The Routledge Companion to Science Fiction is a comprehensive overview of the history and study of science fiction. It outlines major writers, movements, and texts in the genre, established critical approaches and areas for future study. Fifty-six entries by a team of renowned international contributors are divided into four parts which look, in turn, at:

- History – an integrated chronological narrative of the genre’s development
- Theory – detailed accounts of major theoretical approaches including feminism, Marxism, psychoanalysis, cultural studies, postcolonialism, posthumanism, and utopian studies
- Issues and Challenges – anticipates future directions for study in areas as diverse as science studies, music, design, environmentalism, ethics, and alterity
- Subgenres – a prismatic view of the genre, tracing themes and developments within specific subgenres

Bringing into dialogue the many perspectives on the genre, The Routledge Companion to Science Fiction is essential reading for anyone interested in the history and the future of science fiction and the way it is taught and studied.

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Many different stories have been told about science fiction (sf), and this book retells, interrogates, contests, and revises some of them. For example, the origins of the genre have been argued about for decades. While some contend it was inaugurated by US pulp magazine editor Hugo Gernsback in 1926 (e.g., Westfahl 1998), others trace it back to writers from classical antiquity or the first century AD, such as Euripides, Cicero, Plutarch, Diogenes, and Lucian (e.g., Roberts 2006). Brian Aldiss (1973) influentially suggested Mary Shelley’s *Frankenstein, or, the Modern Prometheus* (1818) as the first ever sf text, while others have championed the fiction of Edgar Allan Poe in the 1830s and 1840s, Jules Verne from the 1860s onwards, and H.G. Wells from the 1890s onwards. A similar debate has raged over how to define the genre. The dozen main contenders identified by Clute and Nicholls (1993) and the 30 listed by Wikipedia represent a mere fraction of the attempts to delineate what sf is and to prescribe what it should be.

Such activities, while tremendously productive in some respects – including being a kind of phatic touchstone in fannish and academic circles – are incapable of producing definitive results or universal consensus. As John Rieder argues, “a genre consists of a web of resemblances established by repetition across a large number of texts” and therefore “the very notion of the founding instance or origin of a genre is self-contradictory, because the work in question is in an important way not an example of the genre it establishes, but rather a peculiarly influential violation of some pre-existing set of generic expectations” (Rieder 2008: 18–19). Moreover, genres do not have fixed identities. They “are not inert categories shared by all . . . but discursive claims made by real speakers for particular purposes in specific situations” (Altman 1999: 101).

They are ongoing, and by definition irresolvable, fields of contention between myriad discursive agents (between writers, readers, editors, directors, producers, viewers, players, fans, critics, detractors; between institutions of production, distribution, and consumption), many of whom may well be more interested in establishing, maintaining, and expanding markets for commodities and in promulgating ideologies than in the particular genre itself. And in an appropriately science-fictional manner, these discursive agents are not even necessarily human. Consequently, the origin stories, the bracketing off of ur-texts, prototypes, and precursors, the arguments over boundaries, margins, and hybrids, and definitions of any genre arise from myriad
possible motivations and serve different purposes in an array of contexts. By their
very nature, they emphasize certain people, texts, institutions and phenomena, and
de-emphasize others. Decisions, conscious and otherwise, about what is central and
what is peripheral, what is intrinsic and what extrinsic, shape and reshape any genre
and our understanding of it.

Many of the first critical stories about sf, in both fan and academic discussions,
argued that it was as worthy of attention as the rest of literature, while often also
insisting on its unique qualities. In doing so, sf was effectively equated with prose
fiction, and so other media – film, television, comics – and material practices – toys,
games, environments – were omitted or marginalized as less serious, less valuable,
less significant; and other genres were decried as inferior, particularly fantasy, which
was typically treated as the feminized irrational Other to sf’s masculine rigor and
rationality.

Therefore, one principal aim of The Routledge Companion to Science Fiction is to bring
into dialogue some of the many perspectives on the genre, without striving to resolve
this multiplicity into a single image of sf or a single story of its history and meaning.
For example, while the “History” section traces the development of sf in prose fiction
from the seventeenth century to the present, more than half of its chapters are
concerned with film, television, and comics, as well as material cultural practices,
such as tourism, dime museums, and world’s fairs; and the final section, on selected
“Subgenres,” offers a prismatic view of the kinds of stories sf tells across various media.
The two central sections, “Theory” and “Issues and Challenges,” situate these various
historical understandings of the genre within an equally complex history of how the
genre has been and is being studied, including some new approaches to it which are
only now beginning to open up. The Routledge Companion to Science Fiction is thus
designed to provide a survey not only of sf but also of the scholarship surrounding it.

The “History” section is divided by mode – prose fiction, film, television, comics,
material culture – and organized by (rough) chronology so as to highlight a sense of
the genre at specific historical conjunctures without sacrificing medium specificities.
Some chapters do overlap slightly, but this is entirely appropriate as neither history
nor media – nor our experience of them – are so neatly arranged. And although this
is a substantial volume, we have not been able to include all that we would have
liked – such as chapters on the longer history of sf, automata, radio, military planning,
fashion, toys and games, UFOs and abduction narratives, futurology, the history of
science, or sf art.

The “Theory” section examines the genre through the well-established perspectives
and methodologies of sf scholarship. Some, such as Marxism, feminism, and utopian
studies, laid the foundations for the academic study of the genre, while others played
a dominant role in establishing media-specific critical approaches, such as the psycho-
analytic theory underpinning much of the work on sf film. Some, such as nuclear
criticism, are predominantly associated with a particular historical conjuncture, while
others, such as postmodernism, played a significant role in bringing sf texts to wider
attention, both popular and scholarly. Taken together, the chapters in this section
situate sf within the major critical frameworks that have shaped its study.
The “Issues and Challenges” section proposes and explores elements of a future agenda for the study of sf. It provides an overview of theoretical approaches and methodologies that have not yet proven central to the study of sf, but which offer valuable tools for thinking about and understanding the genre. The chapters in this section are equally and simultaneously concerned with what sf can offer to scholars working within these paradigms. Some of the approaches highlighted in this section have recently been taken up in sf studies (e.g., music, environmentalism, science studies), and while some chapters draw attention to synergies between sf and well-established methodologies (e.g., young adult fiction, ethics and alterity), others introduce emergent areas of scholarship whose affinities with sf are promising (e.g., animal studies, digital games). In the next edition of this Companion, it may be that chapters currently in the third section will have moved to the second.

The “Subgenres” section focuses on different kinds of sf, each with its own distinct history and thematic concerns, and supplements the “History” section by identifying and elucidating techniques or themes that have developed and transformed across historical periods. Our selections are intended to cut across more than a century of sf, rather than being confined to a particular period. For example, while the New Wave and cyberpunk movements are dealt with in their specific historical contexts, by examining space opera as a subgenre it is easier to discern how such typically uncritical fantasies of imperialist expansion in the 1930s were reformulated in the 1990s as a vehicle for critiquing the politics of empire.

As this introduction hopefully indicates, we do not regard The Routledge Companion to Science Fiction as The One-and-Only True History of Sf. In particular, we are conscious of its bias toward Anglophone sf from the US, the UK, and to a lesser extent Canada and Australia. Although some materials from other nations are discussed, these are mostly from northwestern Europe, the former Soviet Union, and Japan. One of the slowly emerging trends in sf scholarship is a sense of the genre as a global phenomenon, not merely in terms of the consumption of texts and practices produced in or by the First World, but also in its ability to express the experience of modernity among peoples excluded from the economic and geopolitical core. Sf has always been as much concerned with the past as with the future, and this volume stands at this moment in time, telling what has already passed in some of its richness, detail, and diversity, and looking forward into possible futures. No single book can tell the whole story of sf, but perhaps this, in recognizing its own contingency, can open up a space for those voices still to be recovered and for those yet to come.

Bibliography


Part I

HISTORY
1
THE COPERNICAN REVOLUTION
Adam Roberts

This chapter is a small example of “long history” sf. The “long history” assumes, as its name might suggest, that sf is a cultural mode of relative antiquity, a view held by some commentators, though not, it should be noted, by most. The majority of critics are more comfortable with a “short history” model, seeing sf as a relatively recent development in human culture, beginning (according to some) with Gothic Romanticism – Mary Shelley’s *Frankenstein, or the Modern Prometheus* (1818) is sometimes cited as the “first sf novel” – or (others say) beginning later still, with the work of Jules Verne and H.G. Wells in the later nineteenth century, or (according to yet others) even later than that, with Hugo Gernsback in the 1920s (see, respectively, Aldiss with Wingrove 1986; Luckhurst 2005; Westfahl 1998). These various accounts chime for many with the sense that sf is a characteristically modern phenomenon, one that does not truly flourish until the twentieth century.

But the “short history” leaves commentators with the problem of accounting for a large body of work of much greater antiquity that contains many of the features and tropes we all recognize as sf: travel to other planets, encounters with extraterrestrial lifeforms, utopian social speculation, and futuristic extrapolation. To call such works “proto-sf,” “ur-sf,” or “precursors to the genre” may be thought to beg the question (as if one decided that sculpture began with the work of Henry Moore, and so classified all earlier sculptural work as “proto-sculture”). A simpler approach would be to note that if something walks like a cyberduck, and quacks like a cyberduck, then we might as well include it in our science-fictional aviary. That is a flippant way of putting it; but, as this chapter will try to show, there are in fact more important issues at stake in identifying the origins of sf with the Copernican revolution. To read the genre in that light is to see it as being determined by the forces present at its birth: the rapid and conceptually dizzying expansion of the cosmos, the encounter with alienness, a new way of thinking about time, and above all a cleavage between longstanding religious ways of understanding existence – which is, in essence, a magical apprehension of the cosmos – and the newer materialist, non-magical discourses of science.

Certainly it makes sense to separate out “science fiction” from “fantasy” on the grounds that the latter is magical; it always includes an excess that cannot be reconciled with
or explained in terms of the world as we know it really to be. The consensus as to how the world actually works is called “science”; and just as “fantasy” exists in some sort of defining relationship with magic, so “sf” exists in some sort of defining relationship with science. This is true, even insofar as sf is in the business of exploring, and often transgressing, the boundary between what counts as science and what goes beyond (variously called “pseudoscience,” “parascience,” “mumbo jumbo,” and so on). Of course, this boundary has not remained stable over the past few centuries; discourses now seen as pseudoscientific such as “mesmerism” or “spiritualism” were once counted as science but are no longer. But broadly speaking we can argue that sf begins at the time that science, as we understand the term today, begins. Copernicus has become emblematic of this sea-change in Western science. Howard Margolis (2002) lists nine “fundamental scientific discoveries” made around the year 1600 (including the laws of planetary motion, the magnetism of the Earth, and the distinction between magnetism and electricity) that together represent an unprecedented advance in scientific understanding. The title of his history of science sums up his thesis: It Started with Copernicus.

What was the Copernican revolution?

The second-century Alexandrian astronomer Claudius Ptolemy argued that the Earth lies at the center of the solar system, and that the Sun, Moon, five planets, and a sphere of fixed stars revolve diurnally about us, all of them embedded in transparent, crystalline, perfectly spherical shells. Medieval Europe found this model consonant both with people’s common sense and with the biblical account of the cosmos. It is in this universe that early stories of interplanetary travel take place: for instance, Roman writer Cicero’s Dream of Scipio (51 BC), in which the narrator dreams of roaming through the solar system, or Italian poet Dante Alighieri’s epic poem Paradise (c. 1307–21), in which the narrator moves outwards from the Earth to the Moon, planets, and finally to the sphere of the fixed stars. Dante’s poem makes plain that this Ptolemaic cosmos is a spiritual, and indeed theological, rather than a material place. Italian poet Ludovico Ariosto’s poetical romance Orlando Furioso (1532) includes the journey of a chivalric hero to the Moon (helped up by John the Baptist) that makes no concessions to plausibility.

