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Nineteenth-Century SF

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2
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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

sf genre, others disagree, insisting that "SF is a literature of technologically saturated societies" and a "genre that can therefore emerge only relatively late in modernity ... a popular literature that concerns the impact of Mechanism (to use the older term for technology) on cultural life and human subjectivity" (Luckhurst 2005: 3).

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

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. Paleoanthropology 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), *Eyrimah* (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*

(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 presumes 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 lifeforms throughout the cosmos). Other sf tales about alien lifeforms 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 *ferromagnétaux*. 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 lifeform 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 hermeneutic 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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