various genres, such as road movies or the Western, and cinematic techniques, such as cut-aways and special effects, have shaped geographical imaginations and senses of place (Eyerman and Lofgren 1995; Short 1991); and how the relationships between space, identity and difference are (re)produced and challenged through film (for example Aitken and Lukinbeal 1998).

Much of this interest in the geographies of popular texts has been to some extent influenced by a wider interest in the aesthetics and politics of representation and a poststructuralist questioning of the idea of mimesis or realism (Barnes and Duncan 1992; Duncan and Ley 1993). It is this suspicion of mimesis which makes science fiction such an interesting set of fictions for geographers.

WHAT IS SCIENCE FICTION?

The starting point for this book is the belief that science fiction opens up a space in which authors and readers or viewers can reflect upon the nature of a wide variety of things (including space, nature, and material things themselves). This potential is there, we would argue, because science fiction is a form of non-realist fiction; it is this relationship with the 'real' that gives it its nature as 'fiction squared' (Suvin 1979: 117). Defining SF, then, requires attention to its status as fiction, rather than its content. The latter strategy – listing all those tropes deemed to be science fictional – leads into 'a critical quagmire' (Shippey 1991: 1), not least because this kind of classification requires a prior definition of SF.

Instead we want to concentrate on a variety of ways in which SF can be seen as

a privileged site for critical thought. What connects many of the arguments made for the value of this space is the sense that what drives SF is actually less a thing than a gap: between science and fiction, between the reader's reality and the world of the fiction, between the possible and the impossible. This gap sometimes seems like a weak link, broken easily with a little deconstruction; at other times it seems like a zone of tension between two opposed tendencies: science *and* fiction. It is entirely appropriate that it is possible to read the term 'science fiction' itself as an oxymoron.

While much of the following work develops theories of the fantastic through the analysis of written texts, it is possible to extend these ideas to film through a shared interest in the fragile fabrication of mimesis in both literature and film and the critical application of theories derived from poststructuralism and psychoanalysis. However, it should be noted that we are not trying to produce a synthesis of previous work on science fiction literature and film, nor are we suggesting that these critics are always entirely successful in attempting to 'fit' together some of these theories (particularly poststructuralism and psychoanalysis). Rather we are trying to draw out some of the most significant points from an extremely heterogeneous field of study.

One of the most influential accounts of the nature of SF has considered it as a literature of 'cognitive estrangement': 'SF is distinguished by the narrative dominance or hegemony of a fictional "novum" (novelty, innovation) validated by cognitive logic' (Suvin 1979: 63). By this Suvin means that SF discusses impossible or unknown things (intelligent life beyond earth, 'terraforming') in rational, usually scientific, ways. It is therefore different from fantasy, which is estranging but noncognitive, and from 'realistic' fiction (cognitive but naturalistic). The novum has since been discussed as part of the experience of reading SF (Shippey 1991) or as a way into thinking about the tensions between rational cognition and fantastic estrangement.

Other critics who have seen SF as related in some way to the broader mode of the fantastic[1] – which also embraces horror, the gothic and utopian or dystopian fiction, as well as fantasy – argue that it shares with these other genres an uneasy mixing of the real and the unreal.

> Literary fantasies have appeared to be 'free' from many of the conventions and restraints of more realistic texts: they have refused to observe unities of time, space and character, doing away with chronology, three-dimensionality and with rigid distinctions between animate and inanimate objects, self and other, life and death.
>
> (Jackson 1981: 1–2)

However, the fantastic is more than a simple *negation* of realism and rationality. Rosemary Jackson argues that the discourse of the fantastic attempts to discuss what lies beyond language: 'Structured upon contradiction and ambivalence, the fantastic traces in that which cannot be said, that which evades articulation or that which is represented as "untrue" and "unreal"' (p. 37). The fantastic is therefore a literature of desire which seeks to expose absences, indicating a culture's particular fears and taboos. It is located in the space between the real and unreal, and the two elements must co-exist together, allowing a text to move between the poles of mimesis and the fantastic. From this talk of desire and fear it should be clear that Jackson, like many other writers on the fantastic, is convinced that it expresses the workings of the unconscious. Lucie Armitt's *Theorising the Fantastic* (1996) critically explores the writings of Freud, Lacan and Kristeva for insights into the relationship between fiction and fantasy, and the troubling or comforting significance of dreams, the uncanny, mirrors, and the abject (see also Burgin *et al.*, 1989). Critical interest in psychoanalytical readings of the fantastic is strongly developed in studies of SF film, for example Constance Penley's discussion of time-travel and the primal scene in James Cameron's 1984 film *The Terminator* (Penley 1990) and Barbara Creed's influential analysis of the 'monstrous-feminine' in Ridley Scott's 1979 film *Alien* (1993). This tradition of criticism sees SF as a 'return of the repressed', as 'the strangeness, the fantastic nature, of the fictional worlds of science fiction films may endow them with some of the qualities of unconscious productions' (Kuhn 1990: 92).