In fact the Ptolemaic model cannot explain all the observable astronomical data; but because this model was endorsed by the Church, challenging it was considered heresy. Mikołaj Kopernik, better known by his Latin name Nicolaus Copernicus, was a Catholic churchman and astronomer from Ermland (now part of Poland). His On the Revolution of the Celestial Orbs (1543) argued on the basis of careful astronomical observation that the Sun, not the Earth, is at the center of the cosmos. He was not the first to argue this – the medieval philosopher Nicholas of Cusa had suggested it in On Learned Ignorance (1440) – but Copernicus was the first to make the case on the back of properly collated scientific data, and it was his book that changed the way scientific culture conceptualized humanity’s place in the universe.

Talk of a “Copernican revolution” is, perhaps, misleading; few “revolutions” in human affairs have been so cautious and, in some senses, conservative. Copernicus
believed, for instance, that the planets moved in circles about the Sun, not because there was any observational evidence to this effect but because circles were assumed to be more “perfect” than any other shape, and Copernicus had not shaken off the medieval notion that idealized perfection was the true idiom of the heavens. Similarly, he believed like Ptolemy that the planets were embedded in crystalline spheres, rather than being bodies in ballistic motion. Again, where we might expect a revolution to happen rapidly, Copernicus’s theories spread only very slowly, hampered by the Church’s hostility, the small print run of his book and the inertia of the learned scholastic traditions. By the end of the sixteenth century most European scholars, whether they accepted or rejected it, knew about the theory, although the Catholic Church continued persecuting the theory well into the seventeenth century. So, for example, when Italian astronomer Galileo Galilei published a scientific work arguing in Copernicus’s favor in 1632, he was condemned by the inquisition and compelled to recant. Johannes Kepler, as a Protestant, avoided the direct fury of the Catholic Church, although he faced other obstacles and hostility as he refined Copernicus’s model, proving many things, not least (in New Astronomy (1609)) that planetary orbits follow ellipses rather than circles. By the end of the seventeenth century, English scientist Isaac Newton supplied, with his laws of motion and gravitation, the theoretical and mathematical necessities to make the fullest sense of Copernicus’s cosmos. By Newton’s time, science had become much more recognizably modern. In the words of A.R. Hall, Copernican science was “a growth, an intensification of the trend of medieval science, rather than a deflection from it. Almost everything that happens in the history of science in the 16th century has a medieval precedent, and would have been comprehensible, if repugnant, to earlier generations in a way that the science of the age of Newton was not” (Hall 1990: 449–50).

We might wonder, then, why it is conventional to talk of a Copernican revolution, rather than (say) a Keplerian or Newtonian one? In part, Copernicus gets credit as the first individual to advance heliocentrism on the basis of detailed research. But more importantly, it was Copernicus’s theory that became the locus of opposition to the Church’s domination of knowledge. The Copernican revolution is bound up with the ways in which science supplanted religion and myth in the imaginative economy of European thought; and sf emerges from, and is shaped by, precisely that struggle. Contemporaries certainly saw the new cosmology in these terms, and many of the earlier writers of sf were Protestants. John Donne’s satirical work Ignatius his Conclave (1611) mocks the Pope for continuing to persecute the new science: Donne is surprised to meet Copernicus in Hell (“For though I had never heard ill of his life, and therefore might wonder to find him there; yet when I remembered, that the Papists have extended the name, & the punishment of Heresie, almost to every thing” (Donne 1969: 188)), but this is revealed to be a symptom of Ignatius Loyola’s Jesuitical bigotry rather than Divine displeasure. Copernicus, on the other hand, is unfazed; when baited by Lucifer, he retorts that Lucifer is only a sort of alien lifeform (“I thought thee of the race of the starre Lucifer, with which I am so well acquainted” (Donne 1969: 188)). At the end of this satire Copernicus goes free and the Jesuits are all sent off to colonize the Moon, where, the narrator suggests, they can do less mischief.
Seventeenth-century interplanetary tales

Donne's speculative tale of lunar colonization was one of the earliest examples of what became a vigorous strand of seventeenth-century interplanetary romances (Marjorie Hope Nicolson (1960) lists some 200 of these, and hers is an incomplete list). Copernicus had opened up the cosmos, and writers rushed to fill the imaginative vista in radically new and materialist ways. The solidly science-based imaginative extrapolation of Johannes Kepler's A Dream, or Lunar Astronomy (1634; written c. 1600) captures exactly the shift in sensibility that enabled sf to come into being. It starts fantastically enough, with the narrator dreaming of meeting a witch, who in turn summons a demon to carry them both to the Moon; but once there, the story is given over to detailed scientific speculation about what life might actually be like in that place, where each day and each night lasts a fortnight. Kepler imagines weird utterly inhuman alien lifeforms, serpentine and estranging, forced to hide from the heat of the day in caves; and he backs up his speculation with detailed and carefully researched scientific appendices. Indeed, the appendices are four times the size of the brief prose narrative, a ratio which articulates a sense of the respective importance of the scientific and the imaginative in this work. This is the first genuine attempt at imagining alien life in terms of radical otherness, and some see A Dream as the first true sf novel (Roberts 2006: 42–5).

More commercially successful was Francis Godwin's space-journey adventure The Man in the Moone or, a Discourse of a Voyage Thither by Domingo Gonsales, the Speedy Messenger (1638). The first bestseller of this new sort of Copernican fantastic voyage, it went through 25 editions in the remainder of the century, and was translated into several languages. It is not hard to see why it was so successful, for it combines a solid narrative drive with a nicely handled apprehension of the marvelous. Godwin's Spanish protagonist flies up from the island of St Helena to the Moon by harnessing a flock of geese – no ordinary geese, these, but an unusual breed that migrates into outer space. On the Moon, he encounters a utopian society of humanoid creatures, before returning to Earth, landing in China. The whole thing is told with verve and a winning attention to detail, with enough verisimilitude that some contemporary readers believed it a true account.

Cyrano de Bergerac read the French translation of Godwin's book before writing his own sprightly and witty lunar voyage, The Other World, or the States and Empires of the Moon (1657). Cyrano's protagonist flies from France to Canada and thence to the Moon by employing a series of imaginative modes of transportation, including one craft powered by the evaporation of dew, and another by fireworks – this last device effectively a rocket that moves the logic of spaceflight from fantastical into plausibly technical idioms. Cyrano's lunarians, huge four-legged beings, refuse to believe that this tiny biped is a man (they eventually classify him as a kind of bird). In a sequel, Comical History of Mr Cyrano Bergerac, Containing the States and Empires of the Sun (1662), Cyrano builds yet another spaceship, this time using mirrors to focus the Sun's rays into hot blasts, and visits the Sun.

The Moon was a common destination. The anonymous Spanish work Crotalón
(1552) looks down upon the Earth from the Moon in order satirically to critique human stupidity. In the anonymous manuscript tale *Selenographia: the Lunarian* (1690), the Moon is reached with a giant kite. Daniel Defoe’s *The Consolidator, or, Memoirs of Sundry Transactions from the World in the Moon* (1705) is similarly satirical. Other worlds were also approached. The female protagonist of Margaret Cavendish’s *The Description of a New World, Called the Blazing-World* (1666) finds a new planet attached to the Earth at the North Pole, and, exploring it, is eventually made its empress. Edmund Spenser’s epic poem *The Faerie Queene* (1590–6) is set in “Fairyland”; but the second book opens with a rebuke to those who had read the first book and claimed not to know where “Fairyland” is. Previously, Spenser insists, nobody had heard of Peru or America. Fairyland might be a similar case, perhaps located on the Moon or on another star (“What if within the Moones faire shining sphære? / What if in euery other starre vnseene?” (Spenser 1970: 71)). Imagining human travel to the Moon inevitably suggests reciprocation: lunar aliens coming to Earth. French writer Charles Sorel’s novel *The True Comic History of Francion* (1623), perhaps the bestselling French novel of the century, wonders if there might be “a prince like Alexander the Great up there, planning to come down and subdue this world of ours,” and speculates about the “engines for descending to our world” such an invader might be assembling (Sorel 1909: 425).

All the works so far mentioned are “scientific” romances in the sense that they try, with varying degrees of attention, to ground their speculation in the science of the day. But those very theories of science were deeply implicated in new theories of religion, such that the Renaissance (associated with the former) and the Reformation (associated with the latter) can be considered aspects of the same underlying cultural logic. This fact shapes the sf of the seventeenth century, just as it continues to shape the sf of the twenty-first. Certainly none of the earliest interplanetary stories were what we might call “secular.” On arriving on the Moon and seeing its inhabitants, the hero of Godwin’s *The Man in the Moone* cries out “Jesus Maria,” which causes the lunarians to “fall all down upon their knees, at which I not a little rejoiced” (Godwin 1995: 96). John Wilkins’s *The Discovery of a World in the Moone. Or, A Discourse Tending to Prove that 'tis Probable There May be Another Habitable World in that Planet* (1638) likewise discusses whether extraterrestrials “are the seed of Adam” and therefore “liable to the same misery [of original sin] with us, out of which, perhaps, they were delivered by the same means as we, the death of Christ” (Wilkins 1973: 186–92).

The problem for these authors was that imaginatively populating other planets with alien life undermined the uniqueness of Christ’s atonement for original sin. The crucifixion was taken to be a unique event that saved the inhabitants of the Earth from damnation; but what about inhabitants of other planets? Either they had been abandoned by God, or else they each had their own individual Christ. Neither of these options appealed to seventeenth-century thinkers: the former implied an uncaring God, the latter degraded the uniqueness of Christ’s sacrifice. Lambert Daneau’s *The Wonderfull Woorkmanship of the World* (1578) rejects the idea that there could be “another world like unto ours” precisely because nobody can determine “what is their state, order, condition, fall, constancy, Saviour, and Jesus” or say “what likewise is
their life everlasting, and from whence cometh the salvation of this second or third world” (qtd in Empson 1993: 201). Similarly, the first person Cyrano meets on the Moon is the biblical Elijah, who tells him “this land is indeed the same moon that you can see from your own globe, and this place in which you are walking is Paradise, but it is the Earthly Paradise” (Cyrano de Bergerac 1970: 44). Cyrano’s Eden was high enough, as it were, to have avoided inundation by Noah’s flood. Wilkins makes a similar case in Discovery of a World in the Moone, describing the Moon as a “celestiall earth, answerable, as I conceive, to the paradise of the Schoolemen . . . this place was not overflowed by the flood, since there were no sinners there which might draw the curse upon it” (Wilkins 1973: 203–5).

By the middle of the seventeenth century, this anxiety was, broadly, giving way to a belief that not only were there many other stars and worlds, but, as English philosopher James Howell put it in his Epistolæ Ho-Elianæ (1647), that “every Star in Heaven . . . is coloniz’d and replenish’d with Astrean Inhabitants” (Howell 2005: 530). But in fact this belief was just as theologically determined, based upon the idea that God would not create so vast a cosmic space to no purpose, and that therefore all planets must contain life. Two popular French works, Pierre Borel’s New Discourse Proving the Plurality of Worlds (1657) and Bernard de Fontenelle’s bestselling Dialogue on the Plurality of Worlds (1686), expatiated on this new idea, and Dutchman Christaan Huygens’s Cosmotheoros (1698) zips around the Copernican universe to find not only that everywhere is inhabited but also that Justice, Honesty, Kindness, and Gratitude are omnipresent. These issues – the anxieties generated by Copernicus’s undermining of our special place in the universe; questions of transcendence and atonement; and a sense of the purposiveness and profusion of cosmic life – still haunt sf. For instance, “savior” figures occur and reoccur in sf: the “chosen ones” of Robert A. Heinlein’s Stranger in a Strange Land (1961), Frank Herbert’s Dune (1965), the Star Wars trilogies (1977–83, 1999–2005), and the Matrix (1999–2003) trilogy, as well as superheroes like Superman and Spider-Man who carry the burden of having to “save” the world. I would argue that the reason why sf keeps returning to this figure concerns the forces that determined the origins of the genre. This is not, of course, to suggest that twentieth- and twenty-first-century sf is written in self-conscious dialogue with seventeenth-century theological debates of which few modern-day writers are even aware, but rather that these cultural forces, present at the birth of the genre, determined and gave shape to sf as a whole, and indirectly affected those writers who took their places in the tradition of sf by following “generic” conventions. More to the point those questions are more than narrowly theological; they connect with broadly human-existential anxieties and uncertainties.

