


1999

The Origins of Science Fiction Criticism: From Kepler to Wells

Arthur B. Evans
DePauw University

Follow this and additional works at: http://scholarship.depauw.edu/mlang_facpubs

 Part of the [French and Francophone Language and Literature Commons](#), and the [Modern Languages Commons](#)

Recommended Citation

Arthur B. Evans. "The Origins of Science Fiction Criticism: From Kepler to Wells" *Science Fiction Studies* 26.2 (1999): 163-186.
Available at: http://scholarship.depauw.edu/mlang_facpubs/14/

This Article is brought to you for free and open access by the Modern Languages at Scholarly and Creative Work from DePauw University. It has been accepted for inclusion in Modern Languages Faculty Publications by an authorized administrator of Scholarly and Creative Work from DePauw University. For more information, please contact bcox@depauw.edu.

Arthur B. Evans

The Origins of Science Fiction Criticism: From Kepler to Wells

The world of conjecture is without limits. To speculate on the possible and the future is no ineligible occupation. The invention is active to create, and the judgment busy in weighing and shaping its creations. Our own pleasure is promoted, for there is pleasure in the mere exercise, and the happiness of others is not neglected. Truths of the utmost moment may thus be struck out and communicated to others. None of my faculties have been so much exercised as my invention, and I value myself on this circumstance, because it is the surest pledge of my own felicity and usefulness.

—Charles Brockden Brown, 1788

For some contemporary scholars of science fiction, the phrase “pre-twentieth-century sf criticism” is an oxymoron. A brief survey of various sf reference books and critical articles published over the past couple of decades makes this quite clear. Thomas Clareson, for example, in his seminal *Science Fiction Criticism: An Annotated Checklist* (1972)—one of the first attempts to identify and describe the now substantial critical corpus relating to sf—includes no works published before 1917. A. Langley Searles, in his 1980 bibliographical article on the same topic, claims that “Deliberate science-fiction criticism ... started with a fan magazine titled *The Science Fiction Critic* which published fourteen issues between November 1935 and December 1938....” (159). The well-reputed *Encyclopedia of Science Fiction* (1993), edited by John Clute and Peter Nicholls, informs us that “Before 1970 very little useful material was available....” (277). And Gary K. Wolfe, in his synoptic essay “History and Criticism” published in the most recent *Anatomy of Wonder 4: A Critical Guide to Science Fiction* (1995), explains:

[C]ritical writing about SF has evolved out of three distinct traditions....

The earliest of these traditions to become clearly identifiable began in the letter columns of the pulp magazines and the hectographed “fanzines” of the 1920s and 1930s....

A second tradition of SF criticism ... evolved during the 1940s as professional writers began publishing commentaries on each other, on the nature of SF, and on various matters of technique and professional strategy....

Still a third tradition of discourse came into play as academically trained scholars—and the occasional commentator from the “mainstream”—began to pay increasing attention to popular fantastic literature.... (483-85)

One must acknowledge, however, that this question is closely tied to each individual critic’s definition of the genre itself. Over the years, there have been a number of critics—Sam Moskowitz, J.O. Bailey, Everett Bleiler, Robert Philmus, H. Bruce Franklin, James Gunn, Pierre Versins, Brian Aldiss, Brian Stableford, and Darko Suvin, among others—who have encouraged a more historical and international view of the genre. And they have argued that the first true examples of science fiction predate the twentieth century, thereby

broadening the definition of sf to include works of rationally conjectural fiction published as far back as the early nineteenth century or before: Verne, Poe, Shelley, Mercier, Swift, Defoe, Cyrano de Bergerac, Godwin, More, Lucian of Samosata, et al. For instance, Brian Aldiss has consistently maintained—in his *Billion Year Spree* (1973) and elsewhere—that the real generic starting-point for sf was Mary Shelley's scientific-gothic tale *Frankenstein*. Everett F. Bleiler in his hefty *Science-Fiction: The Early Years* (1990) has asserted that “The first story, in my opinion, that could indisputably be called science-fiction is Johannes Kepler's *Somnium*....” (vii). Pierre Versins, in his equally weighty *Encyclopédie de l'utopie, des voyages extraordinaires et de la science-fiction* (1972), has detected sf's ancestral origins in a variety of ancient myths and legends like the *Epic of Gilgamesh*, Homer's *Odyssey*, and Plato's Atlantis. And Darko Suvin, in his aptly titled *Metamorphoses of Science Fiction* (1979), has contended that

the concept of a science fiction tradition or genre is a logical corollary of the recognition of SF as the literature of cognitive estrangement. It can be gleaned from my approach and examples that I think the literary genre which I am trying to define embraces the subgenres ... from Greek and earlier times to today (the Islands of the Blessed, utopias, fabulous voyages, planetary novels, *Staatsromane*, anticipations and dystopias—as well as the Verne-type *romans scientifiques*, the Wellsian scientific romance variant, and the twentieth-century magazine-and anthology-based SF *sensu stricto*). (11-12)