The work of Tzvetan Todorov (1973) is enormously helpful in showing how the relationship between the real and the unreal takes textual form. Todorov argued that the blurring of the line between 'real' and 'unreal' depends upon two things: the reader's uncertainty over the truth of the narrative and the resistance of the text to narrative closure. The fantastic is therefore defined in terms of the inscription within the text of hesitation or anxiety. Three conditions must be met:

> . . . the text must oblige the reader to consider the world of the characters as a world of living persons and to hesitate between a natural and a supernatural explanation of the events described . . . this hesitation may also be experienced by a character . . . [and] the reader must adopt a certain attitude with regard to the text; he will reject allegorical as well as poetic interpretations.
>
> (Todorov 1973: 33)

Thus the reader is constantly encouraged to attempt to understand and make sense of an ambiguous text rather than dismissing it all as a 'mere fairy tale' or as an allegory of the real. Having identified this hesitation as the key textual embodiment of the fantastic, we can now begin to examine the conventions by which it is produced. Firstly, the fantastic recognizes and makes explicit the impossibility of literary realism, of mimesis. Simple explanations are deferred and narrative closure resisted; nonsense words, invisibility and incoherence are central concerns. Secondly, Jackson writes that this kind of text is antinomical; it holds contradictions together to create semantic impossibilities, chiefly through

the oxymoron; it is polysemic. Finally, one of the most effective of the many ways of producing a hesitation within the text is 'a confusion of pronouns and of pronoun functions' (Jackson 1981: 29), conflating the subject positions of the narrator and the protagonist, problematizing vision and objectivity.

Todorov located the fantastic in a gap between his two categories of non-realist fiction, the uncanny and the marvellous, and Armitt reads his structuralism as straining and failing to contain the fantastic:[2]

> Thus, precisely because the fantastic comes to the fore at the point of interaction between two conflicting worlds/zones/modes, the resulting narrative is always to a greater or lesser extent on the edge between the two, simultaneously acknowledging both, simultaneously cutting across both . . .
>
> (Armitt 1996: 32)

This brings us to the question of mimesis in SF. One of the most important ways in which realism is created in SF is through the application of a particular form of scientific rationality. As a result, science fiction is generally *plausible* and *consistent with scientific principles*. The question of scientific realism has been most usefully developed by critics of 'hard SF', that part of the genre which foregrounds science and technology as content and organizing discourse (see for example Huntingdon 1989; Malmgren 1991; Samuelson 1993; Westfahl 1993). The principles involved in writing this kind of SF are well illustrated by this statement from the SF author Robert Heinlein:

> A man who provides Mars with a dense atmosphere and an agreeable climate, a man whose writing shows that he knows nothing of ballistics nor of astronomy nor of any modern technology would do better not to attempt science fiction . . . The obligation of the writer to his reader to know what he is talking about is even stronger in science fiction than elsewhere, because the ordinary reader has less chance to catch him out.
>
> (cited in Huntingdon 1989: 71)

Westfahl suggests that 'hard SF is committed to *avoiding scientific errors in stories*' (1993: 162, emphasis in original). This is complicated by the genre's place between realist and fantastic fiction, as David Samuelson points out: 'In SF . . . scientific accuracy is also limited by the competing demand for fantasy. Even hard SF requires an element of the unknown, into which writers cast a net fashioned of reigning theory' (1993: 193).

> Regardless of its setting in time and space, SF depends on transgressions of what its readers think of as reality. To justify those transgressions, it establishes images of reality on grounds essentially theoretical.
>
> (Samuelson 1993: 198)

Yet this fictional science can *never* be exactly right. Samuelson goes on to argue that 'all SF writers "cheat" on known science', but whereas most SF authors ignore these problems or cover them up with 'verbal legerdemain', 'the trick in hard SF is to *minimize* cheating, not just disguise it with fancy footwork' (1993: 193, emphasis in original).

