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FICTION

EDITED BY DAVID SEED

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Introduction: Approaching Science Fiction

This companion is intended to serve as an introduction and guide to one of the most extensive and varied kinds of modern literature. It does not pretend to exhaustive coverage. For that, the reader should consult reference works such as John Clute and Peter Nicholls' *Encyclopedia of Science Fiction* (1999), which remains the leading work of its kind for its combination of author and topic entries, or the *St. James Guide to Science Fiction Writers* (4th edn, Pederson 1996). It reflects a broad cultural shift towards science fiction that published writing on SF subjects (the term "science fiction" and its acronym SF will be used interchangeably throughout this volume) has become so extensive that a full bibliography would need to be as long as this volume. Here each essay concludes with a "references and further reading" section which not only give details of works cited within the essays, but also includes other relevant works and bibliographies. One of the most popular narrative subjects in SF is exploration and it is the hope that this companion will help readers in their discovery of the field by setting up a number of sign-posts and recommending some of the routes to take.

The very fact that this companion is being published suggests that SF at long last is being viewed as central to the culture. In the 1950s, cover statement for Penguin editions of John Wyndham's novels declared that he was writing a "modified form of what is unhappily known as 'science fiction,'" whereas in 2000 Wyndham's works started appearing in the Penguin Modern Classics. Apart from shifting Wyndham from the margins to the heart of an evolving modern canon, this change shows a reassessment of the idea of science fiction. Its centrality has been asserted by the US novelist Thomas M. Disch, who declared in 1998: "science fiction has come to permeate our culture in ways both trivial and/or profound, obvious and/or insidious" (Disch 1998: 11). The alternatives are strategic here because Disch is hedging his bets on the nature of SF's impact on culture, while the fact of its presence is indisputable. Whatever we think of SF, we live science fiction in our daily lives. From at least the 1950s onwards, writers such as Ray Bradbury have insisted that we live within the

very technological environment of robotics and cybernetic devices that many SF writers describe.

This is not to argue that SF is the new version of social realism though this argument would not be absurd. Indeed, SF writers of the 1950s and 1960s quite often put forward such a view. Horrified equally by the US government restrictions on scientific knowledge in the Cold War and by the irresponsible myths promoted by SF writers at this time, Philip Wylie insisted in 1953: “The proper function of the science fiction author – the myth-maker of the twentieth century – would be to learn the science of the mind’s workings and therewith to plan his work . . . so it will represent in *meaning* the known significance of man” (Wylie 1953: 239). Wylie was writing in the shadow of the Bomb and he was only too well aware of the weaknesses of SF at that time. Nevertheless, his insistence on SF’s centrality was echoed by Robert Heinlein a few years later, when he declared: “It is the only fictional medium capable of interpreting the changing, head-long rush of modern life. Speculative fiction is the main stream of fiction” (Heinlein 1964: 53).

This raises a question which will recur throughout this companion: how do we read SF? Joanna Russ opened her 1975 “Towards an Aesthetic of Science Fiction” with the following questions:

Is science fiction literature?

Yes.

Can it be judged by the usual literary criteria?

No. (Russ 1995: 3)

There are two issues being raised here: the value of SF and the reading protocols we should apply to SF novels. If we approach *Dune* with the same expectations we would bring to *Middlemarch*, the result will probably be disappointment, not only because, as Joanna Russ has pointed out, SF tends to down-play character in favor of “phenomena.” An even bigger reason lies in the way SF plays with our notion of the real. So, for Darko Suvin, a pioneer of SF criticism, science fiction estranges the reader from the familiar world and produces striking new perspectives as a result (Suvin 1979). Suvin set a high standard of analytical rigor for SF criticism and at the same time suggested ways in which we could think of SF as engaging with forms of otherness (see Parrinder 2000). The narratives in fiction and film of alien encounters are only one – sometimes sensational – form which this confrontation with otherness might take.

The problem of where to situate SF on a critical map has resulted in a number of different explanations of its development. Arguments continue about its origin, some critics even dating SF back into classical antiquity. The productive side to this archaeological line of enquiry is the recovery of lost works; I.F. Clarke’s labors on future wars narratives are a shining example. The more essays and editions are produced on the science fiction of figures like Twain, Trollope, or Kipling, the more it is revealed that realism is not the uniform or “mainstream” some literary historians would have us

believe. In the spirit of this multigeneric approach, Brian Aldiss sees SF as evolving in parallel with the Gothic and proposes *Frankenstein* as a formative work where the two modes intersect (Aldiss 1986). Alternatively Brian McHale (1987) has identified postwar SF as developing along similar lines to postmodernism because both genres ask fundamental questions about the world and the nature of selfhood. In the case of Aldiss, the issue is not so much whether SF grows out of the Gothic (or out of the Industrial Revolution, an argument that would have a lot of historical force), but rather how responsive SF texts would be to an interpretation informed by Gothic practices. McHale also helpfully draws our attention to a tradition of self-consciousness in SF which becomes much more evident after the Second World War. He argues that SF has increasingly borrowed aspects of postmodernism and that SF elements have in turn been borrowed by “mainstream” writers like Pynchon and DeLillo. However, McHale’s commitment to exclusively rhetorical analysis leads him to abstract his chosen fiction from the cultural practices surrounding them. Because he starts from a rationalistic premise that novels must belong within some generic category, he never admits the possibility of a multigeneric work that could move in and out of SF. William Burroughs is one example for McHale of a postmodernist who has used SF tropes and who supposedly confirms McHale’s assertion that postmodernists are supremely indifferent to SF “gadgetry.” Here his lack of historical ballast lets him down. Burroughs has always seemed comfortable when mimicking popular genres like SF or the crime novel and in fact throughout his life demonstrated a fascination with a macabre side to gadgetry: the technology of mind control, for instance. In this volume Veronica Hollinger (chapter 15) uses an altogether more productive model of postmodernism when she argues that SF has been uniquely responsive to techno-scientific change and, in its more experimental forms, has demonstrated a perception that cultural representations are constructs. The best critical writing on SF approaches the fiction in relation to the images and narratives of related cultural practices. SF criticism thus follows a lead from science fiction itself in mapping out relations. The implicit metaphor operating in this companion is that of a lattice. To a greater or lesser extent, its contributors are charting out the relation between SF and related media, particularly film which – as Vivian Sobchack shows in *Screening Space* (enlarged edn. 1987) – has developed in close tandem with SF fiction, especially since the Second World War.