Time

Despite these and many other seventeenth-century stories about traveling into space, many critics remain unpersuaded that a “long history” is the best way of understanding sf’s origins. To speak broadly, an important debate in sf criticism is whether the “voyage in space” is the genre’s defining feature, or whether it is better to see sf as embodying
a temporal imagination. This is not to say that sf novels must be “set in the future.” Rather, what critics who see sf as temporally determined articulate is a sense that sf is a counterfactual literature: not things as they actually are, but as they might be, whether in the future, in an alternative past or present, or in a parallel dimension.

One of the axioms of sf criticism is that this “counterfactual” element enters the picture much later than Copernicus. For example, Paul Alkon insists that “the impossibility of writing stories about the future” was “widely taken for granted until the 18th-century” (Alkon 1987: 4), while Darko Suvin locates the “central watershed” of the development of sf as a specifically futuristic fiction “around 1800, when space loses its monopoly upon the location of estrangement and the alternative horizons shift from space to time” (Suvin 1979: 89). However, the case can be made that time was a determinant of sf long before this – that, in fact, the Copernican revolution unshackled the creative imagination from biblical rectitude in temporal, as well as spatial, terms. By opening up cosmological spatial scales, Copernican beliefs also challenged the chronological assumptions of European culture. The biblical Old Testament dates the creation a few thousand years ago (famously, Irish Archbishop James Ussher’s Annals of the World (1650) calculated from biblical genealogies that the creation occurred at the sunset preceding Sunday 23 October 4004 BC); and the New Testament promises that the end of the universe is imminent. Neither claim is factually accurate. In the seventeenth and early eighteenth centuries, understanding of “long time” underwent a radical shift. French writer Jean de La Bruyère’s Characters (1688) looks forward into enormous gulfs of time:

Even if the world is only to last for a hundred million years, it is still in its first freshness and has barely begun; we ourselves are close to primitive man, and are likely to be confused with them in the remote future. But if one can judge of the future by the past, how much is still unknown to us in the arts, in the sciences, in nature and indeed in history! what discoveries are still to be made! what various revolutions will surely take place in States and Empires!

(La Bruyère 1935: 107)

Benoit de Maillot’s posthumously published Telliamed (1748) argues that humankind is half a billion years old, and much of its story is given over to a future extrapolation (of the world desiccating, flaring up to burn as a star, and then dying away to a dead and inert body) that takes billions of years more. Smaller-scale future extrapolations were commonplace. John Dryden’s long poem Annus Mirabilis (1667) describes the Great Fire of London in detail and then ends with a lengthy future vision of the city that, he was sure, would rise from the ashes. Indeed, Alkon himself notes several seventeenth-century future histories, among them the anonymous Aulicus his Dream of the Kings Sudden Comming to London (1644), which narrates a possible political future, and French writer Jacques Guttin’s popular Epigone, the History of a Future Century (1659); and it is easy enough to find even earlier counterfactuals than these. For example, the anonymous English play A Larum for London (1602) dramatizes the recent Spanish sack of Antwerp in order, explicitly, to present London with a possible
future narrative of Spanish invasion. Time itself appears as a character on stage, exhorting the audience to consider how the future might play out and claiming that he “doth wish to see / No heavy or disastrous chance befall / The Sonnes of men, if they will warned be.” (Anon. 1913: 51)

**Politics**

By challenging the authority of scripture, Copernicus challenged the authority of the Church, and this, in an era when it was a prime axis of political power, makes the Copernican revolution a political phenomenon. This is reflected in the seventeenth-century flourishing of that more obviously political mode of speculative fiction, utopia. Thomas More inaugurated this subgenre with his short prose tale *Utopia* (1516), in which a traveler reports visiting a distant island upon which society is ordered in immeasurably better ways than in our corner of the world. The name “utopia” parses a double meaning (in Greek *eu-topia* means “good place” and *ou-topia* means “no-place” – a place both ideal and fictional). More’s new genre caught on fairly quickly. Juan Luis Vives borrowed explicitly from More to plan a utopian welfare state in his native Spain in *Subventions for the Poor* (1526). Italian churchman Tommaso Campanella’s *The City of the Sun* (1602) is closer to More’s premise in imagining a fictional utopian city. Speaking broadly, it was this emphasis on place (good-place/no-place) that shaped imaginative engagement with utopian thought. Joseph Hall’s *A World Other and the Same* (1605) and Charles Sorel’s *The True Courier* (1632) both locate rather jolly utopias in an imaginary land to the south of Australia. Hans von Grimmelshausen’s German picaresque novel *Simplicissimus* (1668) includes among its many adventures a sojourn in a utopia populated by sylphs in the middle of the Earth. As actual explorers mapped the globe, so writers found idealized worlds in all manner of places. French writer Gabriel de Foigny returned to the southern hemisphere for his utopia, *The Australian Land* (1676); Joshua Barnes’s *Gerania* (1675) describes a kingdom of miniature humans “on the utmost Borders of India” (Barnes 1675: 1); Richard Head’s *O-Brazile: or The Inchanted Island* (1675) is set in South America.

But this is not to say that utopia, any more than other seventeenth-century sf, was purely a spatial mode of writing. It is easy for utopia, insofar as it represents an idealizing commentary upon present-day concerns, to project its alternative into a notional future world. Englishman Samuel Hartlib dedicated his utopian fiction, *Description of Macaria* (1641), to the English Parliament as a model future development for the country as a whole (“Macaria was a kind of prismatic mirage which shone before the zealous projector to the end of his life” (Bush 1962: 266)). Some writers, like John Milton in his *The Ready and Easy Way to Establish a Free Commonwealth* (1660), preferred directly to address the actual possibilities of social change in the mode of political tract or polemic; but many others decided that their aspirations for the future of the country would be best embodied in fictional form. Samuel Gott’s *Nova Solyma* (1648), imagining England’s possible future as a religious republic (its title means “New Jerusalem”), and Gerard Winstanley’s dry *Oceana* (1656), an account of a possible future-Britain, are two examples among many. Francis Harding’s Latin poem,
On the Arts of Flying (1692), concerns an idealized future British Empire predicated upon the invention of flying machines: the rich leave Earth for the other planets, bequeathing their estates to the poor, with a new British aerial navy establishing peace on the Moon.

Conclusion

There is always the danger that an essay such as this will degenerate into a dry list of titles and dates. I have tried to show that whatever variety of sf it is that interests us (interplanetary travel, counterfactuals, alien encounters, utopias), there are many examples of it during the period immediately after Copernicus. I hope to have suggested, moreover, that this is no mere coincidence but rather a specific reaction to the imaginative expansion the Copernican revolution entailed. The continuing relevance of these tropes connects profoundly with the new ways of thinking about the world that came with the changes of the Copernican revolution. The seventeenth century was that period when science, as we understand the term, first began to impinge upon culture more generally; and the anxieties, and exhilarations, of that interaction, inflected through a number of religious discourses, are still shaping sf today.

Bibliography


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The sf genre obtained its name and social identity during the early decades of the twentieth century in the American pulp magazines. But a recognizable literary tradition was, according to many critics, conceived during the industrial revolution and born during the latter half of the nineteenth century in Jules Verne’s *voyages extraordinaires* and H.G. Wells’s *fin-de-siècle* “scientific romances.” These two sf variants pioneered by Verne and Wells (hard/didactic versus speculative/fantastic) became the two major modes that have dominated the genre ever since.

The explosion of sf-type narratives during the nineteenth century can be understood only within the historical context of the industrial revolution and the transformative (and often alienating) social changes that accompanied it. The generally positive and positivist outlooks common in certain late-Enlightenment works such as Louis-Sébastien Mercier’s futurist utopia *The Year 2440* (1771) and Marie Jean Antoine Nicolas de Caritat, Marquis de Condorcet’s *Sketch for a Historical Picture of the Progress of the Human Mind* (1795) soon metamorphosed into their dark counterpart in works such as Mary Shelley’s *Frankenstein, or the Modern Prometheus* (1818). Moving the source of terror from the supernatural to the scientific, Shelley’s Gothic novel exemplified the Romantic rejection of the eighteenth-century Cartesian belief in the scientist as hero and in technology as inherently good. *Frankenstein* expressed the fears of an entire *mal-du-siècle* generation caught in a sudden paradigm shift between tradition and modernity. As such, the novel proved to be highly influential and popularized what was to become a standard nineteenth-century sf archetype: the mad scientist who, in his hubris-filled pursuit of knowledge and power, betrays basic human values. Notable works before and after *Frankenstein* that feature such Faustian scientists include E.T.A. Hoffman’s “The Sandman” (1816), Honoré de Balzac’s *The Centenarian* (1822) and *The Search for the Absolute* (1834), Nathaniel Hawthorne’s “The Birthmark” (1843) and “Rappaccini’s Daughter” (1846), Robert Louis Stevenson’s *Strange Case of Dr Jekyll and Mr Hyde* (1886), Robert Cromie’s *The Crack of Doom* (1895), H.G. Wells’s *The Island of Doctor Moreau* (1896), and Jules Verne’s *The Master of the World* (1904), among many others. Finally, although some sf historians have proclaimed Mary Shelley’s novel the “ur-text” for the entire
As European society continued to mutate amid rapid industrial growth, the spread of new technologies, and various political upheavals, a new and radical idea began to take hold: that the future could be very different from the past. From this basic notion emerged a second sf thematic strand that proliferated throughout the nineteenth century: futuristic fiction. Félix Bodin’s novel/manifesto The Novel of the Future (1834) argued for the importance of this new genre and described how such narratives, filled with the wonders of the scientific age, would constitute the epic literature of tomorrow (Alkon 1987: 245–89). About three decades earlier, in 1805, Jean-Baptiste Cousin de Grainville had already broken new cognitive ground in The Last Man by visualizing the Christian apocalypse in secular terms (an approach adopted by Mary Shelley in 1826 in a novel of the same name in which she imagines a plague wiping out the world’s population). And, near the close of the century, Camille Flammarion’s Omega: the last days of the world (1894) posited a kind of astronomical-cum-spiritualist apocalypse occasioned by the heat-death of our solar system. Other future-catastrophe (though not necessarily end-of-the-world) fictions from this period include Richard Jefferies’s After London (1885), a post-holocaust novel in which England reverts to barbarism, and numerous cautionary future-war stories beginning with George Chesney’s seminal invasion tale The Battle of Dorking, published in 1871, discussed in detail in I.F. Clarke (1992).

Much of the futuristic fiction of the nineteenth century sought to portray – either positively or negatively – humanity’s social “progress” in the years to come. One imaginative and light-hearted example was Jane Webb-Loudon’s The Mummy! A tale of the twenty-second century (1827), an elaborate science fantasy that pokes fun at her own society’s foibles by means of an eccentric scientist’s resuscitation of the mummy of Egyptian pharaoh Cheops who promptly travels to London (by dirigible) and begins to take an active role in the political affairs of the day. Other satiric works about the future include Émile Souvestre’s comically dystopian The World as it Shall Be (1846) which depicts a world in the year 3000 that has air conditioning, designer drinking waters, steam-driven submarines, and phrenology-based education. Also full of humor and wonderfully illustrated by its author is Albert Robida’s The Twentieth Century (1883), which recounts the adventures of a young woman named Hélène who is attempting to find a career in an extrapolated (and surprisingly feminist) Paris of 1952 where aircabs and high-tech pneumatic tubes transport citizens around the city, where each home contains a “telephotoscope” to broadcast the latest news and entertainment, and where the government is swept out of office every ten years in a planned “decennial revolution.” Robida’s other futuristic novels include War in the Twentieth Century (1887), The Electric Life (1892), and a unique time-reversal fantasy The Clock of the Ages (1902).