Several SF critics have distinguished between *extrapolative* and *speculative* SF in terms which are clearly derived from consideration of this tension between the fantastic and mimetic (Westfahl 1993; Samuelson 1993; Malmgren 1991, 1993):

> The author may proceed either by extrapolation, creating a fictional novum by logical projection or extension from existing actualities, or by speculation, making a quantum leap of the imagination toward an *other* state of affairs.
>
> (Malmgren 1993: 17)

The distinction rests upon the *distance* between the world of the reader and the world of the fiction.[3] Samuelson notes that while speculation is freer than extrapolation, 'many SF writers feel an obligation to rationalize even outrageous speculations after the fact' (1993: 199). Speculation is 'a high-risk strategy' because it is more vulnerable to readers' criticisms (Westfahl 1993: 163). The further we get from the real, the weaker the scientific legitimation becomes.

Carl Malmgren's work on SF (1991, 1993) is enormously useful in developing this insight. The central premise of 'Self and Other in SF' (1993) is taken from SF author Gregory Benford's acute observation that 'rendering the alien, making the reader experience it, is the crucial contribution of SF' (cited p. 15). What Benford calls 'effing the ineffable' – making the strange understandable – represents the chief strategy employed by authors and readers in the transformation of the impossible into the plausible. 'SF rigorously and systematically "naturalizes" or "domesticates" its displacements and discontinuities' (Malmgren 1991: 6). It is possible, therefore, to suggest that SF depends upon impossibility, since it breaks with the realist novel in discussing spaces and times which are unknown and even unknowable. The fantastic is allowed into the text to give the author and reader room for their 'thought experiments' but is ordered and contained. In other words, scientific realism replaces hesitation with consistency within the text, and allows the reader to make sense of the impossible and fantastic elements of SF, though more 'speculative' works and readers' transformations may open up space for the fantastic.

This brings us to the important political question of the ways in which different producers and consumers of science-fictional texts occupy the critical space between realism and fantasy. Many of the most interesting worlds of SF have been created by women, people of colour, gay men and lesbians, who have made power visible through their estranging fictions. For similar reasons, the most

engaging criticisms of SF have been centrally concerned with difference. The title of Sarah Lefanu's *In the Chinks of the World Machine* (1988) points to the marginalization of women not simply as subjects but as authors of SF; one of Jenny Wolmark's key concerns is the extent to which SF constructs its own *Aliens and Others* (1993); and the essays in Lucie Armitt's collection *Where No Man Has Gone Before* make a similar point (1991). Nothing could make this clearer than the case of James Tiptree Jr; he was discovered to be a woman named Alice Sheldon after an eight-year-long career in SF.[4] The space of SF is a place to speak from, a site for reflection, criticism and pleasure – but it should not be simply celebrated, because it contains its own Others.

Similarly, we should not assume that readers are always critically estranged from the taken-for-granted world. Armitt suggests that our familiarity with fantastic fictions acts to close off their transgressive potential:

> Largely constrained by formulaic constructs, those modes which we might refer to as science fiction, ghost stories, horror fiction and fairy tales offer readers, albeit paradoxically, the consolation of gratified desires.
>
> (Armitt 1996: 35)

As we have seen, SF contains the transgressive by an appeal not to mimesis but to plausibility; other forms of the fantastic are ordered in different ways. What Todorov called 'marvellous' fictions, for example, have no inherently fantastic potential because they invite a reading which makes sense of the text by reference to coherent religious or mythical belief systems (Brooke-Rose 1981: 243). Yet Armitt leaves room for this transgression by reminding us that the text may still hold incoherencies, which may be worked on by the reader:

> If we end up being disturbed because what we took to be a ghost story suddenly seems to be opening up to the hesitant possibility of a hallucination or madness, it ceases simultaneously to *be* a ghost story and to fulfil our expectant desires.
>
> (Armitt 1996: 35)

One final question needs to be asked: to what extent is this estrangement unique to fantastic fictions? Since mimesis is itself a fiction, all texts represent the 'unreal', and they are read by readers working between the world of their experience and the world of the text. This point might seem to invalidate a study of SF or related fictions as texts apart, but it is worth repeating Suvin's assertion that SF is 'fiction squared' – it, like other fantastic fictions, is far more ready to encourage a self-conscious questioning of mimesis than realist texts (Broderick 1995). This is particularly obvious in SF cinema, as special effects simultaneously present the unreal as real *and* draw attention to its nature as fiction (Neale 1990b). The critical appeal of SF, then, lies in its ability to de-naturalize mimesis and commonsensical understandings.

