The scene opens inside a shed behind a shepherd's cottage. Victor Frankenstein's monster has been hiding there for days, studying the cottage's inhabitants:

I found that these people possessed a method of communicating their experience and feelings to one another by articulate sounds. I perceived that the words they spoke sometimes produced pleasure or pain, smiles or sadness, in the minds and countenances of the hearers. This was indeed a godlike science, and I ardently desired to become acquainted with it.

An alien being, with no knowledge of any language, discovers the nature of human language in this passage of Mary Shelley's, with which Walter Meyers opens his fascinating study of the science of linguistics in science fiction. It is a pleasure to see language described as a 'godlike science' and a challenge to imagine the steps by which Shelley's monster reaches his conclusion. But then writers in this genre seem always to have skimmed on the science when that would serve the fiction, and linguistics fares no better than astronomy or biochemistry in this regard. Indeed, it is one of Meyers' first contentions that linguistics is less well served than the natural sciences: The problem lies both with the readers--

I would think that there is a fairly good chance that the writer can presume that the reader will know something about the laws of thermodynamics.... It seems probable that the reader would be acquainted with at least the idea of cloning in biology.... But the situation is much different with language. Can the writer presume that his reader knows how the laws of analogy operate in
the development of natural languages? Will the reader know what the phonemic principle is, or what a recursive rule is? Almost surely not.

and the writers--

...science fiction is a window not into the future but into the present: in its stories we see what the writers know about language in general and historical linguistics in particular. Sadly, that knowledge is seldom more than that of the man in the street. In fact, exactly the same ignorance, anxieties, and misconceptions show up in the majority of science fiction. (pp. 36-7)

though Meyers holds out the hope that enlightened writers might foster enlightened readers:

Science fiction...is especially suited for giving instruction about language, and is a medium especially popular with the young. The pioneers of the American pulps saw science fiction as a means of teaching science. Although science fiction seldom achieves that goal, and although we have no right to demand anything more than art from its writers, the possibility is always there. And the possibility includes the chance to say something about language, something liberating and tolerant and entertaining. (p. 209)

We do not know how close science fiction can get to this goal, but Meyers' book does a better job of it than many outright texts in linguistics. Aliens and Linguists presupposes no acquaintance with language studies beyond the major terminology of traditional grammar, roughly from noun and verb to infinitive and participle (although many students nowadays do not have a firm grasp of any of these). It also presupposes no acquaintance whatsoever with the works of science fiction it discusses; brief quotations and plot summaries supply the necessary background for the reader, who doesn't even have to LIKE science fiction to appreciate the points Meyers makes. Readers who do like science fiction should find Meyers' selection of works for discussion attractive: they are, for the most part, easily available --can be found in the typical public library--yet he does not restrict himself to the best-known examples. In either case, the result is an informative, thought-provoking, often very funny presentation of quite a lot of linguistics, addressed to a general audience and organized around one central puzzle (how to communicate with aliens) and, in the later chapters, one central question of social relevance (whether language can be used to enslave and to liberate). The book would serve well as the major assigned reading in an honors introduction to linguistics course--the major but not sole assigned reading, because a more orthodox text is needed for a systematic account of technical matters, and in an honors rather than ordinary introduction, because of the book's decidedly nonlinear presentation of the subject matter of linguistics, which many students would simply find frustrating.
Bits of ideas and pieces of conceptual apparatus are scattered throughout the book. A sampling: connotations vs. denotations of words (pp. 8-9), a refutation of the idea that short words are the oldest (pp. 16-7), folk etymology (p. 19), borrowing (pp. 19-20), glottochronology (pp. 24-5), cognates (p. 34), coining (pp. 30-2), verb-final syntax (p. 34), regularization of inflection (p. 35), tones as phonemes (p. 49), Washoe and her kin (p. 56), chimp physiology and the ability to speak (pp. 56-7), kinesics (pp. 59-60), channel capacity (pp. 63-5), word-level vs. phrase-level tone (p. 72), clicks (p. 73), displacement (p. 75), the Chinese writing system, none too clearly described (pp. 75-6), the derivative character of writing and of 'sign languages' (presumably finger-spelling is meant) (p. 77), broadcast transmission (pp. 78-9), rapid fading (p. 81), ostensive definition (p. 90), the problems of interpreting pictorial symbolism (pp. 91-2), discovery procedures (p. 97), characteristic features of Indo-European language structure (p. 107), the history of writing (p. 136), alienable vs. inalienable possession (pp. 165-6), English derivational morphology (p. 175), voicing and points of articulation (pp. 179-80), universals of language structure (pp. 186-8), right branching and self-embedding (pp. 188-90), meaning transfer (pp. 196-7). The phoneme and morpheme are rather hastily introduced on p. 48 and then reappear in a discussion of 'tactemes' on p. 83; a more extended treatment of the phoneme, along with the term minimal pair and the concept of (but not the term) positional variation, appears on p. 99, while the term allophone crops up in a later (p. 179) critique of one writer's mangled presentation of the phonemic character of the θ - δ distinction in English. Prominent Western linguists of the past few centuries are mentioned or cited throughout the book. Not all of this is perfectly accurate or entirely clear, but on the whole, especially given that we are dealing here with pocket-sized explanations and thumbnail sketches, it is admirably done.