For Sobchack, as for the Polish novelist Stanislaw Lem, SF is a quarrelsome, argumentative, and vulgar mode. In *Microworlds* (1991) Lem fleshes out a view that SF is a generic upstart, constantly blurring the gap between high and low literature. Lem’s particular respect goes to Philip K. Dick – and it is interesting that the Polish writer should choose an American as an impressive example of deploying popular materials with original effect (Lem 1991: 45–105). Dick for his part was rather less generous. When Lem visited the USA, Dick informed the FBI that he was being targeted by a Communist conspiracy. For Lem and for many other critics, SF is a literature of debate. The essays in this volume exemplify this diversity of approach in their arguments as well as their demonstration of how SF writers constantly revise and renew fictional practice by writing *against* their predecessors. Rob Latham, for example, shows how

in the 1960s the New Wave writers questioned many sacred cows in science fiction (its optimism, its preoccupation with technology) by calling for the exploration of “inner space.” More generally, this call involved challenging the decorum of the SF text itself, so that black humor and startling graphics broke up the solemnity we had come to expect in science fiction.

Exploration lies at the heart of SF. It was an imperative which J.G. Ballard’s famous insistence in 1962 did not question: “it is *inner* space, not outer, that needs to be explored” (Ballard 1996: 197). The turn inwards expressed recoil from the publicity attending the Soviet–American space race, but the general drive to exploration in SF represents in narrative form the impulse to discover, to project alternative models of our known world. Philip K. Dick’s paranoid labyrinths are only the darker product of this impulse. World-building is rightly stressed in these pages, as the construction of alternative but proximate cultures (Ursula Le Guin’s Hainish, Gwyneth Jones’ Aleutians), or as the competitive appropriation of new terrain (Kim Stanley Robinson’s Mars trilogy). Gary Westfahl discusses the strategies involved in world-building, the combination of details for verisimilitude and scientific fact about the planets in “hard” science fiction. The phrase “other worlds” has been used again and again as a title for collections of SF stories or essays about them. Stanislaw Lem’s choice of *Microworlds* as title for his collected SF criticism gives the reader a helpful signal that in reading science fiction we are entering a variety of imagined worlds, each with its own organization. All fiction does this, but SF compels the reader to revise presumptions of plausibility. In that sense reading SF is a comparative exercise where we cross-relate the familiar to the strangely new. The narrative device of “parallel worlds,” often with a door or other access point, makes this activity of comparing an explicit part of the narrative. In *World-Games* (1987) Christopher Nash describes “alternative-worlds” fiction as that which “depicts unnatural worlds naturally” (Nash 1987: 60). Although he studiously avoids using the label science fiction, he includes many SF novels in his discussion and his explanation could apply to much of the genre. Again and again we shall see in the essays in this collection how reading SF involves a complex interplay between method and subject, between the supposedly “natural” and its opposite.

The concept of world-building is an intrinsic part of the construction of a science fiction novel. Brian Stableford describes here how plotting took on a new sophistication when John W. Campbell insisted in the late 1930s that contributors to *Astounding Science Fiction* took more pains over the internal consistency of their imagined worlds. The second development was the rise in ecological consciousness in the postwar period. We could take the food chain in this context as symbolic of ecology and world-building in general: symbolic, that is, of connectedness. World-building resembles what Fredric Jameson calls “cognitive mapping,” where the reader discovers and charts out relations between characters and different aspects of their environment. Exploration in the local sense here of discovering these relations has led many critics – some featuring in this volume – to argue that science fiction is a very directed, even didactic kind of fiction. After all, the label science fiction contains a tension between the first term which suggests organized knowledge and the second which denotes

feigning or imaginative construction. Does this mean that SF is instructive? Arthur C. Clarke has dedicated his career to evoking a “sense of wonder” at the sublime spaces of the universe and sees the SF writer’s mission as being a provocative one: to challenge fanaticism and superstition by presenting possible futures (Clarke 2000: 247–9). For Clarke, SF can challenge conservative mindsets through narratively embodied thought experiments. Thus, essays here demonstrate how science fiction challenges presumptions about gender, technology, or the autonomy of the individual personality, among other issues. Reacting against Clarke’s educative impulse, many SF writers, particularly since the 1960s, have created playful narratives which set up multiple meanings for the reader to negotiate. Clarke has been described in the press as the “prophet of the space age” and similarly Doris Lessing admitted in interview with Brian Aldiss that in her own SF she consciously borrowed the figure of the “warner or prophet, who arrives from somewhere and tells the people they should behave differently, or else!” (Ingersoll 1996: 169–70). Her purpose is closer to that of the jere-miad or warning usually expressed through dystopian narrative.

For reasons of space, this companion limits its coverage to Anglophone SF and as a result understates the importance of Jules Verne, German films like *Metropolis*, or Russian SF. For commentary on Verne, see Costello (1978) and Smyth (2000); on European SF, see Rottensteiner (1999); and on German SF, see Fischer (1984). Despite these unavoidable limits on coverage, many of the essays in the present volume demonstrate an awareness of how science fiction refers across cultures, drawing on a shared pool of narratives. Even within a single culture, for example, the essay on Australian science fiction demonstrates that it is as old as realism within that country, and that its particular inflections of the “lost race” theme or of dystopias are directed towards exploring and interrogating emerging national identity. Nalo Hopkinson and Uppinder Mehan’s 2004 anthology of postcolonial SF, *So Long Been Dreaming*, combines stories from different cultures in a collection that critiques “colonizing the natives . . . from the experience of the colonizee” (Hopkinson and Mehan 2004: 9). This anthology demonstrates the continuing adaptability of SF to new needs of debate.