SPACE AND SCIENCE FICTION

We have argued that SF offers a space in which readers and writers may re-view fiction and the world beyond it. Its texts offer us, just as they offered James Blaylock's web-fingered protagonist Giles Peach, 'windows into alternate worlds . . . he quickly saw a way to boost himself over the sill and clamber through' (1988: 17). In many ways SF's estrangement can be considered through spatial metaphors: it constructs spatial realms (new worlds, inner and outer spaces), concerns itself with borders and transgressions (alien invaders and invasive cyborgization). SF is therefore open to analyses that identify and trace out these geographies.

Such analyses in and of themselves are however fairly limited. Where they become particularly useful, however, is when they are used as a foil for thinking about present-day geographies, their construction, reproduction and contingency, and thinking through how we theorize and comprehend a range of concepts such as space, nature, subjectivity and reality. Here, SF becomes a useful cognitive space, opening up sites from which to contemplate material and discursive geographies and the production of geographical knowledges and imaginations. Given the centrality of space to the narratives of SF, and their potential utility as cognitive spaces, it is perhaps a little surprising that to date the imaginative geographies of SF have been little explored by geographers or other spatial theorists. That said, the work of theorists like Jean Baudrillard (1991a, 1991b), Donna Haraway (1985), Fredric Jameson (1991), David Harvey (1989) and Mike Davis (1990) all offers fascinating insights into the value of SF as a device to open up and illustrate particular concepts and ideas. For example, Donna Haraway (1985) has utilized films such as *The Terminator* and *Robocop* to examine and unsettle the relationships between nature, technology and culture. From this analysis she has developed an influential manifesto around the notion of a 'cyborg politics', detailing critical, resistive practices aimed at challenging patriarchal relations. Mike Davis (1992) takes a different perspective, using the writings of William Gibson and the film *Blade Runner* to explore the urban development and social problems of modern-day Los Angeles, and to extrapolate possible urban futures. We want to discuss a number of science fictional geographies here to illustrate this potential.

It should hopefully already be clear that SF represents space in ways which generally 'eff' the ineffable. While the 'topography of the modern fantastic' (Jackson 1981: 42–8) is made up of tropes – empty spaces, places of fog and mirrors, labyrinths – which lead the reader into 'a realm of non-signification, towards a zero point of non-meaning' (p. 42), in SF the reader is constantly encouraged to make sense of space through a variety of forms of mapping. If we adopt, just for the moment, the distinction between speculative and extrapolative SF, we can compare a few science fictional geographies to see how this is done.

The subgenre of 'cyberpunk', exemplified by William Gibson's fictions, was

widely hailed as 'postmodernist SF' (Bukatman 1993; Csicsery-Ronay Jr 1991; Jameson 1991; McCaffery 1991). Yet the near-future, extrapolated worlds described by these writers were intended as realistic transformations of the present, descriptions of postmodern*ity*.

> The triumph of [Gibson's short stories] was their brilliant, self-consistent evocation of a credible future . . . These stories paint an instantly recognizable portrait of the modern predicament. Gibson's extrapolations show, with exaggerated clarity, the hidden bulk of an iceberg of social change.
>
> (Sterling 1988: 10–11)

The geographies of cyberpunk are therefore 'this world re-placed and dislocated' (Jackson 1981: 19); like the settings of fantasy fictions, they are made 'realistic' through careful extrapolation which rarely steps far from the plausible. This is not to say that they are not of interest, however; these representations have been read as critical expositions of the workings of contemporary capitalism in a globalized world. Through these fictions academics and ordinary readers can make sense of this world of cyberspace, simulation, cyborgs and privatized urban space (Dodge and Kitchin 2000; Kitchin and Kneale 2001; Kneale 1999). Ross suggested that 'cyberpunk sketched out the contours of the new maps of power and wealth with which the information economy was colonising the global landscape' (1991: 147). In doing so it produced a recursive relationship between authors, technologists and academic theorists. Gibson's representations of cyberspace are held to have 'provided . . . the imaginal public sphere and reconfigured discursive community that established the grounding for the possibility of a new kind of interaction' and thus the development of 'real' cyberspace and virtual reality environments (Stone 1991: 95, and see Tomas 1991). Similarly, Mike Davis (1992: 3) writes that:

> William Gibson . . . has provided stunning examples of how realist, 'extrapolative' science fiction can operate as prefigurative social theory, as well as an anticipatory opposition politics to the cyber-fascism lurking over the horizon.