Presumably, this latter group of “inclusive” sf critics would find the term “pre-twentieth-century sf criticism” hardly troubling at all. But, to my knowledge, none has ever attempted to identify, discuss, or systematize a history of critical commentaries about sf which date from this time.

It is this particular task of literary archeology that I propose to undertake in the following pages.

In part because of space limitations, I shall limit my discussion to those texts I feel to be the most important, influential, or interesting in historical retrospect. I shall also give highest priority to those that address questions of genre, literary theory, and/or early definitions of sf. Finally, because they can be at times difficult to obtain, I shall try to include as many direct quotations from these sources as possible for purposes of future reference. It is not my intention to offer the “last word” on early sf criticism; my efforts here are only a preliminary charting of the terrain. It is my hope that other sf scholars will find this study a useful starting-point for their own explorations and will feel encouraged to build upon it.

Without venturing further back in history, I shall begin my inquiry with the Renaissance/post-Renaissance in Europe—during that vibrant period of intellectual curiosity often described as the dawn of the age of modern science. It might be argued that, regardless of their original intent as satire, didacticism, utopianism, or simple wonder-filled exoticism, certain seventeenth-century “imaginary voyages” might be considered as among the earliest examples of science fiction. The reason is simple: they were fictional narratives that, unlike the many imaginative fantasies that preceded them, were both rationally

speculative and predicated upon the rapidly spreading “new philosophy” of Copernican astronomy.

As such, it would seem logical to assume that any non-fictional commentaries about these works ought to be considered as among the earliest identifiable examples of sf criticism. If this be true, then Johannes Kepler (1571-1630) must be recognized as one of Western literature’s first sf authors *and* critics.¹ Kepler’s posthumous didactic fable *Somnium (The Dream, 1634)*—wherein he embarks on an imaginary voyage to the moon for the purpose of making certain “extraordinary” astronomical observations—also contains a huge exegetical supplement of some 223 *Notes* appended to the main narrative. In these *Notes* (written between 1620 and 1630), Kepler provides lengthy explanations of Galileo’s and Tycho Brahe’s theories, his own personal musings, and various comments about how, why, and in what social context his fictional tale was written. Consider, for example, the following excerpts from *Notes #2* and *#4*:

At that time I had not yet seen the works of Plutarch. Later I came across the two books of Lucian’s *True Story*, written in Greek, which I chose as my means of mastering the language. I was helped in my enjoyment of the highly daring tale, which nevertheless offered some intimations concerning the nature of the entire universe, as Lucian himself announces in his introduction. He, too, sails out past the Pillars of Hercules into the ocean and, carried aloft with his ship by whirlwinds, is transported to the moon. These were my first traces of a trip to the moon, which was my aspiration at later times. At Graz, in the year 1595, I first encountered Plutarch’s book.... Nevertheless, the islands mentioned by Plutarch in the ocean around Iceland were not responsible for my choice of Iceland as the starting point of my dream. Among other reasons, however, there was the following. At that time there was for sale in Prague Lucian’s book about the trip to the moon, as translated into the German language by Rollenhagen’s son; bound with it were the stories of St. Brendan and *St. Patrick’s Purgatory* in the earth beneath Mt. Hekla, the Icelandic volcano. Moreover, since Plutarch, in accordance with the belief of pagan theology, located the purgatory of souls on the moon, I decided that when I set out for the moon I would most prefer to take off from Iceland....