In 1927, Aldous Huxley stated: “The future of America is the future of the world” (Huxley 2001: 185) and *Brave New World* could be read as an early parable of globalization. The prominence – should we say dominance? – of American SF in this volume is unmistakable. John Clute has summarized the pattern of modern SF narratives as reflecting a “First World vision, a set of stories about the future written by inhabitants of, and for the benefit of readers who were the inhabitants of, the industrialized Western world, which dominated the twentieth century; simplistically, it was a set of stories about the American Dream” (Clute 2003: 66). This conclusion is not at all simplistic because Clute is discussing the institutionalization of SF and, with that, its continuing promotion on a commercial scale previously unimaginable. The first bibliography of SF published in Greece confirms this general impression. Over some 200 pages of listing, around 170 American SF writers are cited, whose sheer quantity overwhelms the small number of practicing Greek authors; and the tables do not include English-language imports, so the imbalance must be even more

stark (Pastourmatzi 1995). These figures suggest that in non-Anglophone countries the emergence of science must involve a negotiation of the market dominance by American SF. Takayuki Tatsumi's essay in this companion asks the question "what is Asian science fiction?" and offers in answer a description of how SF is produced through encounters between indigenous traditions and Western (which in practice has come to mean increasingly American) SF. Apart from the numerical growth in SF publications in other cultures, the examples above are signs of how SF is being studied and promoted; there are now web portals on Indian and South African science fiction.

Throughout this companion the reader will constantly encounter the figure of the border. In the preceding paragraph I was outlining a territorial problem that complicates the relation of SF to its local culture. Even on the microscale of the individual readings that conclude this volume, however, we see instances of how SF straddles or challenges boundaries: Charlotte Perkins Gilman's *Herland*, for instance, reverses the convention of the "lost world" narrative at the expense of its male explorers; *Brave New World* depicts a geometric line separating civilized from barbaric and then describes examples of "leakage" across that line. On a broader scale, M. Keith Booker explains how SF might reinforce or interrogate the polarities of the Cold War; Mark Bould and Christine Cornea consider the interweaving of human and electronic construct in the film and fiction of cyborgs; and Fred Botting explores the intersections between SF and the Gothic. One absence in this collection has been quite deliberate. No attempt has been made to define science fiction. Instead, the essays present it as a multigeneric field (who could say with certainty where SF ends and fantasy begins?) and its narratives as repeatedly challenging the stability of boundaries between categories and concepts.

The essays in this volume move from the general to the specific. The opening three chapters engage with science fiction in its broadest aspects; then follows a section discussing central issues in SF like its presentation of utopias, its concern with ecology, or the role of gender in SF. "Genres and Movements" considers some of the types of SF that have emerged over recent decades and the attendant debates about these subgenres. A section on film was essential because more and more we tend to think of science fiction titles as indicative of a group of works: a novel and a movie adaptation at the very least. The next group of essays extend discussion to different cultures around the globe and make explicit issues of cultural identity which are raised elsewhere in the volume. The final two sections address a selection of key SF writers and offer close readings of individual works, placing them in their historical and cultural contexts.

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PART I
Surveying the Field

Hard Reading: The Challenges of Science Fiction

Tom Shippey

Science fiction is arguably, and in several respects, the most challenging form of literature as yet devised. The claim may seem a strange one to someone familiar only with commercially mass-produced series, the “Star Trek” or “Star Wars” novels derived from popular TV and cinema productions. Nevertheless, to begin with something relatively straightforward, it can be shown that reading (or even viewing) any form of science fiction does involve one extra *intellectual* step over and above those necessary for reading other forms of fiction. The point may be made by comparing two superficially similar openings, one from a “mainstream” novel, the other from science fiction.

The “mainstream” novel is George Orwell’s *Coming up for Air* (1939), and it begins with a description of a man shaving:

The idea really came to me the day I got my new false teeth.

I remember the morning well. At about a quarter to eight I’d nipped out of bed and got into the bathroom just in time to shut the kids out. It was a beastly January morning, with a dirty yellowish-grey sky. Down below, out of the little square of bathroom window, I could see the ten yards by five of grass, with a privet hedge round it and a bare patch in the middle, that we call the back garden. There’s the same back garden, same privets, and same grass, behind every house in Ellesmere Road. Only difference – where there are no kids there’s no bare patch in the middle.

I was trying to shave with a bluntish razor-blade while the water ran into the bath. My face looked back at me out of the mirror, and underneath, in a tumbler of water on the little shelf over the washbasin, the teeth that belonged in the face. It was the temporary set that Warner, my dentist, had given me to wear while the new ones were being made. I haven’t such a bad face, really. It’s one of those bricky-red faces that go with butter-coloured hair and pale-blue eyes. I’ve never gone grey or bald, thank God, and when I’ve got my teeth in I probably don’t look my age, which is forty-five. (Orwell 1939: 3–4)

Quite how many things Orwell is trying to say in this passage is arguable. But probably from the 250 words cited one could make a list of some 20–5 data – a datum being a discrete fact stated or implied in the passage, such as: “the narrator’s house has a bathroom,” or “the narrator’s house has a garden,” or “the narrator’s house has only one bathroom,” or “the narrator has children” (with whom, inferentially, he has to share the bathroom), etc. In addition to these, we could easily generate a string of more debatable conclusions, such as “the narrator tries to economize on razor-blades, even though these are/were cheap,” or “the inhabitants of Ellesmere Road include retired or unmarried people, who have no children.” A fuzz of such speculation must in some way surround the reading experiences of this passage.