Gibson acknowledged the influence of Davis's *City of Quartz* (1990) in shaping his representation of the privatization of public space in Los Angeles in his novel *Virtual Light* (1992), while Klein (1991) suggests that planners are actively seeking to remake Los Angeles in the image of *Blade Runner*. The gap between the worlds of cyberpunk and of the reader may not be very wide, but this simultaneous difference and similarity has proved to be extremely productive in developing new imagined and 'real' geographies, much as the political influence of utopian or dystopian fiction draws its strengths from its movement between the known and the unknown.

Brian Aldiss's Helliconia trilogy (1982, 1983, 1985) provides an example of a more risky extrapolation. The planet of Helliconia orbits (rather irregularly) around two suns, and consequently its seasons are longer than our centuries; in this way it is so different from Earth that it becomes virtually unthinkable. However, by accepting the principles of astronomy, and applying them to the situation that Aldiss presents us with, we can begin to imagine that the existence of Helliconia is *theoretically* possible after all. Aldiss took advice from academics, including Jack Cohen, a reproductive biologist who has acted as a 'consultant' to several SF authors who wanted plausible extraterrestrial life-forms.[5] Writing in *New Scientist*, Cohen observes that inventing new planets requires 'building a new world ecology with a detailed evolutionary history so that the plot does not have any obvious contradictions' (1991: 20). This evolutionary history pays attention to both contingent evolutionary solutions to particular challenges and 'universal' solutions:

> Although every detail must be different, there are patterns of general problems, and common solutions to those problems, that would apply to life anywhere in the Universe.
>
> (p. 18)

While Cohen's aliens are certainly stranger than many SF extraterrestrials, his belief that the problems which would face life are all variants on those found on Earth means that these new worlds would only be distorted echoes of our own. Similarly the rules of ecology are often used as a conceptual map for the writing of fictions like Frank Herbert's *Dune* series. These geographies present the critic with a series of textual strategies for opening up and closing off new ways of thinking about space.

These strategies can be compared with what Malmgren calls 'an extreme example of speculative Otherness' (1991: 42). Stanislaw Lem's *Solaris* (1970) is a planet which is a cipher to the scientists who investigate it. The nature of this world cannot easily be described here, since none of the protagonists can do more than guess at its nature; throughout the novel there is a suggestion that the planet, or at least its surface, might be a conscious entity. Solaris, with its wilful and disorienting refusal to be understood, is indeed an excellent example of the fantastic place. This is in deliberate contrast to the extrapolated geographies of most SF; one of the themes of Lem's novel is the arrogance of human science in assuming that the ineffable can be 'effed'. This 'geocentrism' leads us to map the Earth onto the planets that we might find beyond our own solar system.

> We don't want to conquer the cosmos, we simply want to extend the boundaries of the Earth to the frontiers of the cosmos. For us, such and such a planet is as arid as the Sahara, another as frozen as the North Pole, yet another as lush as the Amazon basin . . . We are only seeking Man. We have no need of other worlds. We need mirrors.
>
> (Lem 1987: 72)

This is in itself a metaphor for world-building in SF: in imagining other worlds we have used our own (scientific and commonsensical) understandings of Earth to reproduce images of this planet throughout an imagined cosmos.

These geographies of SF, like other aspects of the genre, are situated uneasily within a mimetic or scientifically plausible framework of explanation. Some writers, like Lem, seek to criticize the representation of science fictional spaces and in doing so open up different ways of thinking about these 'new worlds'. Others invite the reader to make sense of these worlds through comparisons with our own. Readers, of course, may make their own senses of these representations.

THE CHAPTERS

The chapters which follow address a number of different geographies of science fiction. Because of the variety of ways in which the authors weave together geography and science fiction, and the wide field of authors and ideas surveyed, we have not tried to organize the chapters into sections. Three of the papers are concerned with cinema, the rest with literature; some of the authors have chosen to concentrate on particular authors or texts while others have chosen a broader set of themes or ideas. Many of the authors have chosen to use some aspect of SF as a map to explore wider issues in the theorizing of space or nature, while some have read SF against theories drawn from elsewhere. However, there are a number of connections between many of them, and here we draw out some of these points of contact as well as suggest where there are tensions and conflicting interpretations.