More serious utopias of the future were plentiful during the nineteenth century, but the role of scientific technology in their makeup differed greatly from one to the
NINETEENTH-CENTURY SF

next. Consider, for example, Samuel Butler's *Erewhon* (1872), which visualized an anti-technology paradise in which machines have been banned from society for fear that they will evolve and eventually replace humans; or Edward Maitland's *By and By: an historical romance of the future* (1873), a Victorian “three-decker” novel that portrays an advanced pro-science society existing in a future Africa where, among its other technological feats, it has irrigated the Sahara Desert; or W.H. Hudson's *A Crystal Age* (1887), which depicts a futuristic ecological utopia whose citizens, organized as a matriarchal society, live in total harmony with nature. The most important example of this sf subgenre, Edward Bellamy’s hugely popular *Looking Backward: 2000–1887* (1888), imagines a reason-based and technology-driven “socialist” utopia in Boston in the year 2000. Bellamy’s novel quickly became an international bestseller, and “Bellamy Clubs” began to spring up across America to discuss Bellamy’s political ideas. *Looking Backward* also sparked the publication of many other futuristic utopias and dystopias during the fin-de-siècle period of 1890–1900. Notable among these were William Morris’s dreamily pastoral *News from Nowhere* (1890) and Ignatius Donnelly’s grim vision of a capitalistic New York City that is destroyed from within by its disenfranchised and enraged lower classes in *Caesar’s Column* (1890).

Not all later-century utopias were written in reaction to Bellamy, and in particular there was a strain of speculative fantasy written by women writers that inflected feminist aspirations, often dramatizing separatist versions of women-only futures: examples include Mary E. Bradley Lane’s *Mizora: a world of women* (1880), Elizabeth Corbett’s man-free *New Amazonia: a foretaste of the future* (1889), and Lady Florence Dixie’s *Gloriana, or the Revolution of 1900* (1890), which maps a future revolution that leads to an England that achieves peace and prosperity under female rule.

Another important sf strain to emerge during the nineteenth century featured explorations of the distant past, and of ancient “lost” worlds. Edward Page Mitchell’s protagonists travel back to a pivotal historical moment in sixteenth-century Holland in “The Clock that Went Backward” (1881), Mark Twain’s *A Connecticut Yankee in King Arthur’s Court* (1889) travels in time back to sixth-century Arthurian England in this satire on humanity’s seemingly endless capacity for violence and folly, and in Grant Allen’s *The British Barbarians* (1895) an anthropologist from the future travels back in time to study present-day England. Paleanthropology is the main focus of the new emerging subgenre of prehistoric fiction which began with Pierre Boitard's *Paris before Man* (1861), was popularized in Jules Verne’s *Journey to the Center of the Earth* (1864), and found its most elaborate expression in Stanley Waterloo’s *The Story of Ab: a tale of the time of the cave men* (1897), and in the novels *Vamireh* (1892), *Eyirimah* (1896), and *Quest for Fire* (1911) by the prolific but mostly untranslated French writer J.-H. Rosny aîné. An entire civilization living within our hollow Earth is discovered by Captain Adam Seaborn in his *Symzonia: a voyage of discovery* (1820), the first of many nineteenth-century works to describe an unknown race, species, or culture existing within a hidden corner of our world. Others include Edward Bulwer-Lytton’s subterranean Vril-ya in *The Coming Race* (1871), James DeMille’s Antarctic race of Kosekin in *Strange Manuscript Found in a Copper Cylinder* (1888), William R. Bradshaw’s hollow-Earth Plutusians and Calnogorians in *The Goddess of Atvatabar*
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(1892), and several short stories on the lost-race theme by Rosny such as “Nymphea” (1893), “The Depths of Kyamo” (1896), and “The Prodigious Country of the Caverns” (1896). But it was the Victorian novelist H. Rider Haggard who would prove to be the master of this brand of lost-world fiction with his internationally bestselling adventure tales, including King Solomon’s Mines (1885), She (1886), Allan Quatermain (1887), and The People of the Mist (1894).

The growing popularity of “hard science” sf – exemplified by the success of Jules Verne’s novels during the latter half of the nineteenth century – may be traced (somewhat ironically given his reputation in his homeland) to the work of American poet, writer, and critic Edgar Allan Poe. Identified by Hugo Gernsback in the first issue of his Amazing Stories (1926–2005) as one of the three founders of what he called the genre of “scientifiction” (along with Verne and Wells), Poe pioneered the use of scientific detail to enhance the verisimilitude of his fantastic stories. His admittedly tongue-in-cheek note added to the lunar voyage of “The Unparalleled Adventure of One Hans Pfaal” (1835), for example, could almost stand as a first manifesto for hard sf as he urges “the application of scientific principles” to increase “the plausibility of the details of the voyage itself” (Poe 1978: 1001). The status of Poe’s reputation as an early originator of the genre is directly proportional to the variety of sf themes and “narrative frameworks for bold scientific speculation” (Stableford 2003: 19) that he incorporated into his speculative tales: the mechanics of balloon flight in “The Balloon Hoax” (1844), the “science” of mesmerism in “A Tale of the Ragged Mountains” (1844) and “The Facts in the Case of M. Valdemar” (1845), the future destruction of Earth by a comet in “The Conversation of Eiros and Charmion” (1839), the discovery of lost worlds in “MS Found in a Bottle” (1833) and The Narrative of Arthur Gordon Pym (1838), and a futuristic utopia in “Mellonta Tauta” (1849). From his first published poems “Sonnet to Science” (1829) and “Al Aaraaf” (1829) to his last published philosophical essay called Eureka (1848), Poe repeatedly attempted to reconcile a scientific outlook with a sentimental religious mysticism – a Weltanschauung that, later in the century, would permeate the work of writers such as Flammarion and Rosny aîné.

Poe’s influence on Jules Verne at the beginning of the latter’s writing career was pivotal. After reading Baudelaire’s translation of Poe’s stories (titled, significantly, Histoires extraordinaires), Verne penned his only piece of literary criticism, an essay “Edgard Poë and his Works,” published in the popular magazine Musée des familles (1833–1900) in 1864. Verne begins his article by praising Poe, explaining some aspects of Poe’s life, and analyzing lengthy excerpts from Poe’s stories. Verne then goes on to say: “they occupy an important place in the history of imaginative works because Poë created a distinct literary genre all his own” (Verne 1864: 194). It was not Poe’s taste for the macabre, nor his odd penchant for hoax-humor, nor his technophobia that attracted Jules Verne to his imaginative fiction (Alkon 1994: 101–7). It was rather his attention to detail and his ability to make the bizarre believable and the extraordinary ordinary. In other words, it was Poe’s use of scientific verisimilitude that impressed Verne. Although Verne went on to borrow extensively from Poe’s oeuvre (balloons, cryptograms, maelstroms, mesmerism, even the entire narrative of Arthur
Gordon Pym), it was actually Poe’s style that had the greatest impact on the future author of the *Extraordinary Voyages*.

Sometimes called the “Father of Science Fiction,” Jules Verne popularized in the early 1860s a new hybrid fictional genre which he dubbed the *roman scientifique* (the scientific novel). Developed under the strict tutelage of his editor/publisher Pierre-Jules Hetzel, Verne’s narrative recipe was as follows: an educational and fast-paced adventure tale heavily flavored with scientific didacticism, mixing equal parts of drama, humor, and “sense of wonder,” and seasoned with a large pinch of positivistic Saint-Simonian ideology. After the publication and success of his first scientific novel about an aerial trek across darkest Africa called *Five Weeks in a Balloon* (1863), Verne told his friends at the Paris Stock Market where he had been working part-time to make ends meet: “My friends, I bid you adieu. I’ve had an idea ... an idea that should make me rich. I’ve just written a novel in a new style ... If it succeeds, it will be a gold mine” (Evans 1988a: 21). And a gold mine it soon proved to be, not only for Verne and his publisher but also for the history of speculative fiction. Verne went on to write more than sixty scientific novels from 1863 until his death in 1905. Most first appeared in serial format in Hetzel’s family periodical the *Magasin d’éducation et de récréation* (1864–1916) and then reprinted as luxury, fully illustrated octavo editions. Collectively, these novels were called the *voyages extraordinaires*, and they were published with a specific educative purpose: to help compensate for the lack of science instruction in France’s Catholic-controlled schools. As Hetzel explained in his 1866 editorial preface to the collection: “The goal of this series is, in fact, to outline all the geographical, geological, physical, and astronomical knowledge amassed by modern science and to recount, in an entertaining and picturesque format that is his own, the history of the universe” (Evans 1988a: 30).

Marketing hyperbole aside, Hetzel’s preface articulates an explicit goal for Verne’s scientific novels: to teach the natural sciences through the imaginative medium of “armchair voyages.” It was partly this social function that allowed Verne’s hard/didactic sf to establish a successful “institutional ‘landing point’ and ideological model” for the genre (Angenot 1978: 64). From the geology and paleontology of *Journey to the Center of the Earth* to the physics of spaceflight in *From the Earth to the Moon* (1865) and from the oceanography and marine biology of *Twenty Thousand Leagues under the Seas* (1869) to the chemistry and applied engineering of *The Mysterious Island* (1875), Verne’s narratives sought to teach science through fiction, not to develop fiction through science (or, in many instances, pseudoscience), as in the case of Wells, Rosny, and other early practitioners of speculative/fantastic sf. The difference between these two fundamental types of sf can be best illustrated by analyzing the role played by science itself in the discursive structure of these narratives – i.e., the manner in which a sustained scientific discourse is grafted onto a literary one. Verne’s hard/didactic sf presumess a predominantly pedagogical function for such scientific discourse. In contrast, the primary goal of the science in speculative/fantastic sf is more expositional: to facilitate plot progression, to help create special effects and reader estrangement, and to build verisimilitude. That is to say, the “raison d’être of science in the narrative process itself shifts from primary position to secondary, from
subject to context. It seeks no longer to address the reasoning intellect but rather the creative imagination” (Evans 1988b: 1).

Counterbalancing their sometimes heavy doses of scientific didacticism, three other aspects of Verne’s romans scientifiques enhanced their appeal: their epic scope and visions of unlimited mobility, their quest-Bildungsroman and “initiatory” narrative structure, and their evocative portrayals of technology (especially vehicular). As exciting voyages to destinations “where no man had gone before,” Verne’s novels transported his readers to a host of geographical “supreme points” (Butor 1949: 3) – those impenetrable and richly mythic locales such as the North and South Poles in The Adventures of Captain Hatteras (1866) and The Ice Sphinx (1897), the Amazon jungles in The Jangada (1881), the hidden depths of the oceans in Twenty Thousand Leagues under the Seas, the dark side of the Moon in Around the Moon (1870), or even the distant planets of our solar system in Hector Servadac (1877). Most such fictional journeys in Verne’s oeuvre are structured around a basic quest motif such as the search to find a missing father or husband as in The Children of Captain Grant (1867) and Mistress Branican (1891), mapping an unexplored region as in The Adventures of Three Russians and Three English (1872), or surviving as castaways on a deserted island as in The Mysterious Island or A Two-Year Vacation (1888). Most feature scientist/student or mentor/acolyte characters such as Lidenbrock/Axel of Journey to the Center of the Earth or Octave/Marcel of The Begum’s Millions (1879) who serve to model growth and learning. And most include a truly memorable piece of technology – Verne’s famous “dream machines.” From Captain Nemo’s spacious submarine Nautilus, to Barbicane’s aluminum space-bullet (so similar to Apollo 11’s), to Robur’s powerful helicopter airship Albatross, to the steam-powered overland locomotive (fashioned to resemble an Indian elephant) of The Steam House (1880), to the many different modes of transport (both high-tech and low) used by Phileas Fogg in his circumnavigation of the globe in Around the World in 80 Days (1873), these fictional people-movers represented a new industrial-age utopian ideal: “facility of movement in a moving world – ‘Mobilis in mobili’ as Captain Nemo would say” (Evans 1999: 99).