I wanted to make this further suggestion: untutored experience, or, to use medical terminology, empirical practice is the mother who gives birth to Science as her offspring. For him it is not safe, so long as his mother, Ignorance, survives among men, to reveal to the public the deeply hidden causes of things. He must rather forbear to injure the venerable beldam, while waiting for the fullness of years which will finally bring about the death of Ignorance, decrepit with old age. The purpose of my *Dream* is to use the example of the moon to build up an argument in favor of the motion of the earth, or rather to overcome objections taken from the universal opposition of mankind. This ancient Ignorance was then, I thought, already dead enough and erased from the memory of intelligent men. Yet the creature still struggles on in a tangle of so many knots tied tightly together through so many centuries. The aged mother continues to exist in the universities, but such is her existence that seemingly she ought to look upon death as more desirable than life.... (*Somnium* 11, 30-36)

Kepler’s commentary in these *Notes* provides clear answers to that holy trinity of questions most often asked by (pre-modern) literary critics: i.e., what was the

author's intent in this fictional work? (Answer: scientific pedagogy—"to use the example of the moon to build up an argument in favor of the motion of the earth.") What *tradition* was he part of and who were those authors who inspired him? (Answer: Lucian, Plutarch, et al.—"These were my first traces of a trip to the moon, which was my aspiration at later times.") And how does this work reflect the *historical milieu* in which it was written? (Answer: the dangers of scientific inquiry in the face of possible religious persecution—"empirical practice is the mother who gives birth to Science as her offspring. For him it is not safe, so long as his mother, Ignorance, survives among men, to reveal to the public the deeply hidden causes of things. He must rather forbear to injure the venerable beldam, while waiting for the fullness of years which will finally bring about the death of Ignorance, decrepit with old age.")

The next document that might reasonably be called early sf criticism is the short and semi-anonymous preface to Francis Godwin's *The Man in the Moone* (1638), written by a certain "E.M.":

To the Ingenious Reader. Thou hast here an essay of Fancy, where Invention is shewed with Judgment. It was not the Author's intention (I presume) to discourse thee into a beliefe of each particular circumstance. Tis fit thou allow him a liberty of conceite where thou takest to thy selfe a liberty of judgment. In substance thou hast here a new discovery of a new world, which perchance may finde little better entertainment in thy opinion, than that of Columbus at first, in the esteeme of all men. Yet his then but poore espiall of America, betray'd unto knowledge soe much as hath since encreast into a vast plantation. And the then unknowne, to be now of as large extent as all other the knowne world. That there should be Antipodes was once thought as great a Paradox as now that the Moon should bee habitable. But the knowledge of this may seeme more properly reserv'd for this our discovering age: In which our Galilaeusses, can by advantage of their spectacles gaze the Sunne into spots, & descry mountaines in the Moon. But this, and more in the ensuing discourse I leave to thy candid censure, & the faithful relation of the little eye-witnesse, our great discoverer. E.M. (23)

Whereas Kepler defines the principal *raison d'être* of his dreamscape-like parable to be scientific didacticism—the first of many such works in an sf tradition that will eventually stretch through Fontenelle in the eighteenth century to Jules Verne in the nineteenth—the author of this preface identifies Godwin's tale as primarily an "essay of Fancy" and as "entertainment." In so doing, E.M. is careful to underscore the supposedly non-polemical character of this extravagant narrative: "It was not the Author's intention ... to discourse thee into a beliefe of each particular circumstance." And he begs the indulgence of the reader to approach the story with an open mind, characterizing Godwin's tale as an "Invention ... shewed with Judgment" and arguing that history has repeatedly proven commonly accepted truths to be false (e.g., Columbus' discoveries).

Once again, the author of this preface shows sensitivity to possible social and/or religious backlash—Godwin's tale, like Kepler's, was published posthumously—and he offers a plea to the reader to exercise rational "opinion" when reading it. Like Kepler, E.M. portrays science as capable of exploring the

frontiers of hidden truths. But now, the “medium” has become the “message.” The verisimilitude of the story itself (rather than the scientific or social lessons embedded within it) seems of utmost importance. For purposes of “entertainment” the reader should attempt to suspend disbelief and imagine that “the Moon should be habitable.” Moreover, to further bolster its plausibility, E.M. hints at the possibility of Godwin’s fiction as portraying a potentially *real* future—one which is “reserv’d for this our discovering age: In which our Galilaeusses, can by advantage of their spectacles gaze the Sunne into spots, & descry mountaines in the Moon.”