In Chapter 2 Barney Warf utilizes a particular sub-genre of SF, alternative histories, to examine the contingency of present-day geographies. In his analysis he uses a number of examples, such as 'what if Germany had won the Second World War?', to argue against teleological views of history and geography. Warf argues that such teleological accounts still underlie much geographical analysis, and his reading of alternative histories draws on poststructuralism, realism and structuration theory to emphasize the contingency of geographical relations. His central thesis is that alternative histories can be utilized as critical tools, freeing us from the tyranny of teleology and allowing a re-interpretation of past and present geographies. By implication, reflecting on what might have been might also allows us to imagine how tomorrow's geographies might be very different; being suspicious about extrapolations of our present world might play a part in letting us 'get the future we deserve' (Ross 1991).

Michael Longan and Tim Oakes are also interested in ideas of history and contingency. Their reading of Neal Stephenson's fiction allows them to think through the complex relationships between space, history, power, culture and subjectivity. More importantly, they offer an important critique of his representation of China which is extended to wider (Western *and* Chinese) culturalist constructions of 'an ultrastable spatial identity of "Chineseness"'. *The Diamond Age* (1995) invokes a 'timeless cultural geography' which, Longan and Oakes

point out, denies history; China is condemned to rehearse the violent upheavals of the past. The new technologies which are at the centre of the novel also offer West and East different prospects: for China they represent a chance to further strengthen a culturalist, spatially bound and historically stable identity; for the characters Nell and Hackworth they offer ways to achieve an emancipatory consciousness and freedom from scarcity. While they are highly critical of Stephenson's representation of China, they also argue that it mirrors culturalist tendencies in some post-colonial writing.

Michelle Kendrick also examines Stephenson's work in relation to space and subjectivity but, in contrast to Longan and Oakes, focuses her analysis on the construction and reproduction of the relationships between space, technology and gender. She argues that Stephenson's novels *Snow Crash* (1992) and *The Diamond Age* reveal a moment of cultural anxiety about space, technology and their relationship to the physical body. In *Snow Crash*, Stephenson acknowledges the role played by technology and text (cyberspace) in constructing subjectivity but also sees this inscription as threatening individuality and agency. *The Diamond Age* also considers the problems of the interface; bodies and technologies fuse or take on the character of each other. Again Stephenson represents technology as both 'prosthesis' and 'implosion'; it is both outside the subject, under its control, and inside, constituting the subject. This 'uneasy balance between being a subject and – through the technology – creating and projecting a subject out from the natural body' slides into a reassertion of bodily integrity against technological invasion. Significantly, this body is gendered, and Kendrick concludes that for Stephenson, 'At some level, the marker that tells the human from the computer is gender'.

Barbara Morehouse's analysis of Marge Piercy's *He, She and It* (1991) similarly reflects upon the possibilities of SF to engage critically with patriarchy as a form of feminist politics. In her chapter, Morehouse examines Piercy's novel as a feminist utopian text that explores the possibilities of inclusionary politics, the nature of difference, and geographies of power. She argues that in *He, She and It* Piercy explores a number of themes – relationships between technology and the body, the ambiguous freedoms of cyberspace, and the gendering of space – in ways which allow her to critique patriarchal socio-spatial relations. While recognizing the importance of this critical space for re-imagining society, Morehouse goes on to question the effectiveness of these critiques. She suggests that while Piercy's celebrated novel has much to praise, it valorizes some aspects of feminist politics while reproducing other geographies of difference through notions of borderlands and margins, and through a highly exclusive feminist utopia which is defined by contrast to a dystopian, racialized and 'impure' space.

Jonathan Taylor's contribution continues the exploration of the spatial subjectivities of SF, but from a different perspective, introducing the question of surrealism and the 'interior space' of consciousness (a theme developed, in different ways, in subsequent chapters). His chapter concerns the work of J. G. Ballard, a writer with an awkward relationship with SF and criticism. Rather

than consider Ballard as an author of 'postmodernist SF', Taylor discusses his work in terms of surrealism, where objects (including landscapes) are taken as manifestations of the unconscious and mirror radical shifts in subjectivity. In Ballard's transformed worlds of crystal and water, as well as in ordinary spaces like motorway intersections and high-rises and in his 'leisure utopia', the desires and obsessions of his protagonists blossom in apparently pathological ways. Yet in these spaces they will have reached some kind of new understanding of themselves and of their surroundings, and Taylor takes care to stress Ballard's insistence that while 'the environment makes possible the . . . unfolding logics' of transformation, these possibilities are enthusiastically welcomed.