It is important to note that Verne’s post-1887 novels, written after Hetzel’s death, sometimes reflect a dramatic change of tone when compared with his earlier and more celebrated voyages extraordinaires: the latter tend more often to be Romantic, pessimistic, nostalgic, and even fiercely anti-Progress (reminiscent of some of his pre-Hetzel short stories such as “Master Zacharius” (1854) or his “lost” novel, the dystopian Paris in the Twentieth Century, rejected by Hetzel in 1863). As might be expected, the scientific pedagogy in these later texts appears severely abridged, watered down, or cut out altogether. Themes of environmental concern, human morality, and social responsibility grow more prevalent. Non-scientists are more often chosen as the stories’ heroes, and what hero-scientists remain are increasingly portrayed as crazed megalomaniacs who use their special knowledge for purposes of world domination and/or unlimited riches. A striking example of these changes can be seen in the final volumes of Verne’s “serial” novels: the trilogy of From the Earth to the Moon, Around the Moon (1870), and Topsy-Turvy (1889) and the two-novel series of Robur the Conqueror (1886) and Master of the World (1904). In Topsy-Turvy the heroic feats of ballistic
engineering by Barbicane’s Gun Club become (quite literally, at least in ambition) Earth-shaking when, instead of “shooting” a manned capsule around the Moon, they now seek to alter the angle of the planet’s axis with the blast of a gigantic cannon. Wholly indifferent to the catastrophic environmental and human damage that would necessarily result from such a project, their scheme is to melt the Earth’s polar ice cap in order to uncover vast mineral wealth for themselves. Similarly, in Master of the World the genius aviator Robur is brought back into the limelight, but it soon becomes evident that the once-heroic Übermensch of the skies has degenerated into a maniacal madman who now threatens global terrorism with his high-tech devices. Other post-1887 Verne novels target additional social and environmental issues: the cruel oppression of the Québécois people in Canada in Family without a Name (1889), the plague of politicians and missionaries destroying Polynesian island cultures in Propeller Island (1895), the environmental pollution caused by the oil industry in The Last Will of an Eccentric (1899), and the slaughter of elephants for their ivory in The Village in the Treetops (1901), among others.

Verne’s imprint on the developing genre of sf during the nineteenth century was both deep and lasting. Because of his unprecedented success, writers from around the world soon began to imitate Verne’s hard/didactic romans scientifiques and their emphasis on travel, science, and technology: in France, Louis Boussenard’s The Secrets of Mr Synthesis (1888), Henry de Graffigny and Georges Le Faure’s multi-volumed Extraordinary Adventures of a Russian Scientist (1889–96), and Paul d’Ivoi’s action-packed series called the Voyages excentriques (1894–1914); in England and Germany, the many fictional works of Francis Henry Atkins (aka Frank Aubrey) and Robert Kraft; in Russia, the “geographic fantasies” of Vladimir Obruchev; in America, Edward S. Ellis’s frontier sf western The Steam Man of the Prairies (1868), E.E. Hale’s satellite story “The Brick Moon” (1869), Frank R. Stockton’s The Great War Syndicate (1889), and the many Frank Reade Jr and Tom Edison Jr “invention” stories by Luis Senarens and other “dime-novel” writers who flourished toward the end of the century.

Since his death in 1905, Jules Verne’s reputation within the French literary canon, among English-language readers and among contemporary sf scholars, has undergone many changes. In his native France, beginning in the 1960s and 1970s, Verne’s oeuvre finally shed its stigma as paraliterature and joined the respectable literary mainstream; today his novels are taught in French universities. Verne’s literary status in the UK and USA, however, continues to suffer from poor English translations, sensationalistic Hollywood adaptations, and a cultural mythology that persists in portraying him as an icon of “sci-fi” futurism. Fortunately, the past two decades have witnessed a growing renaissance of Anglophone interest in Verne that has resulted in many improved translations of his works, several new and accurate biographies, an online international fanbase, and a dramatic upsurge in the number of academic studies devoted to his fiction (Har’El; Evans 2008).

An important strand of non-Vernian speculative/fantastic sf that continued to develop throughout the nineteenth century – and surged after the publication of Charles Darwin’s On the Origin of Species in 1859 – involves encounters with aliens and extraterrestrials. Imagining life on other worlds as a means for creating off-world
utopias had been an important theme in SF at least since Francis Godwin’s *The Man in the Moone or, a discourse of a voyage thither by Domingo Gonsales, the speedy messenger* (1638) and Cyrano de Bergerac’s *The Other World, or the States and Empires of the Moon* (1657). Joseph Atterley (George Tucker) continued this rich tradition with his 1827 lunar romance *A Voyage to the Moon*. Charles Defontenay’s *Star, or Psi Cassiopeia* (1854) is a much more ambitious work, which describes an entire “Starian” civilization inhabiting the planet Psi in the constellation of Cassiopeia. Percy Greg’s *Across the Zodiac* (1880), Robert Cromie’s *Plunge into Space* (1891), and Gustavus Pope’s *Journey to Mars* (1894) all locate their alien societies on Mars (and also manage to find romance on the red planet) whereas in Kurd Lasswitz’s *On Two Planets* (1897) a thriving Martian colony is discovered at the Earth’s North Pole; finally, John Jacob Astor’s *A Journey in Other Worlds* (1894) recounts an interplanetary tour of our solar system where the protagonists encounter, among other oddities, Earth-like dinosaurs on Jupiter and spirits of the dead on Saturn. In this latter vein of mystical alien encounters, special mention must be made of French astronomer Camille Flammarion whose oeuvre oscillates curiously between the solidly scientific (for instance his enormously successful *Popular Astronomy*, first published in 1875), the nonfictional but highly speculative (his 1862 *The Plurality of Inhabited Worlds*, which he describes the types of alien life that might exist on other planets in our solar system), and the profoundly spiritualist (his 1872 *Lumen* which depicts conversations with a spirit who, traveling faster than the speed of light, encounters different alien life forms throughout the cosmos). Other SF tales about alien life forms who occupy the interstices of different dimensions include Fitz-James O’Brien’s 1858 “The Diamond Lens” which describes a man’s doomed love for a microscopic woman living in a drop of water, Edwin Abbott’s delightful mathematical fable *Flatland* (1884) whose narrator, A. Square, lives in a two-dimensional world, and several fin-de-siècle SF stories by Rosny such as “Another World” (1895), where interdimensional alien species, wholly invisible to our limited senses, coexist with humanity on Earth. Also notable is Rosny’s “The Xipéhuz” (1887), which chronicles an encounter between a nomadic tribe in Mesopotamia and a geometric-shaped and intelligent – yet totally inscrutable – race of alien energy-beings. Many years later, Rosny would transpose this xenobiological theme to an end-of-the-world narrative format in *The Death of the Earth* (1910), where the human species is finally superseded by a mineral-based alien species called the *ferromagnétiaux*. Finally, Auguste Villiers de l’Isle-Adam’s *Future Eve* (1886) initiated yet another – presciently postmodern – variant of “alien” SF with his wondrous android named Hadaly: a self-aware robot invented by Thomas Alva Edison as the “perfect” female but whose very existence raises a host of aesthetic and ontological questions about the “artificiality of contemporary existence” (Roberts 2006: 123). Whether expressed as a utopian society on the Moon, as a nonhuman civilization inhabiting a distant planet or another dimension of space/time, or as a synthetic life form created as an exact simulacrum of ourselves, the recurring theme of the alien in nineteenth-century SF encapsulates one of the core values of the genre: the experience of alterity.

At the end of the nineteenth century, this developing mode of speculative/fantastic SF grew to full maturity with the “scientific romances” of H.G. Wells. Wells bridged
the nineteenth and twentieth centuries both literally and symbolically. Although his writing career was long and prolific, the visionary novels that would inspire generations of sf writers after him were written during the brief period of 1895 to 1914. As mentioned, Wells's brand of sf is quite different from and extends beyond Verne's roman scientifique model in at least two fundamental ways. First, his fictions do not seek to teach science per se but rather to view the universe through scientific eyes. As Brian Stableford defined it, the Wellsian scientific romance “is a story which is built around something glimpsed through a window of possibility from which scientific discovery has drawn back the curtain” (Stableford 1985: 8). Second, Wells's fiction uses science more as an enabling literary device to enhance the verisimilitude and deepen the emotional impact of his fantastic visions. As the author himself explained, “Hitherto, except in exploration fantasies, the fantastic element was brought in by magic ... It occurred to me that ... an ingenious use of scientific patter might with advantage be substituted” (Wells 1934: viii). In other words, the science in Wells's scientific romances made his “thought experiments” more plausible, allowing readers to focus more fully on the human ramifications of the story: “So soon as the hypothesis is launched, the whole interest becomes the interest of looking at human feelings and human ways, from the new angle that has been acquired” (Wells 1934: viii).

Wells's creative genius was to breathe new life into the many sf topoi and tropes that he inherited from the sf tradition that preceded him, pushing them toward new cognitive and aesthetic frontiers. With his first novel, The Time Machine (1895), for example, Wells gave an innovative twist to the time-travel tale by offering a chilling portrayal of humanity evolving into Eloi and Morlocks by the year AD 802701 and, millions of years beyond that, of the end of the human species altogether on a dying planet Earth. Wells's next sf novel, The Island of Doctor Moreau, was a powerful reworking of the Frankenstein motif that dared to satirize organized religion (Wells later described it as an “exercise in youthful blasphemy”). Another moralistic mad-scientist tale followed, The Invisible Man (1897), where the physicist Griffin's discovery of the secret of invisibility transforms him into an insane megalomaniac who must be hunted down and killed. An ingenious interplanetary adaptation of the Chesney future-war novel, Wells's The War of the Worlds (1898) and its imagined Martian invasion took advantage of the public's heightened interest in the red planet following the publication of Percival Lowell's provocative book Mars in 1895. Wells also dabbled in the sf subgenres of prehistoric fiction, planetary disaster fiction, and lost-race fiction in “The Grisly Folk” (1896), “A Story of the Stone Age” (1897), “The Star” (1897), and “The Country of the Blind” (1904). He tried his hand at a Vernian lunar voyage in The First Men in the Moon (1901), using an anti-gravity substance called “Cavorite” (which prompted disapproving scolds from Verne). And finally, he produced several highly foresighted futuristic utopias such as A Modern Utopia (1905) and In the Days of the Comet (1906), as well as a number of prescient future-war fictions, such as The War in the Air (1908) and The World Set Free (1914).

H.G. Wells soon turned away from his early “scientific romances” toward more “realistic” novels and the (often estranging) world of international politics. But in his wake, an identifiable literary tradition had been established. Wells had taken Verne's
popular formula of scientific fiction, modernized its thematic repertoire and its herme-
neutic breadth, and had transformed it into a powerful instrument of speculation and
social critique. As the twentieth century dawned, this new literature had now earned
its lettres de noblesse, but it would still be years before it would receive its permanent
genre name of “science fiction.”