We now provide a chapter-by-chapter description of the book's main themes, both in its analysis of language in science fiction and in its presentation of the ideas of linguistics.

The prefatory first chapter comments on the problem of discussing the sound of language in science fiction (a topic that could be used to motivate some more systematic discussion of articulation and acoustics) and of the general neglect of syntax in the genre, language being treated primarily as a matter of the pronunciations and meanings of words (these observations lead naturally to some discussion of dictionaries and of why they are incomplete as language descriptions).

Chapters 2 through 9 examine the puzzle of communication with aliens, chapter 2 dealing with beings alien to us by virtue of their separation from us in time. 'The Future History and Development of the English Language' looks at time travel (in science fiction this is usually travel into the future) as a source of insight into popular beliefs about language change. Degeneration theories are countered,
the inevitability of language change is stressed (p. 26 mentions an A. E. Van Vogt story in which a man unexpectedly travels 7,000 years into the future—without detecting any differences in language or having his language noticed!), the widespread desire for a common language throughout the world (or the universe) is remarked on, and misconceptions about dialects are ventilated in Meyers' first discussion of the relationship between synchronic variation and diachronic change, a topic treated at greater length in the first section of chapter 9 (in passing there is some reference on pp. 33-4 to the writer's dilemma in choosing between accuracy and comprehensibility in the representation of dialects; a topic surveyed thoroughly for non-science fiction by Norman Page in *Speech in the English Novel*).

Chapter 3 moves on to 'Resident Aliens: Mummies and Machines'—two groups of alien presences, not now alive, on the earth. In the first group are former civilizations, whose languages are available to us through decipherment (a topic that leads to a discussion of the arbitrariness of the sign on p. 39). In the second are machines, communicating with us by synthesized speech (about which Meyers is, in our view, extremely optimistic) and machine-generated speech. Both cases give rise to the question, 'What sort of communication systems are we to count as language?' (p. 38).

'Resident Aliens: Monkeys and Marine Mammals' are the announced subjects of chapter 4, which deals with the communication systems of various animals and with attempts to instruct animals in language-like systems. Though 'monkeys' appears in the chapter title, the text correctly refers to 'apes' and 'nonhuman primates' where appropriate. Apes get less attention here than dolphins, 'the current darlings in animal communication stories' (p. 60), though there is enough on apes to spur class discussion and further reading. Meyers gives a suitably wary exposition of John Lilly's dolphin studies in section 11 of this chapter. Throughout the chapter are hints at what are to be taken as the essential properties of language, but these are not gathered together or systematically discussed (p. 67 has a rather cryptic reference to phenomena that are 'simple and redundant rather than complex and specific', the latter being linguistic).

The stage is set for TRULY alien beings in chapter 5 ('The Medium is the Message'), which surveys possible channels of communication, beginning with the vocal-auditory channel (sometimes employed via divergent physiology, and sometimes in frequency ranges inaccessible to human beings) and moving through a variety of alternatives, usually those available to humans. The visual channel is a great favorite of science fiction writers; in a linguistics class, Meyers' presentation could be used as a springboard for deeper treatments of writing systems and the sign languages of the deaf. Chapter 6 ('Take Me to Your Leader') confronts the problem of first contact with these aliens square on. How to communicate with them? (Meyers remarks on 'the usefulness of having a linguist along' in space explorations—a pointed reminder to future potential employers of linguists.) There are
several cop-out possibilities: an existing shared language, or mystical communication without any real comprehension of the language. A few writers have explored the idea of devising a compromise language— in a linguistics class, perhaps trade languages, pidgins, and creoles could be introduced here—but most have opted for space explorers who learn the alien language by one means or another (chapter 7), explorers who fall back on technology, in the form of the automatic translator (chapter 8), and explorers who rely on telepathy (chapter 9). Chapter 6 introduces the issue of differences in cultural background as a problem in language translation, especially with respect to the use of mathematics, pictorial symbolism, or astronomical drawings in interstellar communication. The issue is more general, of course; it is expanded on in Meyers' chapter 10.