Yet despite that what most readers work out from their 20–5 data must be something like this:

(1) The narrator (to use Northrop Frye’s “theory of literary modes,” Frye 1957: 33–34) is “low mimetic,” and on the verge of becoming ironic. He has false teeth, he is middle-aged, his appearance is undistinguished, we will learn in the next paragraph that he is fat.

(2) The narrator is “lower-middle-class”: his house has only one bathroom, the W.C. is in it, there are at least four people to share it (counting the children’s inferential mother). Mornings are accordingly competitive occasions when it comes to using the bathroom. This major inconvenience is dictated by economy, as is the size of the garden, and the bare patch in it, which tells us that children play in their gardens (because they have nowhere else to go). Orwell is particularly clear about these class-marking details: the narrator is a house-owner, and the house has a garden (so it is not a “back-to-back,” a working-class house). But it is a small garden directly under the bathroom window, and the window itself is a “little” one. On the information already given, most English readers, in 1939 or for many years afterwards, could and would make accurate guesses about the narrator’s income and life-style. That is what Orwell wants them to do.

(3) The narrator’s life-style is a drab one. Whether this fact should be related to his class status, whether drabness is a necessary part of “low mimesis,” these are precisely the themes of the novel (which says in short that they are all related but, very passionately, ought not to be). Just the same, the fact is there, in the “beastly” morning, the “dirty” sky, the “little” square of window, the “bare” patch of garden, the “bluntish” razor-blade, and so on. Stylistically, the main qualities one might identify in the passage are its directness and single-mindedness. Orwell, it seems, has only a few things to say; while he will substantiate these with many details, all the details will point in one direction.

It is this which makes *Coming Up for Air* such a satisfactory if elementary example of how a nonscience fiction novel works. There is no doubt about its data, and very little about what the data mean. There are some details of whose meaning a nonnative or noncontemporary reader might be doubtful, like the “quarter to eight” rising:

briefly, seven was the time for the working class to get up, to walk or cycle to work at eight, while the nine-o'-clock-starting middle class got up later, to catch their trains or buses for work. But these cause no serious trouble because they confirm or are confirmed by all the others. In the whole passage there is no jarring or inconsistent note.

Compare a matching passage from science fiction, again the opening of a novel, again a man shaving: this time from Frederik Pohl and C.M. Kornbluth's novel of 1953, *The Space Merchants*:

As I dressed that morning I ran over in my mind the long list of statistics, evasions, and exaggerations that they would expect in my report. My section – Production – had been plagued with a long series of illnesses and resignations, and you can't get work done without people to do it. But the Board wasn't likely to take that as an excuse.

I rubbed depilatory soap over my face and rinsed it with the trickle from the fresh-water tap. Wasteful, of course, but I pay taxes and salt water always leaves my face itchy. Before the last of the greasy stubble was quite washed away the trickle stopped and didn't start again. I swore a little and finished rinsing with salt. It had been happening lately; some people blamed Consie saboteurs. Loyalty raids were being held throughout the New York Water Supply Corporation; so far they hadn't done any good.

The morning newscast above the shaving mirror caught me for a moment . . . the President's speech of last night, a brief glimpse of the Venus rocket squat and silvery on the Arizona sand, rioting in Panama . . . I switched it off when the quarter-hour time signal chimed over the audio band.

It looked as though I was going to be late again. Which certainly would not help mollify the Board.

I saved five minutes by wearing yesterday's shirt instead of studding a clean one and by leaving my breakfast juice to grow warm and sticky on the table. But I lost the five minutes again by trying to call Kathy. She didn't answer the phone and I was late getting into the office. (Pohl and Kornbluth 1955: 1–2)

How long is it, one might ask, before a reader who does not already know realizes that this is science fiction? And how does such a reader realize? The answers must be (a) on reading “depilatory soap,” and (b) on realizing in rapid succession that depilatory soap does not exist, that for it to exist some sort of chemical breakthrough would be necessary, that such a breakthrough nevertheless would be exploited, just like freeze-dried coffee. The reader of this phrase is in fact – if male and middle-aged – likely to remember a string of shaving-technology innovations, from the aerosol can of shaving cream to the coated blade to the double, treble, and quadruple blade, with the concomitant development of electric, cordless, and rechargeable-battery razors; and at once to note the fact of a progression, to set “depilatory soap” in that progression, to realize it is as yet an imaginary stage, but also that the existence of such stages (all at one time imaginary) is by no means imaginary. “Depilatory soap” is not-real; but it is not-unlike-real. That, in miniature, is the experience of reading science fiction. As well as recognizing data, you recognize nondata; but since these are data within the story, they are well labeled *nova data*, “new things given.” The basic

building-block of science fiction (the term is Darko Suvin's, Suvin 1979: 63–84) is accordingly the *novum* – a discrete piece of information recognizable as not-true, but also as not-unlike-true, not-flatly-(in the current state of knowledge)-impossible.

How many novums, in the sense given, are there in the passage quoted? Probably, around fifteen. Some are easily identifiable: there is no more doubt about the depilatory soap than about Orwell's "bare patch." At the other extreme – as with Orwell's "quarter to eight" – there are cases where a non-American or noncontemporary may be unsure whether he or she is confronting a novum or a datum. The "quarter-hour time signal . . . over the audio band" sounds futuristic, but then time signals on radio and TV are common enough. There are other details over which the experienced science fiction reader is unlikely to hesitate. Water, for instance: salt water comes out of the tap (one novum); so does fresh, but it trickles; using fresh water for washing is "wasteful, of course"; fresh water is supplied by the government to which the narrator pays taxes. There is a string of novums here, but no reader can register them without making some attempt to put them together. In the world of this novel, we realize, natural resources are unexpectedly scarce; so scarce that only government can be allowed to control them; this narrator is not entirely loyal to his government. There is a similar string of novums and inferences at the end of the second paragraph. "It had been happening lately" implies (a) change, (b) recent change, and (c) frequent occurrence, so, potentially irreversible change. "So far they hadn't done any good" backs up the notion of irreversibility.