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The years 1895 and 1926 mark monumental events in the history of sf: the publication of *The Time Machine*, H.G. Wells’s first important work of fiction, and the inauguration of *Amazing Stories* (1926–2005), edited by Hugo Gernsback, the first magazine devoted exclusively and explicitly to publishing sf (or “scientifiction,” as Gernsback then called it). But there is no more than a loose connection between the two events, and certainly no developmental or progressive history that leads us from Wells’s artistic achievement to Gernsback’s entrepreneurship. In fact, Gernsback’s pulp milieu bears only a slight resemblance to the publishing context in which Wells worked, and Gernsback’s one novel-length piece of fiction, *Ralph 124C 41+ : a romance of the year 2660* (1911–12), entirely lacks the craft and thoughtfulness that make *The Time Machine* important. The history of sf in this period is diffuse, even if one simplifies the task by concentrating on English-language fiction, as I will do here. Writing that history involves the retrospective gathering together of scattered materials that find a clearly delineated focus and identity as early sf largely because of Gernsback’s commercial project.

Nonetheless, Wells’s importance is quite independent of Gernsback’s. We would still be reading *The Time Machine* and assigning it some kind of special place in the history of generic innovation even if Gernsback’s reprints of Wells – and publication of Wells’s many imitators – had not so thoroughly woven him into the fabric of pulp sf. The year 1895 marks a watershed in the history of sf not just because of *The Time Machine* itself, but because it inaugurates the most important phase of Wells’s career. The major works that followed, including *The Island of Doctor Moreau* (1896), *The Invisible Man* (1897), “The Star” (1897), *The War of the Worlds* (1898), *When the Sleeper Wakes* (1899), *The First Men in the Moon* (1901), “The Land Ironclads” (1903), and “The Country of the Blind” (1904), comprise arguably the most important and influential body of fiction any writer has contributed to the genre. It is so impressive an achievement that it has sometimes inspired the exaggerated claim that Wells invented sf itself. In fact, he took up a range of devices and themes that were already being widely used, including time travel, future-war stories, contact with lost races, extraterrestrial journeys, scientific experiments gone awry, utopian speculation, and quasi-apocalyptic natural disaster. One of the distinctions of the fiction of Wells’s great decade is that, more than any other writer, he gathered together in one place almost all of the disparate threads of what we now identify as early sf.
Even more compelling than the breadth of Wells’s subject matter, however, is the depth of his exploration and transformation of it. In The Time Machine, for example, Wells seized upon and made his own a plot device that had enjoyed a great deal of popularity in the preceding decade. One of the most widely read and hotly discussed books of the period, Edward Bellamy’s Looking Backward: 2000–1887 (1888), narrates a contemporary New Englander’s visit to the future where he observes a vastly more efficient and equitable society. Its famous and influential polemical counterpart, William Morris’s News from Nowhere (1890), also uses time travel to promote a different vision of social improvement. Mark Twain’s anti-clerical satire, A Connecticut Yankee in King Arthur’s Court (1889), sends its time-traveler in the opposite direction, pitting a contemporary engineer’s rationality and know-how against the brutality and superstition that rule Twain’s imaginary sixth-century Arthurian England. It is sometimes said that Wells’s key innovation upon the time-travel plot is his invention of the time machine itself, allowing him to replace the accidental time-travelers and Rip-Van-Winkle-like trances of these earlier stories with the deliberate exploratory journey of his scientist protagonist. Instead of the guided tours by which Bellamy’s and Morris’s visitors learn about the future, then, Wells’s Time Traveler encounters the world of AD 802701 as a riddle that only gradually unfolds its secrets. The drama of interpretation, as the Time Traveler works through a series of hypotheses about the relationship between the surface-dwelling Eloi and the subterranean Morlocks who inhabit this far-future Thames Valley, makes for a fluent synthesis of the utopian and satirical material typical of earlier time-travel stories. And just as this plot’s dynamism sets it apart from those of Bellamy and Morris, the clarity of Wells’s exposition distinguishes his novel from the earlier, comparable, but somewhat opaque attempt at depicting a posthuman future in William Henry Hudson’s A Crystal Age (1887).

Yet Wells’s marvelous machine and streamlined plot development would be worth little more than a footnote in the history of sf were it not for the visionary power of the futures his Time Traveler visits. Sf, like the historical novel, is intimately bound up with ideas about historical change, especially the linked notions of progress, evolution, and modernity. For example, Grant Allen’s time-travel novel, The British Barbarians (1895), exploits the widely shared assumption, which informed an entire generation of anthropologists, that contemporary Europe represented the fully developed phase of a history of civilization whose past developing phases were visible in non-European, savage societies. Allen (who, like Wells, was an advocate and popularizer of Darwinism) simply reverses the perspective of the ideology of progress by having an anthropologist from the future visit present-day England to study its savage rituals and superstitious beliefs. The Time Machine also reverses contemporary assumptions about progress, but, unlike Allen, Wells does not leave the ethnocentric framework of the ideology of progress intact. While Allen’s future is simply and unquestionably superior to the present, Wells depicts a future in which humanity has degenerated into the subhuman Eloi and Morlocks, and then gives this degeneration a cosmic scale in the protagonist’s brief, bleak glimpse of the entropic heat-death of life itself. Wells also attacks the identification of progress with industrialized Europe, by making the speciation of the Eloi and the Morlocks the ironic outcome of the triumph
of technological rationality over scarcity. Furthermore, the future’s technological triumph is undone in this manner not because its inhabitants lapse into the habits of “savage” societies, but because it perpetuates a form of savagery peculiar to contemporary “advanced” societies, the class division between capitalists and laborers. In the long run, the upper class’s exploitation of the workers turns into dependence upon, and finally utter subjection to, them as the Eloi end up not only being tended to by the Morlocks but also becoming a staple item of their diet. Finally, this dialectical reversal of the capitalist masters into the slaves, or more precisely the cattle, of their machine-tending former servants obliterates the opposition between nature and culture itself, turning the man-made arrangement of class duties and responsibilities into a grotesque natural symbiosis. Thus Wells’s tale challenges the entire framework of assumptions that bolster chauvinistic belief in the superior rationality of European industrial civilization. And Wells does so with a seamless weaving together of extravagant conjecture and realistic detail – as one of the Time Traveler’s listeners comments, “the story was so fantastic and incredible, the telling so credible and sober” (Wells 1987: 89) – that would remain one of the benchmarks of stylistic achievement in the genre.

The Time Machine set a high standard that much of Wells’s fiction lived up to in the years that followed. The depth and clarity he brought to the time-travel plot is typical of his handling of other popular types: invasion and the near-future war in The War of the Worlds and “The Land Ironclads”; the mad scientist whose experiments go disastrously wrong in The Island of Doctor Moreau and The Invisible Man; the extraterrestrial journey in The First Men in the Moon; the explorer’s encounter with a lost race in “The Country of the Blind”; and apocalyptic natural disaster in “The Star.” He made some remarkable innovations in these stories. For example, the Martians of The War of the Worlds are the prototype of all the cyborgs and the hyper-encephalic future humans and extraterrestrials of later sf, and in the Selenites of First Men in the Moon Wells pioneered the strategy of modeling alien anatomy and social organization on insects. But what characterizes Wells’s great decade on the whole is not the novelty of his invention, but rather the way he breathes vitality into the commonplace plots and devices of an already thriving early sf.

What we now call early sf was perhaps nothing more than the loose aggregation of such commonplace devices. No one was consciously writing, publishing, or reading “sf” around 1900. Even the association of Wells’s fiction with that of contemporaries like M.P. Shiel, George Griffith, and J.W. Beresford under the rubric of “scientific romance” (Stableford 1985) is more a way of identifying these writers’ common tendencies and shared milieu than it is the delineation of an explicit, self-consciously employed generic category. Nonetheless, Gernsback and the American magazine writers did not invent sf out of nothing, and Gernsback himself was quite eager to identify a canon of earlier works that defined the sort of story his magazine was looking to publish. A generation of bibliographers has documented an almost exponential decade-by-decade proliferation, from the 1870s to the 1920s, of stories set in the future, or about marvelous inventions and heroic or mad scientists (the prototypes being Thomas Edison and Victor Frankenstein, respectively), or involving journeys into previously unexplored areas of the world (usually the poles
or imaginary subterranean caverns, as the mapping of the world’s inhabitable surface neared completion), or journeys into outer space, or into the past or the future, and so on. (The most comprehensive and informative of these bibliographies is Bleiler 1990; others, each of which has its strengths, include Clareson 1984, Clarke 1961, and Suvin 1983.) The ground for Wells’s achievement was prepared by this steady growth, which was punctuated by more spectacular publishing phenomena such as Bellamy’s utopia, or before that H. Rider Haggard’s enormously successful lost-race romances (starting with King Solomon’s Mines (1885) followed by She (1886) and Allan Quatermain (1887)), and the ongoing popularity of Jules Verne’s voyages extraordinaires, all of which established a reading audience already attuned to a set of recognizable themes and expectations for Wells to exploit. The impact of Verne and Wells was crucial to the formation of sf, but the growing market for tales oriented toward the future, stories that extrapolated upon recent scientific and technological discoveries, and stories exploring utopian or merely exotic social formations was broader and more miscellaneous than can be accounted for by the influence of individual writers. Those increasing numbers who, during these decades, wrote and published early sf must have been responding to demands rooted in their society’s collective experience of change and its collective investment in modernity.

First, these demands point toward an economic context. Surely the importance of technical innovation and scientific training to the growth and maintenance of a large-scale industrial capitalist economy has a great deal to do not only with the ongoing popularity of Verne’s fiction, with its marvelous inventions and lengthy expositions of scientific fact, throughout this period, but also with the commercial success of the American dime novel’s fictional adolescent hero-scientists, Frank Reade Jr (1892–8) and Tom Swift (1910–41). If Gernsback’s vision of sf as an educational tool, his interest in amateur radio, and his other publishing ventures, like Modern Electrics (1908–13) and Science and Invention (1920–31), are any indication, the presence of a significant audience comprising young readers oriented toward engineering and fascinated by gadgetry was crucial to early sf.

Second, the social environment that attended the climax and crisis of imperialism nurtured the growing market for sf. The tensions of imperialist competition clearly underlie one of the most important and prolific veins of sf before the First World War, the invasion stories and forecasts of future war that Wells so decisively transformed in The War of the Worlds (on the future-war motif, see Clarke 1992). The vogue for such stories would seem not only to exploit popular identification with imperial projects and popular anxieties about becoming the victims rather than the wielders of imperial military power, but also to point once again to the economic backdrop of large-scale industrial production. The popularity of future-war stories coincides with the first great industrial arms race, from George Chesney’s phenomenally successful, controversial and influential cautionary tale of a successful German invasion of England, The Battle of Dorking (1871), published in the aftermath of Germany’s shockingly swift victory in the Franco-Prussian war, to the Great War itself, the horrors of which far exceeded its many fictional forecasts. The way in which Wells’s Martian superweapons overwhelm earthly opponents echoes many an earlier fictional encounter involving new
generations of armored ships or large artillery. Many tales of invasion and near-future war were strongly realistic, heavily concerned with extrapolating credible technological advances, as exemplified by Wells's well-wrought and critically acute “The Land Ironclads.” But the future-war plot on the whole steered steadily away from realistic prediction into ever more extravagant fantasy. Arthur Train and Robert Wood's The Man Who Rocked the Earth (1915) is typical, with its heady combination of imperialist politics, superweapons, mass destruction, and eccentric scientists – a mysterious and isolated one, who invents a flying machine and an incredibly powerful weapon with which he threatens to destroy the world unless national leaders put an end to their war; and a second, avuncular, absent-minded one, who saves the world from the first.