Chapter 6 does not treat language contact effects short of acquisition of a new language, although these are quite common in science fiction. Borrowing (discussed later in the book in connection with thought control via language) is particularly frequent and deserves more discussion. It would be nice to have an example like the alien language of H. Beam Piper's *Fuzzy Sapiens*, which has borrowed heavily from English, even taking in (with small changes) words for ordinary objects for which there were existing native words; a food originally called *hokko-fusso* 'wonderful-taste' becomes *esteefee*, after its English name *X-T-3*.

Language learning (chapter 7) is certainly one aspect of linguistics that fascinates the person in the street. Meyers points out that plain old study and experience are the only known successful routes to a new language, but that science fiction writers (like everyone else) have been anxious to find ways of 'smoothing the road to fluency' (p. 106). Two tricks of the genre are to posit a space traveler unusually adept at language learning and to assume a very simple language to be learned; the issues that arise here could lead to good class discussion of child language acquisition versus adult language learning, if indeed one is versus the other. Meyers goes on to a series of 'better methods' of language learning, all based on scientific discussions in the popular literature: hypnosis, neural changes, sleep learning, electric shock, drugs, DNA/RNA. There is also the fairly popular literary device of the impressively named but undescribed technique for promoting language learning. This chapter closes with a poignant observation on (largely American) attitudes about language learning:

Writers of science fiction seldom spare their characters: they may slam their heroes' ships into planets or send their heroines to kill tigers with knives; they may freeze them into statues on Pluto or shoot them through exploding suns. Hardly any degradation or suffering is spared— with the exception of exposing them to the rigors of learning a foreign language. (p. 117)

If you don't want to LEARN the language, why not just plug in your automatic translator? Chapter 8 ('Plausibility and the Automatic
Translator') begins with a section on machine translation, of interest to language-oriented readers, and continues with two sections on plausibility requirements in the genre of science fiction, largely of interest to sci-fi analysts. In the first section Meyers differentiates two types of automatic translators--'a machine that translates from one known language to another' (p. 118), the realizability of which he discusses cautiously but optimistically; versus one with 'the ability to accept ANY language as input and translate it into a known language' (p. 119), or vice-versa, a machine for which the name Magic Decoder seems perfectly apt.

The succeeding chapter, 'Avoiding the Boring Stuff', treats telepathy: 'I do not see how we could have avoided weeks of linguistic bother, first principles of our respective grammars, logic, signifies, and so forth, boring stuff for the most part, before we could have got to anything like our present understanding' (H. G. Wells, quoted by Meyers on p. 132)—without that universal solvent of science fiction, telepathy. Astonishingly, this chapter is of considerable interest to linguists and linguistics students, on several different counts. First, there is a presentation of Meyers' contention that 'a universal telepathic power would slow down, and perhaps even halt [linguistic] change altogether, if (and this is an important condition) change in language results from normal but inevitable variation in speech forms' (pp. 134-5); there are several possible readings of this passage, covering territory from Hockett to Labov at least, but the emphasis on causes of change and on variation would be easy to use in the classroom. This first section then continues with an exposition of the problem of meaning—'the language barrier is not just one wall, but several: get past the word problem, and the concept problem remains' (p. 137)—which could provide a natural lead-in to discussions of imagery, cultural differences, and other topics. Meyers appears to be sympathetic to the philosophical (roughly, Jerry Fodor) position that natural languages serve in some sense as the languages of the mind. But 'with language as the code of the telepathic message' (p. 140), it follows that telepathy is of no use in first-contact situations (a place where it is much favored in science fiction). Section II of this chapter, on the mechanisms of telepathy (a wave phenomenon? an instantaneous effect?) is of dubious value to linguistically oriented readers.