Stuart Aitken is also interested in the workings of the unconscious, but uses a psychoanalytical approach to examine patriarchal relations in SF horror movies. He argues that the persistence of this genre and its repetition of specific images and tropes is due to the way that it speaks to persistent fears and desires – and particularly those associated with feminine sexuality. Working through three of these cine-psychoanalytic repetitions: the Medusa's head, the monstrous womb, and the stalker/slasher in films such as *Dark City* and *Blade Runner*, Aitken considers their significance in expressing fears of castration and the abject feminine. This type of analysis, he suggests, allows us to 'tap into the grammar of man-made spaces' and to examine the relationship between the sphere of the social and that of the psyche in the creation and reproduction of everyday geographies. Aitken concludes by examining the importance of narrative closure in these films and their 'disturbingly happy endings': resolving the shaken certainties of the spectator through a flight from the city to a space where masculinity, capitalism, and the family can be restored and reproduced.

The next chapter, by Paul Kingsbury, also concentrates on the unsettling and the unexpected in SF film. Kingsbury mobilizes Alfred Jarry's notion of a 'pataphysics of absence' to show how SF texts use, disrupt and estrange space-time through staging a tension between presence and absence, possible and impossible. For Kingsbury, these elements of SF films are not simply *opposed* to reason but trace its limits. His examples – which concern scale, invisibility, and the cyborg – demonstrate the ways in which these tactics of estrangement are used in SF to unsettle the viewer, to make them question their understandings of space-time. It is also worth noting that Kingsbury differs from Aitken in his reading of the consequences of these ruptures and oscillations. Whereas Aitken sees SF films as bound by narrative conventions of closure, reproducing socio-spatial relations through the 'happy ending', Kingsbury highlights the value of SF to estrange and defamiliarize the taken-for-granted, opening it up for critical consideration.

The last of the three chapters which concern SF and the cinema takes a different tack from Aitken and Kingsbury. David Clarke and Marcus Doel go back to the period between 1895 and 1913, when cinema shifted from being 'an invention without a future' to the dominance of the feature film and the fixing of conventions that are still largely used today. The practices which most interest them are those developed as ways of representing space and time; some, such as

agreed projection speeds or continuity filming, tied filmic time to 'real' time, while others, the 'special effects' of their day, like flashbacks or mounting cameras on trolleys, allowed the cinema to produce new experiences of time and space. Doel and Clarke point out that while modern SF and cinema appear at the same time, it was a while before (British) SF films were made. Instead they consider Robert W. Paul's plans for a 'Time Machine' which would involve film and other media to create the sensation of travelling through time and space. This and other examples provide valuable demonstrations of the ways in which film is (or became) a form of science fiction, a machine for making space and time.

Sheila Hones also explores the space-time grammar of SF through a comparison between the writings of popular physics, particularly those that aim to explain quantum physics, and those of SF writers, in particular Frank Herbert. Hones argues that the geographies of SF are grounded in the 'real' and that its mimetic and narrative conventions 'renders the unimagined imaginable'. Popular physics texts occupy a more ambiguous position. They need to describe, to non-specialists, a world which is indescribable in ordinary language; yet the rhetorical strategies (e.g. metaphors) and the conventions of fictional genres (e.g. adventure stories) which are capable of translating this mathematical world can do so only by reproducing conventional understandings of space. Herbert's novel *Dune* (1965) is read as an example of a coherent textual world which can safely stage the implosion of fictional time and space without bewildering the reader. Hones concludes by considering the ways in which the two kinds of text function as narratives which construct, rather than present, reality.

Developing the theme of nature into a discussion of human–environment relations, Shaun Huston's chapter examines the ways in which Kim Stanley Robinson's Mars trilogy, which charts the transformation of Mars into a habitable planet, incorporates the ideas of social ecologist Murray Bookchin. Critics have argued that Bookchin does not really detail the character of his 'third nature', and Huston offers Robinson's Mars trilogy as an imaginative exploration of this idea. The trilogy is built around the unfolding debates about what to do with Mars, and in the changing positions taken by the characters Robinson sets out a number of different ecological and social philosophies. The novels therefore stage a working-out of the dialectic between first and second natures to produce an image of third nature; Mars is not simply terraformed because it simultaneously 'areoforms' its human settlers. Huston concludes that Robinson's trilogy provides a useful cognitive space in which to consider and critique Bookchin's theory.