More inferences come, however, from the five words "some people blamed Consie saboteurs." "Some people" implies "not everyone" and in particular not the narrator. "Consie" even now – and even more in 1953 – sets up the parallel with "Commie." If "Commie" < "Communist," what is the missing term in the sequence "Consie" < . . . ? An astute reader might guess the answer "Conservationist" (by inference from the interest in fresh water). But any 1953 reader was likely to note:

- (1) In the world of this novel, Communists are no longer a threat. But,
- (2) McCarthyite attitudes are still present. So,
- (3) if "Commies" were just a scapegoat, maybe "Consies" are too. This is backed up by the failure of the "loyalty raids," as (2) is by their existence.

But this last inference, when contrasted with those stemming from the fresh water/salt water opposition, raises a further query more basic to the structure of the whole novel. If "Consies" cannot be blamed for the potentially irreversible change coming over the narrator's horizon, what can? Something, clearly, which neither the government nor the skeptical narrator would like to think about: it is, to be brief, the ghost of Thomas Malthus in horrible alliance with the descendants of the Coca-Cola Company. Limited resources are bad enough. When they coexist with an ethic that demands continuous increases in consumption (and does not scruple to use physical and emotional addiction to get these increases), then you have the ground rules for the Pohl and Kornbluth dystopia.

But it does not start with ground rules. It starts with novums. To read *The Space Merchants* – to read any science fiction – one has first to recognize its novums, and then to evaluate them. There is a discernible and distinguishable pleasure at each stage, as you realize how things are different, how they are similar, and go on to wonder, and to discover, what causes could have produced the changes; as also to speculate what causes have produced the effects of the real world, the effects with which we are so familiar that in most cases they are never given a thought. It is true that readers are unlikely to stop and chew over the implications of “depilatory soap” or “Consie saboteurs” in the way that this discussion has done, but then readers of Orwell do not stop to boggle over the implications of “bare patch in the middle” or “got into the bathroom just in time” either. Yet the latter group certainly understands at some level that Orwell is writing about class, with a strong element of social protest. The reader of *The Space Merchants* likewise soon has a clear idea that its authors are similarly attacking what they see as a developing consumer culture.

Comparing the two passages enables one to see the force of Darko Suvin’s careful and thoughtful definition of science fiction, that it is:

a literary genre whose necessary and sufficient conditions are the presence and interaction of estrangement and cognition, and whose main formal device is an imaginative framework alternative to the author’s empirical environment. (Suvin 1979: 7–8)

“Estrangement,” with reference to the examples given, means recognizing the novum; “cognition” means evaluating it, trying to make sense of it. You need to do both to read science fiction.

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Another way of making the point above would be to say that science fiction must intrinsically be a “high-information” genre. “Information,” as the *Oxford English Dictionary* tells us, has in recent years become a technical as well as a colloquial term. It now means:

As a mathematically defined quantity . . . now esp. one which represents the degree of choice exercised in the selection or formation of one particular symbol, sequence, message etc., out of a number of possible ones, and which is defined logarithmically in terms of the statistical probabilities of occurrence of the symbol or the elements of the message. (see *OED Supplement Vol. II, 1976*)

This sense seems to have become common only after Second World War, and to be associated with “information theory” and cybernetics. There is a literary point to be drawn from it, though, and it is this. In English, as in other languages, there is a high degree of “redundancy.” Some words can be readily predicted from their context,

especially “grammatical” as opposed to “lexical” items. If, for instance, the fifth or the seventh word of the Orwell passage were to be blanked out, and the rest of the sentence left, few readers would have much trouble in filling them in. The same is true of the “lexical” words “came” or “false” in that sentence. But by contrast, if “nipped” in sentence three were to be blanked out, most readers would probably fill in, as first guess, “got” or “jumped” or “climbed.” “Nipped” is a higher-information word than “came,” or than “the” in sentence one; it is less predictable, and there are more choices available to fill its slot. Just the same, few if any words in the Orwell passage are entirely unpredictable, or particularly surprising, distinctive though Orwell’s style may be. The whole book is (no doubt deliberately) towards the low end of the English novel’s generally “medium-information” span.

Science fiction, however, is intrinsically a “high-information” genre. Novums, just because they are novums, are very hard to predict. Some of the words in the Pohl and Kornbluth passage would take many guesses to arrive at if they had been blanked out: yet Pohl and Kornbluth here are well toward the low end of the genre’s information-range. If one looks at the first few pages of William Gibson’s ground-breaking cyberpunk novel *Neuromancer* (1984), one comes upon at least a dozen words or phrases that could never be predicted, or recovered if deleted. Most of them are comprehensible, in context and by analogy with known usages – “nerve-splicing,” “coffin hotel,” “bedslab,” “temperfoam,” “mycotoxin,” “arcologies” – but all of them take at least a momentary effort, as does “seven-function force-feedback manipulator.” Others are never explained: “joeboys,” “livewire voodoo.” And one at least, “cyberspace,” has passed into standard usage, with Gibson credited by the *OED* as its inventor, though the meaning given to it by Gibson, “the consensual hallucination that was the matrix,” remains as yet “only science fiction.”

Words like “cyberspace” hang as it were on the edge of everyday experience, recognized instantly as filling a gap, but also betraying the existence of the gap. Sometimes they make one wonder why such a gap should exist. Why, for instance, is there in English no neutral-sex third-person singular pronoun – all our other personal pronouns are neutral-sex – equivalent to “one” but not including the speaker, not being impersonal? Its absence notoriously often gives offence, or leads careful writers into clumsy formulations like “he or she,” or “(s)he.” Yet the gap usually goes unnoticed, or is accepted as natural. In the last section of his *The Years of the City* (1984), however, Frederik Pohl rounds off his picture of a developing American utopia with a world in which such a pronoun is regularly used: instead of “he/him/his” or “she/her/hers,” one says consistently “e/um/uz.” Just to rub the point in, among the characters’ casual words of abuse are the neutral-sex neologisms “prunt” and “fugger,” while the normal word for “parent” is “muddy” (i.e., “mummy/daddy”). These words are words carrying very high “information,” in the technical sense given above. If they were blanked out of the text, they would not be guessed. They are, then, highly unpredictable – but once introduced they point a powerful if silent finger at the terms we have come to expect. They make us aware of the latent presuppositions, the unconsidered information about our own habits concealed within casual and normal speech. *Things do*

not have to be the way they are. This is the assertion that science fiction insistently conveys, in its scenarios, its explanations, even in its vocabulary – through all the various forms of the novum.