The general bellicosity of the milieu is impressive. British and American fantasists of war imagined their countries invading or being invaded by every possible national opponent (Germany was the most frequent choice) and many impossible ones. Xenophobia and racism were endemic. It is no coincidence that Wells's blood-drinking Martian invaders appeared in Pearson's Magazine in the same year that Bram Stoker's Dracula (1897) gave classic form to the plot of vampiric invasion. When the fantasy of international war expanded from domestic invasion to global conflict, the sides frequently were divided along racial lines. George Griffith's The Angel of the Revolution (1893) is an early example, M.P. Shiel's The Yellow Danger (1898) among the most extravagant. Shiel's plot involves a quasi-migratory Chinese invasion of Europe by an army of 400 million who simply walk across the countryside, laying it to waste like a plague of locusts. Carefully diagrammed naval battles are a standard feature Shiel's novel shares with many future-war stories; his climactic battle is remarkable because it produces 20 million Chinese casualties. Shiel follows this with the most gruesome turn of all when the English deliberately unleash a cholera epidemic upon the Chinese swarm on the continent, killing some 150 million in the process. The theme of the Yellow Peril only grew more popular after Shiel, continuing unabated right into the interwar years, especially in the USA.

To some extent the scope of the disasters imagined in these racial fantasies partakes of a more generalized apocalypticism that manifested itself in stories of cataclysmic transformation, both natural and human-made – volcanic eruptions in Allen’s “The Thames Valley Catastrophe” (1897) and Shiel's The Purple Cloud (1901); astral collisions in Wells's “The Star” (1897) and Arthur Conan Doyle's “The Poison Belt” (1915); a mad scientist's experiments in Frederick Turner Jane's The Violet Flame (1899); and all-out class warfare in Jack London's The Iron Heel (1908). Such stories vary considerably in the degree to which they perform secular transformation of enduring motifs in the Christian tradition, and the persistence of mythological motifs like flooding and cyclicality invites other forms of psychological and cultural interpretation as well. After the First World War, especially in England, this apocalyptic strain frequently blended with pessimism about the future of civilization in novels like Edward Shanks's The People of the Ruins (1920) and P. Anderson Graham's The Collapse of Homo Sapiens (1923).

Throughout the nineteenth century, colonial and imperialist expansion also provided an environment in which popular audiences avidly consumed both fictional
and nonfictional accounts of exploration. By the early twentieth century, while the extent of Britain’s empire (and of European imperialism in general) was reaching its peak, the still unexplored areas of the globe had become few and extremely remote. Stories of exploration became correspondingly more fantastic. Extraterrestrial adventure remained a relatively minor motif during most of this period; in the late nineteenth century extraterrestrial visitors were more often associated with occult wisdom and utopian speculation than with the earthly frontier. The great majority of imaginary exploration before Edgar Rice Burroughs’s *Barsoom* stories (beginning with “Under the Moons of Mars” (serialized 1912, as book *A Princess of Mars* 1917)) occurred wherever on Earth the writers could still place an isolated enclave for earthly travelers to penetrate – in the African or South American interior, at the poles or under the Earth. But writers employed these options with impressive frequency. Historians of sf have had little to say about the lost-race and lost-world stories that make up several hundred of the more than 2,500 items in Bleiler (1990), but they are important precursors to the later development of adventure-oriented sf (see Rieder 2008).

Lost-race and lost-world narratives – the paradigm for lost-race fiction is set by Haggard’s novels mentioned above; some typical, readable later examples are Frank Aubrey’s *The Devil-Tree of El Dorado* (1897) and *The Queen of Atlantis* (1899), and Robert Ames Bennett’s *Thyra: a romance of the polar pit* (1901); the lost-world romance is a variation pioneered by Conan Doyle’s *The Lost World* (1912) – are on the whole formulaic and often relatively transparent fantasies of acquisition in which a small group of white men discovers an isolated civilization where they have exciting adventures finding treasure and love. The explorers frequently become embroiled in a civil war, allying themselves with a sympathetic princess against a perverse priesthood. Entry into the lost world is an ordeal, often involving a tortuous passage through an underground tunnel or river; this entrance is typically sealed upon the explorers’ exit, making their journey a private and unrepeatable one rather than the vanguard of colonial penetration. These formulaic elements combine to construct a wish-fulfilling ideological distortion that casts colonial exploration and expropriation as a return to nature, a rediscovery of lost histories and properties, and salvation for the good natives (who embrace the white men as friends or lovers) against their true enemies, the bad natives (who regard the white men as invaders and sexual rivals). Yet in the best of such narratives, like Haggard’s or Conan Doyle’s, such fantasies are offered up for enjoyment and simultaneously exposed to critical examination, especially by enforcing some ironic distance between the narrator and the expeditionary leader.

Even in the hands of less expert writers, lost-race and lost-world narratives offer their readers a fascinating array of ideas about social and cultural possibilities. The stories tend to take an anthropological orientation that is ingenuously revealed in the subtitle of Thomas Janvier’s *The Aztec Treasure House: a romance of contemporaneous antiquity* (1890). They often combine the idea that non-European societies represent moments in Europe’s past with utopian speculation, as various lost races practice forms of communism, polygamy, nudity, vegetarianism, and eugenic discipline. Although most lost-race civilizations are based on savage, classical, or medieval societies, some are futuristic, as in Will Harben’s *The Land of the Changing Sun* (1894). When combined
with evolutionary theory, the scientific orientation of such fiction produces another entire subgenre about the relationship of human nature to culture, the narrative of human prehistory, such as Stanley Waterloo’s *The Story of Ab* (1897), Wells’s “A Story of the Stone Age” (1897), and London’s *Before Adam* (1907). The same anthropological perspective, combined with a kind of vertiginous oscillation between the protagonist scientist’s racist contempt for a contemporary savage society and his intellectual awe before what he takes to be a long-lost artifact of a super-advanced extraterrestrial visitor, characterizes London’s “The Red One” (1918), one of the best pieces of sf from this period. But no one employed lost-race and lost-world geography with greater energy or a more spectacular proliferation of anachronistic materials than Burroughs (see, for example, *At the Earth’s Core* (1914) or *The Land That Time Forgot* (1918)) and his one rival in terms of commercial domination of the pre-*Amazing* magazines, A. Merritt (see *The Moon Pool* (1919)). It is to a large extent Burroughs’s combination of lost-race adventure formulas with an extraterrestrial, part-savage, part-medieval, part-futuristic setting in *A Princess of Mars* and its sequels that set the stage for the space operas of E.E. “Doc” Smith and Edmond Hamilton in the Gernsback magazines. (Sometimes Robert William Cole’s dreary *The Struggle for Empire: a story of the year 2236* (1900) is cited as the first space opera, but this is no more than a piece of trivia; Burroughs and Merritt are the most significant figures.) Finally, in assessing the importance of lost-race fiction, we need to remember that its basic structure was often used as a vehicle of satire, both before Haggard’s commercial breakthrough (Samuel Butler’s *Erewhon* (1872)) and after (Wells’s “The Country of the Blind”). In fact, two of the best pieces of feminist speculation in this period employ lost-race motifs: Inez Gillmore’s very fine but little-known allegory *Angel Island* (1914), and Charlotte Perkins Gilman’s deservedly famous parthenogenetic utopia *Herland* (1915).

Although we can plausibly identify several economic and social factors that encouraged the growing market for early sf, the coherence and the limits of the category itself remain open to debate. Perhaps the key question about this period is whether, and at what point, we can say that a new set of generic expectations had become sufficiently widespread and well enough defined to organize the production, distribution, and reception of the literature assembled in the bibliographies. Contemporaries’ persistent association of Verne with Wells, to the annoyance of both, suggests the presence of some such recognition, because as individual artists they resemble one another so little that their association can only rest on some kind of generic common ground. This would imply that, decades before *Amazing Stories*, Verne and Wells were perceived to be staking out a new, if perhaps not very precise, position in the terrain of literary possibilities. And that terrain itself was rapidly changing. The emergent sf of 1895–1926 comes into visibility against the backdrop of the generic turmoil associated with the growth and increased diversity of reading audiences and with the marketing practices of what would soon come to be called mass culture. Sf attains the status of a recognizable genre within this mass-cultural transformation of the entire system of literary genres. In this connection, the somewhat inchoate state of early sf, compared with its relatively clearer status after the American magazines came to name and dominate the genre, makes the period all the more interesting and instructive.
One could well argue, in fact, that the loose boundaries, imprecise definition, and disparate audiences of 1895–1926 comprise a far more typical state of affairs for a literary genre than the one that has so often been the point of departure for discussions about sf, namely the highly self-conscious elaboration of the genre in the American magazines of the late 1930s through the 1950s, spearheaded by a powerful editor (John W. Campbell), featuring a highly visible group of writers strongly and sometimes exclusively associated with the genre, and attended by a self-identified, committed, and very vocal group of fans. The most serious attempt to come to terms with the differences between Wells's generic environment and that of sf's so-called “Golden Age” remains Stableford (1985), which describes a field of production strongly bifurcated along national lines, dominated by one-volume book publication in the UK, and by magazine publication, with a concomitant emphasis on the short story, in the US. The British “scientific romance,” the tradition of Wells, flourished from the late nineteenth century into the 1950s, but from the 1940s on it was increasingly overshadowed and eventually displaced by American “sf,” the tradition of Burroughs, Merritt, and Gernsback. But the opposition Stableford details could well be considered less a national than an endemic one developing between mass culture and the older literary practices that persisted alongside it, which were increasingly forced to redefine themselves in opposition to it.

Putting the divided field of early sf alongside the quasi-programmatic unities of the “Golden Age” helps remind us that sf itself is not merely a mass-market genre. Burroughs, with his tireless reiteration of a successful adventure formula, is certainly a prototypical mass-market writer, whose corpus resembles that of Zane Grey or Agatha Christie at least as closely as it does that of any other early sf writer. But Gernsback, in the first issue of *Amazing Stories*, would call upon Wells and Verne and Edgar Allan Poe, not Burroughs, as models; and the fact that Wells enjoyed success across a number of genres, including the realist novel, makes him anything but a special case, as witness the contributions to sf by Joseph Conrad (*The Inheritors* (1901)) and E.M. Forster (the important early dystopia, “The Machine Stops” (1908)). Outside of England, much of the best early sf was produced by writers with high prestige in other fields, such as the eminent French sociologist Gabriel Tarde, whose splendid satire *Underground Man* (1905) may have provided important inspiration for Forster’s story; or John MacMillan Brown, chancellor of the University of New Zealand, whose *Riallora* (1897) and *Limanora* (1903) combine scathing satire against religious orthodoxy, racism, colonialism, and bureaucracy with one of the period’s most ambitious and elaborately detailed futuristic utopias; or the great Czech writer Karel Čapek, who is most often remembered in sf history for inventing the word “robot” in *RUR* (*Rossum’s Universal Robots*) (1920), but was also the most prominent writer of realist fiction in his country at the time of his death in 1938. Sometimes the affiliation of sf with older and more prestigious literary forms, such as the strong element of satire always present in the dystopia (for example, Yevgeny Zamyatin’s *We* (written 1920, translated into English 1924)), has tended to isolate these strains of sf from the rest of the genre, but such hybrid products are arguably just as persistent and definitive a feature of the genre as the formulas of Burroughs or the marketing strategy of Gernsback.
Nonetheless, it is to the pulp magazines and their reconfiguration of fictional genres that we owe the dominant version of sf. The association between magazine publication and early sf goes back as far as the publication of Chesney's *The Battle of Dorking* in *Blackwood’s* (1817–1980), or even, if one accepts Gernsback's claims, to Poe's magazine publications. But the crafting of magazines that pursued a sharply defined niche audience by publishing a very consistent genre of fiction becomes part of the history of sf when the success of Burroughs’s “Under the Moons of Mars” and “Tarzan of the Apes” in *All-Story* (1905–20) in 1912 helped to focus and intensify the genre specialization of *All-Story* and its companion *Argosy* (1882–1978). Gernsback had already entered the publishing field in 1908 with *Modern Electrics*, which became *Electrical Experimenter* in 1913 and later *Science and Invention*. He began to make scientifically oriented fiction a regular part of *Modern Electrics* after publishing *Ralph 124C 41+* there in 1911–12, and in 1923 he published a special “scientifiction” issue of *Science and Invention*, the year in which another important magazine, *Weird Tales* (1923–54), entered the field. In April 1926, when Gernsback published the first issue of *Amazing Stories*, *Weird Tales* featured on its cover a story by Robert E. Howard, the patriarch of swords and sorcery. Thus the mixture, in that first issue of *Amazing*, of reprinted stories by Poe, Verne, and Wells with three more recent magazine pieces (by George Allan England, Austin Hall, and G. Peyton Wertenbaker) suggestively combines an appeal to established, prestigious favorites with a selective endorsement of Gernsback’s immediate milieu. Whatever we make of Gernsback’s contribution to the development of modern sf, the magazines of 1912–26 offer a rich and still inadequately explored opportunity for research into its mass-cultural roots.