Finally, Nick Bingham also considers the relationships between society and nature, drawing on the work of Bruno Latour, Michel Serres and others to present a reading of Mary Shelley's *Frankenstein* as a cautionary tale. Unlike other readings of this canonical text, Bingham's warning concerns not the misuse of technology or nature but the dangers of treating the two as distinct categories. Noting that SF is particularly concerned with the non-human, Bingham argues

that *Frankenstein* has long been used as a resource for making sense of the relationships between the two 'realms', as it is in contemporary discussions of genetically-modified organisms. However, many of these interpretations are relatively conservative because they take a number of 'shortcuts' through complex theoretical terrain; in working through these shortcuts Bingham demonstrates alternative ways of reading *Frankenstein* and other, 'non-fictional', narratives of the natural and cultural. In this way Bingham provides re-interpretations of both Shelley's novel, and wider questions about the social and the technical, the cultural and the scientific, and the nature of ourselves and our artefacts.

FUTURE GEOGRAPHIES OF SF

These eleven chapters provide numerous points of departure from which to begin further explorations of the geographies of science fiction. We believe that they throw new light on both SF and geography, and that they raise important questions for the imagination and representation of space. However, there is still a great deal of work to be done in this area, concerning, perhaps, extended investigations of the place of non-humans (objects and aliens) in SF, the consumption and circulation of textual SF meanings throughout popular cultures, and the widening of what might almost be described as a canon of 'approved' authors, novels and films. Hopefully this collection will provide a starting point for further criticism.

NOTES

1 Throughout this discussion we will distinguish between 'fantasy as genre fiction and the fantastic as a far more resistant, anti-generic mode' (Armitt 1996: 6).
2 Armitt goes on to note the similarity between Todorov's point between uncanny and marvellous, and Michel Foucault's famous description of transgression: 'Transgression is an action which involves the limit, that narrow zone of a line where it displays the flash of its passage . . . it is likely that transgression has its entire space in the line it crosses . . .' (Foucault 1977: 33–4).
3 See Malmgren (1991: 11–15) for a more extensive treatment of these ideas. In hard SF the plausibility of the fiction may be judged on scientific rather than mimetic grounds: 'we judge hard-core SF, not by an appeal to our experience of the world, but by the scientific language it uses' (Huntingdon 1989: 72).
4 See Lefanu (1988: 105–29) on this case of a woman writing as a man writing about women.
5 However, Cohen does describe Helliconia's climatic extremes as 'impossible' (p. 20).

2

THE WAY IT WASN'T

ALTERNATIVE HISTORIES, CONTINGENT GEOGRAPHIES

Barney Warf

When the Persians defeated the Greeks in Salamis in 480 BC, the necklace of polises along the shores was brought under Xerxes' control. Visiting satraps, amusing themselves amidst the ruins of Athens, speculated with curiosity about this odd rumour about something called 'democracy'.

Shortly after the Moors annihilated the Franks in the eighth century, they plunged northwards into the misty lands of England and Germany. Edward Gibbon, in the magisterial *Decline and Fall of the Roman Empire* (1776), noted that it was not unlikely that the Saracens could have reached Scotland: 'the Rhine is not more impassable than the Nile or Euphrates, and the Arabian fleet might have sailed without a naval combat into the mouth of the Thames.' He goes on to point, wryly, that the Koran might have been taught in Oxford.

Shortly after the Nazi conquest of Russia, following the seizure of Moscow in 1942, German troops quickly occupied the oil-rich fields of the Middle East, which they used as a springboard into Africa and India. Gandhi, employing the tactics of nonviolence that worked so well earlier against the British, was quickly crushed. With most of the Old World secured, and the atomic bomb in its hands, the Third Reich turned its attention to the New World.

Now, why should we bother asking about events that never took place? How could something that wasn't real be significant? Why concern ourselves over what did *not* happen, when we work so hard to comprehend what did? The answer lies in an exploration of how we understand historical change and the ways in which geographies are created. The future is always open for speculation, but the past is rarely considered in this light. Yet the past inevitably was once someone's future. To address this issue, I turn to alternative history, a genre of science fiction that has long been dismissed by historians as mere 'fluff' but has recently enjoyed a resurgence of popularity. Alternative history can be serious scholarship, not simply entertainment, and holds important implications for social and spatial analysis.