The material reviewed so far makes up the bulk of the book. What remains is a three-chapter sequence treating further linguistic topics in science fiction: 'A History of Linguistics in Science Fiction' (I: chapter 10, and II: chapter 11) and 'The Children of Sir Thomas More' (chapter 12), on utopias and dystopias. In these chapters the issue of language and power gradually grows out of the earlier chapters' investigations of communication with aliens. The hinge in this development of ideas is the Sapir-Whorf hypothesis, the subject of section II of chapter 10.
Chapter 10, in fact, begins a great-man account of linguistics in science fiction. Its first section alludes to the great achievements of 19th century linguistic reconstruction (the methods are not illustrated), which Meyers sees as leading, through the OED compilers, to J. R. R. Tolkien and The Lord of the Rings, fiction that began as a superstructure around a previously invented language. An extended morphological/syntactic/philological analysis of 'Galadriel's Song' from Book I of LR (Meyers, pp. 150-6) illustrates practical analytical methods well, though it is very heavy in terminology; it might strike particular students as off-putting or as fascinating.

The second section of chapter 10 turns to linguistic relativity, with Whorf as the resident great man (Boas and Sapir hover in the background). There are brief allusions to a weak version of the Sapir-Whorf hypothesis (p. 168), but the text (almost surely inadvertently) gives the impression of adhering to a strong form. In any event, space/time travel is a natural locus for Whorfian questions, and Meyers does a good job on the whole. His critique of Vance's The Languages of Pao, a novel in which (as Meyers says, p. 66) linguistics is the plot, is especially nice.

Chapter 11 goes on to deal with General Semantics (clearly distinguishing it from garden-variety linguistic semantics on p. 171), largely to speculate as to why it has been so astonishingly popular in the science fiction literature. There is an extended criticism of Delany's Babel-17, a book full of misinformation about language and based on the questionable premise that (in the words of one of Delany's characters), 'If you don't know the words, you can't know the ideas'. The chapter goes on to critiques of Delany's Triton (influenced by Michel Foucault) and Watson's The Embedding (influenced by Noam Chomsky).

With the Sapir-Whorf hypothesis comes the possibility of molding minds (however slightly) for good or for evil. Aliens and Linguists would undoubtedly be very useful for group discussions of these issues, which are further explored in the final chapter, a treatment of some fictional good places, bad places and no places with more than ordinary linguistic interest. Meyers examines the work of James Cooke Brown, the author of both the utopian novel The Troika Incident, like Tolkien's trilogy a 'novel written to provide a fictional setting for a fabricated language' (p. 195), and also the fabricated language, Loglan, which is based on symbolic logic; the world of Walden Two, intended by its author, B. F. Skinner, as a utopia; and the ambiguously utopian realm of Ursula Le Guin's The Dispossessed. He sees all three fictional societies as no better than ambiguously utopian, since all are deeply conservative. In the domain of language, as elsewhere, they are devoted to preserving the status quo. Meyers argues that to do so each society must prevent lexical change (by borrowing, meaning transfer, or coining), this necessity leading in turn to an assortment of authoritarian measures--isolation from the outside world, government language regulation, the break-up of family groups, and tight control of the
means of communication. Though the analysis is too heavily word-based and probably underestimates the importance of the peer group as against the family in language acquisition, it is intriguing and thought-provoking. In class it could easily lead to discussions of language planning, usage and dictionaries, standard languages and dialects, national academies, and the spread of linguistic changes, among other topics.

Aliens and Linguists is directed at linguistics as represented in the genre of science fiction. Consequently, it plays down more purely literary matters, though these (naturally) often involve points of linguistic interest. For example, Meyers mentions in passing the relationship between Tolkien's invented languages and various natural languages. There is a much wider field of inquiry here. Invented languages often are transparently based on particular languages, sometimes surely because these are all the writers can find to use as raw materials, sometimes by design (as in Tolkien's case, or in the case of the alien language of Frank Herbert's Dune, which is based on Arabic). The literary question about these invented languages is how they achieve effects through echoes of particular languages: they may call up particular works of literature (like the Finnish sagas), or tap stereotypes of other languages held by speakers of English (like the belief that German is forceful), or reinforce the delineation of place and character (Dune is set in a desert much like the Arabian desert; Piper's Fuzzys speak their English with a sort of lisp, which reinforces their presentation as cute little defenseless creatures), or simply sound familiar (like the word breddu 'close friend, brother' in Marion Zimmer-Bradley's Darkover series). There is also the linguistic question of which features are adapted and how—a question of literary language contact, so to speak.