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From downtown Seattle’s Westlake Center Mall station, it takes just two minutes by monorail to reach Seattle Center, in the shadow of the Space Needle and located within the strikingly odd Frank Gehry building that houses the Science Fiction Museum and Hall of Fame. Clock time, however, may not be the best way to measure the journey, as it not only takes riders to one of the obvious destinations for a tourist interested in sf, but also reminds us that something we might call “sf tourism” involves a matrix of locations, events, ideas, and technologically imbricated phenomena that promote and reinforce the attitude toward the world or free-floating epistemology of “sf thinking.”

Of course, the Science Fiction Museum (SFM) deserves a prominent place in any discussion of sf tourism (as does the Maison d’Ailleurs in Yverdon-Les-Bains, Switzerland). The SFM, housing Microsoft billionaire Paul Allen’s extensive collection of sf-related material and The Science Fiction and Fantasy Hall of Fame, is a nonprofit organization that features permanent and rotating galleries and exhibits designed to provide visitors with “thought-provoking ideas and experiences of science fiction … [It] promote[s] awareness and appreciation of science fiction literature and media … [and] pays homage to the most respected of science fiction practitioners – writers, artists, publishers and filmmakers” (EMPSFM n.d.). The SFM also offers traveling exhibits, hosts a range of SF-related events, sponsors a number of educational programs, and maintains an informative website. On a smaller scale, the Maison d’Ailleurs features exhibits and an extensive photo library, and houses a research center and archive. In the most literal way of thinking about sf tourism, these two museums would have to be primary destinations.

However, the concept of sf tourism is not just limited to these and other geographical destinations where sf is the announced subject or focus of an educational institution or commercial venture. That ride to the SFM reminds us of the longstanding iconic association of monorails not just with sf, but with the future in general, and world’s fairs and amusement parks in particular, locations where countless people (over 5 million per summer at Coney Island during the early 1900s; over 20 million admissions to most of the large world’s fairs) were introduced to the sensibility centered on change, progress, science, technology, and the future that sf ultimately codified in literature and film. Indeed, the Seattle monorail was built to carry visitors to the
1962 Seattle World’s Fair, whose central iconic structure, the Space Needle, offered panoramic views from its observation deck 520 feet above the ground. Giant icons from earlier fairs include the 1,000-foot-tall Eiffel Tower constructed for the Paris Exposition of 1889 and the 260-foot-tall Ferris Wheel that was the centerpiece of the 1893 World’s Columbian Exposition in Chicago. These most dramatic examples of the “technological sublime” (Nye 1994) had nothing directly to do with sf, but, alongside world’s fairs, amusement parks such as Coney Island, dime museums, and related physical locations, promoted the kind of mindset about technology and the future that gave rise to sf literature.

Accordingly, this chapter will have more to do with what we might think of as material embodiments of sf’s “sense of wonder,” than with clearly self-identified destinations for the tourist interested in codified sf history or subject matter. I will focus on a number of formative elements in the emergence of mass culture (primarily in the US) that are not generally thought of as science-fictional, but whose obvious and influential affinity with sf thinking (Landon 2002: 2–10) is often noted. I will start with actual geographical destinations, whether historical or contemporary, ranging from world’s fairs to Disney World, where a tourist could or can see sights that are inherently, but not necessarily, closely related to and supportive of the protocols of sf thinking. Smaller-scale but no less important destinations will include American dime museums, exemplified by P.T. Barnum’s American Museum in New York. I will then turn to those virtual worlds created by technology, whether the world of the heavens constructed in planetariums, the hybrid world of motion-platform movie experiences, or the worlds of cyberspace, particularly as experienced in online multiplayer games. Finally, I will briefly consider some sf texts that feature fictional tourism in their plots, suggesting sf about tourism as yet another aspect of “sf tourism.”

The case for a figurative construction of sf tourism (and for the construction of a material history of sf) rests on scholarship that explores the mechanisms by which technology has been constructed and represented in (largely American) mass culture in general and in literature in particular (see especially Tichi 1987; Nye 1994, 1997; Dery 1999). Most directly relevant to the conception of sf tourism are H. Bruce Franklin (1992) and Scott Bukatman (2003). Works such as these point toward and beyond the kind of cultural studies rethinking of sf history suggested by Roger Luckhurst (2005).

Franklin compellingly argues that the “principal form of science fiction in 1939” was the New York World’s Fair (Franklin 1992: 108). Contrasting the fair’s attractions, particularly its “Democracy” and the General Motors “Futurama,” with representative stories in the 1939 volume of Astounding, he notes that “A fair billing itself as the World of Tomorrow may be considered just as much a work of science fiction as a short story or a novel, a comic book or a movie” (Franklin 1992: 119), while also offering a blistering critique of the corporate and automobile-centered future the fair promoted. Franklin was not alone in drawing this connection, as commentaries on the 1939 fair repeatedly invoke sf to explain its exciting appeal. Neil Harris describes all of the “Century of Progress” fairs of the 1930s as “Buck Rogers cities” (Harris 1990: 129), Morris Dickstein characterizes the World of Tomorrow as “a stunning piece of
science fiction” (Dickstein 1989: 22), and memoirs of visits to the 1939 fair routinely describe it as “something out of Buck Rogers or Flash Gordon” (Rosenblum 1989: 12), or note that its vistas were strongly reminiscent of the view of the future offered in the movie *Things to Come* (Menzies 1936) (Appelbaum 1977: 5). Indeed, perhaps the strongest evidence of the science-fictional aspect of this and earlier fairs can be seen in the numerous photo books recording their transient wonders (see Appelbaum 1977, 1980).

Following Franklin, it is easy to enumerate ways in which previous world’s fairs featured (starting with the London Crystal Palace Exhibition of 1851, but focusing most intently on the Paris Expositions of 1889 and 1900, the Chicago World’s Columbian Exposition of 1893, the Buffalo Pan-American Exposition of 1901, and the St Louis Louisiana Purchase Exposition of 1904), both in their general utopian ambience and in their specific architecture and attractions, powerful inducements for imagining the future, celebrating change as the new constant of experience, constructing change as progress, and seeing science and technology as its driving force – all central aspects of sf thinking. In their time, these fairs were the greatest tourist attractions ever, as millions upon millions of visitors marveled at their wonders. Moreover, these earlier fairs were held during the period when sf was beginning to emerge from its various prototypes into the codified form it eventually assumed as a publishing category and mass-cultural phenomenon. At the heart of this process, at least in the US, were the dime-novel series featuring the exploits of boy inventors such as Frank Reade, Jack Wright, and Electric Bob, whose scaled-down *voyages extraordinaires* could be suggested by the “exotic” ethnographic and anthropological exhibits (and midway sideshows) that were prominent features of the great fairs and expositions, and whose amazing inventions could be easily imagined after a visit to the World’s Columbian Exposition’s Electricity Building, one of the premier attractions of the fabled White City, where Edison’s and Tesla’s actual inventions symbolically competed for the future.

Henry Adams (1973), drawing on his experiences at the Paris Exposition of 1900 and the Columbian Exposition in 1893, ironically observed that dynamos, emblems of the power and potential of electricity, were beginning to assume in the popular imagination a status previously accorded religion and its great icons. Robert W. Rydell has elaborated Adams’s initial suggestion, detailing how American world’s fairs became “symbolic universes” that resembled religious celebrations where the object of worship was change, relentlessly constructed as progress (Rydell 1984: 2). A striking component of these celebrations of progress through science and technology was a faith in notions of evolutionary hierarchy that elevated white races over those of color. As Rydell notes, “Scientific explanations about natural and social phenomena became increasingly authoritative, and the exposition planners enhanced and drew upon the prestige of science to make the presentation of America’s progress more convincing” (Rydell 1984: 5). The authority of science and the application of evolutionary ideas to race produced a “sliding scale of humanity” (Rydell 1984: 65), with these fairs in general, and the great White City in particular, serving as “a utopian construct built upon racist assumptions” (Rydell 1984: 48). And sf inherited this
aspect of the fairs just as surely as it inherited their focus on technological progress – including the unmistakable valorization of colonialism and empire by both European and American fairs.

The fairs were designed to serve an educational function, to be an “illustrated encyclopedia of civilization” that visitors could walk through (Rydell 1984: 45). Umberto Eco takes this idea a step closer to sf when he suggests that a world’s fair cannot just be thought of as a “walk-in encyclopedia,” but as a “teaching machine,” an “enormous experimental laboratory,” not one designed to produce immediate results but to offer “suggestions and ideas for architecture and design” (Eco 1983: 305–6). These and other characterizations of the nature and function of world’s fairs will sound familiar to students of sf, where similar claims attended the emergence of the genre. So, while specific attractions at specific fairs (the Ferris Wheel and the Electricity Building in Chicago, the “Trip to the Moon” ride at the 1901 Pan-American Exposition, and exhibits of wondrous new technologies beyond number) made a trip to a world’s fair a subtle endorsement of the scientific and technological change-and-progress-centered ethos of sf thinking, the great fairs at the turn of the nineteenth century into the twentieth may have had even greater influence on the development of sf at broader and more abstract levels, offering examples of “sf tourism” destinations avant la lettre while squarely endorsing the techno-enthusiasm of proto-sf dime novels.

World’s fairs were temporary phenomena, rarely lasting beyond a couple of years, usually closed and torn down after only six months or so. However, precisely the aspects of these fairs that most obviously promoted the same ethos as did sf – exhibits featuring wild and exotic peoples from faraway lands and entertainment venues driven by new technologies – tended to live on in amusement parks. The most celebrated of these was Coney Island (see Kasson 1978; McCullough 2000; Register 2001), which, particularly between 1897 and 1911, was a kind of unruly successor to the World’s Columbian Exposition of 1893 and the Buffalo Pan-American Exposition of 1901. It was the location of three legendary amusement parks: George Tilyou’s Steeplechase Park, Frederic Thompson and Skip Dundy’s Luna Park, and William H. Reynolds’s Dreamland. Each prominently featured mechanical rides, disaster attractions, and fantastic architecture reminiscent at once of world’s fairs and of Winsor McCay’s imaginary landscapes for Little Nemo, and each offered a veritable orgy of electric lights at a time when they still signified the future. Tilyou, unsuccessful in his efforts to purchase the Columbian Exposition’s Ferris Wheel for Steeplechase Park, constructed a scaled-down model and simply claimed that it was the world’s largest. He also brought from the Pan-American Exposition the very successful “A Trip to the Moon” ride created there by Dundy and Thompson (who soon split from Tilyou to create their own Luna Park in 1903). This “dramatic cyclorama” cannot be described as anything other than one of the early destinations of sf tourism:

Here visitors entered a spaceship in the middle of a large building for an imaginary ride to the moon. Peering out of portholes, they beheld a series of shifting images that gave the illusion of a flight into space, a sense reinforced by the rocking of the ship itself. After supposedly landing on the moon,