There is a kind of symmetry, furthermore, in the way in which science fiction has learned to exploit the opposite of “high information,” not low information so much as “degraded information.” The classic subgenre to illustrate this is the “enclosed universe” story, whose paradigmatic example is H.G. Wells’ 1904 novella, “The Country of the Blind.” In this a sighted man stumbles into an enclosed Andean valley where a genetic deficiency has rendered all the inhabitants blind, but slowly enough for them to adjust to and for generations to survive in an easy and ordered environment, with no natural enemies. One would naturally think that “in the country of the blind the one-eyed man is king,” but in Wells’ story “blind men of genius” have evolved a new cosmology which entirely fits the evidence of the universe that they possess, and denies the possibility of any other. The sighted person is diagnosed as mad, and finds it impossible to prove his sanity (in the original version. Much later [1939] Wells gave the story a different and happier ending, thus starting a science fiction of “cop-out” endings, as if the logic of the form were too challenging even for its creators.) Wells’ basic plot has, however, been repeated many times, in several imagined scenarios of enclosure – most commonly, the giant spaceship or inhabited asteroid making a generations-long journey between stars, as in Robert Heinlein’s *Orphans of the Sky* (1963 in book form, but published as two novellas in *Astounding Science Fiction*, 1941), Brian Aldiss’s *Non-Stop* (1958), or Harry Harrison’s *Captive Universe* (1969). Each author rings the changes on plot and scenario, but a basic feature inherited from Wells is that the cosmology of the enclosed universe – which we, the readers, are quite sure is false, information seriously degraded – has to be made to seem reasonable, plausible, indeed (given the evidence available) inescapable. It is the central character trying to reach what we would take to be a true understanding who appears insane. So vital is this reversal of “common sense” (in fact the title of one of Heinlein’s two originating novellas) that one almost inevitable feature of such stories is discovery of the “captain’s log,” an account written by someone sharing our readerly viewpoint which explains how the “enclosed universe” arose: for a truly closed system based on degraded information (like Wells’ blind persons’ valley) must have its own methods of ensuring that correct information (like the existence of sight) is not received.

What has not been sufficiently realized is that the most famous examples of science fiction in the twentieth century, Orwell’s *Nineteen Eighty-Four* (1949), and Aldous Huxley’s *Brave New World* (1932), are both “enclosed universe” stories conforming, sometimes in close detail, to the general pattern. Orwell’s hero Winston Smith is an inhabitant of the enclosed universe of Ingsoc, where it is indeed his job to destroy any information that may contradict Big Brother’s closed system. Huxley’s Savage is not an inhabitant of the “Brave New World,” but an import into it from a closed system of his own, but it is striking that the closed system he inhabits – a purely personal one derived from one book, the works of Shakespeare – is much more comprehensible, natural, and familiar to the mid-twentieth-century reader than that of his

competitor in the novel, Bernard Marx. In each case the real-world reader is likely to empathize with the rebel, the dissident, but in both cases (once again, as in Wells' novella) the rebel or dissident is eventually broken by the power of the closed system. It is striking, furthermore, that the classic function of the "captain's log" is carried out in Orwell's novel by the book, *The Theory and Practice of Oligarchic Collectivism*, which supplies Winston with the historical memory he has been unable to recreate by himself. Meanwhile a classic example of "degraded information" is given by Winston's conversation, in Part I, chapter 8, with the "old prole": everything the old prole says (we realize) is true, and it entirely contradicts everything that the Party has told Winston to believe about history and class and morality. But the old man's memories, of Boat Race night, and top hats, and Speakers' Corner in Hyde Park, and pints of beer, though perfectly precise, are so fragmented that Winston can make nothing of them. We see for a moment, so to speak, into Winston's darkness – and may well draw from it decreased belief in our own clear vision. For a further chilling reflection is the thought that possibly the reader's conviction, or assumption, of living in an open system where information has *not* been degraded may be just as false as that of Wells' "blind men of genius" or Orwell's Party loyalist O'Brien. Arguably, what "enclosed universe" stories tell us is that we are all living in the glass bottles of Huxley's novel, enclosed by the invisible constraints of society, convention, and language. In a further paradox, degraded information may be even more informative than high information, *if it allows one to perceive the process of degradation*.

On this theme science fiction has produced many complex and interesting variations. An extreme example is Russell Hoban's *Riddley Walker* (1980), written throughout in a nonstandard English which indicates a long period of linguistic breakdown and linguistic reformulation, and punctuated by variants of the "Eusa story" which has become the future society's originating myth, but which we discover only slowly – from a short account written in standard English (the "captain's log," so to speak) – is based on total but revealing misunderstanding of the legend of St. Eustace, the only fragment of our world's civilization to survive. But *Riddley Walker* has many science fictional ancestors and analogues, such as Walter Miller's well-known *A Canticle for Leibowitz* (1959), in which a future monastic order spends enormous effort on copying and illuminating a precious relic of their founder St. Leibowitz, which the modern reader realizes is merely a routine engineering diagram.

However, a point that has begun to appear from what has been said so far is that science fiction is not only the most intellectually challenging of genres, it also may well be the most *emotionally* challenging. The corollary of *Things do not have to be the way they are* is that *Nothing is sacred* – and in science fiction, "Nothing" means NOTHING. Science fiction habitually works through what one might call the "cancellation of iconicity." An example is the cover of the December 1966 issue of the magazine *Fantasy and Science Fiction*. On it a group of five figures stand round a giant half-buried statue, which appears to have been recently excavated, their poses signifying puzzlement, incomprehension. Yet the statue is perfectly recognizable, to us, as the Statue of Liberty, with its raised arm, seven-pronged diadem, and severely expres-

sionless features. What the picture says is that in some future time the Statue of Liberty, icon of America, will not only have been felled but also forgotten, forgotten so thoroughly that future excavators will not even be able to guess its purpose: Shelley's "Ozymandias" in reverse, a symbol of the precariousness and provisional nature of meaning. To an American audience (and science fiction continues to be dominated by American writers and readers) this is a particularly threatening disfigurement of national myth.

Yet this too finds many analogues. An especially neat example is Norman Spinrad's short story from 1973, "A Thing of Beauty," first published in *Analog* January 1973, and later reprinted in Spinrad, *No Direction Home* (1975). This is set in a future America, depressed and bankrupt, in which an American antique dealer (almost the only paying trade left in the country) is visited by a Japanese billionaire who wants to buy an outstandingly impressive cultural artifact. The dealer, Harris, tries to sell the buyer, Mr. Ito, a sequence of American cultural icons, first the Statue of Liberty (now headless); then the baseball stadium, now derelict, of the New York Yankees; finally the United Nations Building. All three are rejected. The first is too sad. The second is greeted with great enthusiasm, but rejected in the end, in spite of Mr. Ito's own personal wishes, because he knows the stadium would carry no prestige within Japanese society. The third is rejected contemptuously as an icon of political failure. And then Ito sees the now-unused Brooklyn Bridge, and insists on buying it to be re-erected in Japan. The joke here is that Brooklyn Bridge has iconic status within America as the thing that only a hayseed would imagine he could buy, the colossal equivalent of a fake gold brick. But the joke turns on Harris, not Ito, once it has been taken away, re-erected, and turned into one of the wonders of the world. Ito proves his astuteness (and his wealth) by sending Harris a fake gold brick: only it is not a fake, it is pure gold.

What this story very clearly means is that it is the Japanese buyer who is the true American. It is he who shows strong feelings about baseball, sadness over the "Headless Lady" of Liberty. He respects the icons of America as the American dealer, anxious only to make a buck, does not. As for his rejection of the UN Building, what this proves (within the story) is that true Americans, like Mr. Ito, do not respect the UN, but false Americans, like the insurrectionists who spared it and the federal authorities who keep it "in excellent repair," do. Harris has more in common with these latter groups than with Ito: they are all engaged in "selling out" America. Spinrad's fable is indeed balanced between a creditable openness – being American to him is not a matter of nationality – and a chauvinist anger against an internationalism he finds incompatible with patriotism. There is a kind of symmetry, even, in the fate of the artifacts he mentions. Brooklyn Bridge can move to Osaka (where "Americanism," we may conclude, is alive and well); but the Statue of Liberty, literally and symbolically disfigured, has to stay where it is. Yet both movement and stasis symbolize failure, a failure whose icon is the "Headless Lady."

Spinrad's story is typical rather than exceptional. Many American authors have produced critiques of America, or stories of the Fall of America, turning routinely on the

disfigurement of myth or the “cancellation of iconicity,” and their efforts were preceded by a number of British authors from even before Wells’ time who imagined the destruction of London, Surrey turned into a battleground, *l’éroulement de l’Angleterre* (for which see, respectively, Richard Jefferies, *After London* [1885], H.G. Wells, *The War of the Worlds* [1898], and John Wyndham, *The Kraken Wakes* [1953]). Yet these images, while arresting, are also evidently highly threatening, to many deeply unwelcome. It is surprising, and encouraging, to find so many of them at home in a commercial, mass-entertainment genre; though one should add that it is a feature that makes much of the genre literally unreadable for those not prepared to have their certainties challenged. John Huntington has introduced to science fiction, along with Suvin’s “novum,” the idea of the “habitus,” the reader’s set of “values, expectations, and assumptions” (see Huntington 1991: 62–3, which further cites Bourdieu 1984: 101 ff.) It is not essential for science fiction – as one can see from almost any episode of *Star Trek* – to step outside the comfort-zone of modern Euro-American consumers, but it is surprisingly common. Only a minority, perhaps, is prepared to consider an alternative (national) habitus, a place where America in particular does not exist or has lost dominance.

National icons are furthermore not the only ones to be attacked and disfigured in this way. Even more unwelcome than challenges to patriotism, to the Anglo-American literary classes, are attacks on literature, cultural authority, and books themselves. There is not much more sinful to literary people than book-burning, few places more sacred than a library. Yet science fiction has delighted, from an early stage, indeed from Wells’ *The Time Machine* (1895) in images of “the dead library” (see Crossley 1991 for many examples). Thus Wells’ Time Traveler finds himself, in the “Palace of Green Porcelain” in chapter 11, staring at a room hung with “brown and charred rags.” He realizes after a while that these are all that is left of books, reflects on the “enormous waste of labour to which this sombre wilderness of rotting paper testified,” and turns away in a quest for some more “useful discoveries” in the museum’s science sections (see Stover 1996: 140–1. It is interesting, if predictable, that the modern editor of Wells’ original text here attempts to make the Time Traveler’s remarks seem ironic or illogical.)

The contempt for books in their physical form extends furthermore to what the books contain, to literary tradition. Wells’ *Island of Dr. Moreau* (1896) overtly refers to texts as venerable as Homer’s *Odyssey* and Milton’s *Comus*, with further strongly implied reference to Swift’s *Gulliver’s Travels*, but what the story has to say as a whole is quite simply that these ancient myths or legends are wrong. The threat of Circe or Comus is to turn men into beasts, and this is what Wells’ central character, Prendick, thinks that Dr. Moreau is doing. But Prendick is also entirely wrong: what Moreau is doing is trying to turn beasts into men, and while this may remove the immediate threat to Prendick, it creates a much more serious threat to humanity as a whole. If beasts could be turned into men – and in the scandalized correspondence which followed Wells’ story (for which see Philmus 1993: 197–211) Wells insisted that in the knowledge of the time, this was not impossible – then there is no significant dif-

ference between humanity and what used to be called the “animal kingdom.” There is a strongly Darwinian element about Wells’ assertions, and a strongly blasphemous element, with Moreau usurping the role of the Creator who “made man in God’s image.” But there is a powerful attack on literary tradition too – and on literary language, for at the pivotal point of the story there is a conversation in what one can only call “pidgin Latin,” a dreadful affront to Classical education and to the Victorian class-system which relied so much on it. Even more important, at the end of *Gulliver’s Travels* Gulliver cannot stop seeing human beings as yahoos, and it is a staple of modern literary comment to insist that that is because Gulliver is mad. But when Prendick returns home suffering from the same delusion, seeing people as cats and leopards and monkeys, the story makes plain that it may not *be* a delusion but a Darwinian insight: Wells claims an authority which he denies to Homer and Milton and Swift, based simply on knowing more, and specifically on knowing more *about science*. Science is the ultimate authority. This overrides literature, and legend, and tradition, and myth.

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As a result, science fiction can further be seen as not only intellectually and emotionally challenging, to all readers, but also and in particular to professional readers, *ideologically* challenging – something that probably accounts in part for the long hostility it has faced from literary critics. An argument could be made to say that this should not be so, that science fiction in fact provides a great deal of what modern critics (say they) have long wanted. Consider for instance one further extended passage, this time from Kingsley Amis’ “alternate world” novel, *The Alteration* (1976). Amis’ novel is set in a twentieth century in which the Reformation never took place, and the Catholic Church has accordingly remained dominant across Europe (though not America). Near the start he describes the national shrine of this alternative England, St George’s Cathedral at Coverley, Oxford, centre of the English Empire:

Apart from Wren’s magnificent dome, the most renowned of the sights to be seen was the vast Turner ceiling in commemoration of the Holy Victory, the fruit of four-and-a-half years’ virtually uninterrupted work; there was nothing like it anywhere. The western window by Gainsborough, beginning to blaze now as the sun first caught it, showed the birth of St Helena, mother of Constantine the Great, at Colchester. Along the south wall ran Blake’s still-brilliant frescoes depicting St Augustine’s progress through England. Holman Hunt’s oil painting of the martyrdom of St George was less celebrated for its merits than for the tale of the artist’s journey to Palestine in the hope of securing authenticity for his setting; and one of the latest additions, the Ecce Homo mosaic by David Hockney, had attracted downright adverse criticism for its excessively traditionalist, almost archaising style. But only admiration had ever attended – to take a diverse selection – the William Morris spandrels on the transept arches, the unique chryselephantine pyx, the gift of an archbishop of Zululand, above the high altar, and Epstone’s massive marble Pieta. (Amis 1976: 7–8)

The passage of course illustrates once again the presence of the novum. Nine works of art are mentioned in this passage, and it is vital for the reader to recognize that all of them are fictional. At the same time, however, all except one (the pyx) are ascribed to known English artists who are known *not* to be fictional. The first of them, Wren's dome, perhaps causes no particular difficulty. There is a Wren's dome at St Paul's, and translating it to St George's is not much of a change. As the works continue to be listed, though, two effects are created: one, a growing awareness of what might have been if talents as scattered as Hunt's and Gainsborough's had been brought together, and two, a realization that in *this* world, Amis' imaginary world, outsiders have been reconciled and brought into harmony, as they were not in real history. In our world William Blake found no artistic patron till his last years, and worked in the cheap but fading medium of watercolor. William Morris created a series of murals for the Oxford Union; they too were allowed to fade and disappear. On his trip to Palestine Holman Hunt painted, in our world, not "The Martyrdom of St George" but "The Scapegoat" – an image of rejection, not of triumph. In Amis' world all these talents have been enlisted to create a genuine national shrine, which includes in it not only the half-mythical St George (England's patron saint, removed in our world from the Catholic canon in 1969), but also the genuine (if clearly mythicized) figures of St Helena and St Augustine. The cathedral is a center at once of artistic genius, of national feeling, and of Catholic feeling. "There was nothing like it anywhere," says Amis, and there *is* nothing like it anywhere: our loss, our failure.

But the sense of failure becomes most acute, perhaps, at the "Ecce Homo" mosaic by David Hockney. In our world David Hockney was born in Bradford, England in 1917, but moved to Los Angeles in 1978. He is famous for his creation of the "California modern" style. How strange to see a work of his criticized for traditionalism, even archaism! And the work is an "Ecce Homo." This means only "Behold the Man," and is traditionally a portrait of Christ taken down from the Cross, as is clearly intended here. In our world Hockney created no religious art. He is, however, as famous for his homoerotic works as for his modernism; and in the dialect of Amis and his coevals, "homo" was a disparaging term for a homosexual. It is hard to know how to react to this imagined mosaic. It seems to say: (a) in the alternate world Hockney would have had no need to go into exile, (b) he would have been brought into the center of the culture instead of being marginalized, (c) he would have been a traditionalist not a rebel, and (d) his talents would have been recognized and enlisted for religious ends. So far so good. But (e), perhaps, his homoeroticism would have been suppressed, and (f), even more uncertainly, it would have broken out in yet another way, in portrayals of masculine beauty in a religious mode.

All this, one could say, is an exact rendering of the critical concept of "textuality." According to the Toronto *Encyclopedia of Contemporary Literary Theory* (Makaryk 1993, cited here only as a statement of what is generally accepted):

the term marks both a breakdown of the boundaries between literature and other verbal and nonverbal signifying practices, and a subversion of the principle that any text can function as an object whose meaning is coherent and self-contained. (Jones 1993: 641)