What we witness here is an inversion of rhetorical strategies; in Horatian terms, *dulce* has suddenly taken precedence over *utile*. Kepler was not asking the reader to truly believe in his trip to the moon, but rather to believe in the astronomical principles that such a “what if” journey would tend to demonstrate. In contrast, E.M. is appealing to the believability of the “what if” journey *itself*—inasmuch as Godwin’s rational conjectures are “shewed with Judgment.” He addresses the reader’s need for intellectual entertainment and the story’s need for fictional verisimilitude to achieve this pleasurable end.

It is not unreasonable to discern in these two “ur-texts” of sf criticism the origins of two distinct but interwoven traditions in the history of sf itself: “didactic sf,” which is pedagogical by design and gives primacy to scientific exposition over the fictional narrative (e.g., Verne), versus “romance sf,” which is more visionary by nature and gives primacy to the fiction over the science—or pseudo-science—embedded within it (e.g., Wells).

Godwin’s book, published at a time when belief in the new Copernican astronomy was spreading rapidly,² elicited the following “fancy”-ridden postscript from Bishop John Wilkins in the third edition (1640) of his *Discovery of a New World in the Moone* (1638)—a popular work of non-fiction offering “scientific” arguments in favor of the moon as a livable habitat:

Having thus finished this discourse, I chanced upon a late fancy to this purpose under the fained name of Domingo Gonsales, written by a late reverend and learned Bishop; In which ... there is delivered a very pleasant and well contrived fancy concerning a voyage to this other world. He supposeth that there is a naturall and usuall passage for many creatures betwixt our earth and this planet....

And here, one that had a strong fancy, were better able to set forth the great benefit and pleasure to be had by such a journey. And that whether you consider the strangeness of the persons, language, arts, policy, religion of those inhabitants, together with the new traffique that might be brought thence. In briefe, doe but consider the pleasure and profit, of those later discoveries in America, and wee must needs conclude this to be inconceivably beyond it.

But such imaginations as these, I shall leave to the fancy of the Reader. (240-42)

As a blatant case of editorial censorship, the original publication in France of Savinien Cyrano de Bergerac’s *Histoire comique des états et empires de la lune* (*Comical History of the States and Empires of the Moon*, 1657) is especially interesting. Henri Le Bret was Cyrano’s well-meaning friend who, following the premature death of the author, heavily edited his manuscript (removing entire sections deemed too provocative) and attached a more farcical

title to it (Cyrano wished it to be called simply *L'Autre Monde* [*The Other World*]). Le Bret wrote a laudatory but politically correct preface for it and eventually arranged for its publication two years after Cyrano's death. It wasn't until 1921 that a complete and unexpurgated version of Cyrano's work finally appeared.

Like E.M.'s earlier preface to Godwin's book, Le Bret's preface to Cyrano's novel contains the same sort of *a priori* rationalizations to defend it against potential religious backlash and/or reader disapprobation. Once again, two fundamental tactics are used: first, what might be called the "entertainment effect"—characterizing the story as mere fanciful whimsy meant primarily to entertain—and, second, what I have referred to elsewhere³ as the "inoculation effect"—where the narrator or (in this case) the introducer vaccinates against potential reader indignation by freely acknowledging the author's temerity beforehand, asking for the reader's indulgence, and pointing out "authoritative" precedents to such audacious imaginings:

It is not that I wish to impose on anyone the necessity of judging [Cyrano's work] by my eyes alone. I know too well that any reading is only enjoyable in proportion to one's freedom. That is why I think it best that all judge the strength or weakness of his genius for themselves. But I beg the most gracious readers to keep in mind the kindly thought that the author had only one goal, to be amusing.... (15)

[But] his fantasy is not entirely without verisimilitude, and many great men of the past and present have believed the Moon to be habitable or inhabited ... Heraclitus ... Xenophon ... Anaxagoras ... and Lucian, who saw there men with whom he conversed and with whom he warred against others from the Sun—a tale which both is much less believable and has much less imagination than Monsieur de Bergerac's. In this, the Moderns have surely prevailed over the Ancients: the wild geese that transported the Spaniard to the Moon and whose book appeared here 12-15 years ago, and Monsieur de Bergerac's bottles of dew, rockets, and iron chariots are machines much more agreeably imagined than the ship Lucian had used to go there. ... All this [listing of other philosophers and writers] is to simply say that, to his credit, Monsieur de Bergerac shared the beliefs of many great men before him but, unlike them, treated this fancy [*chimère*] humorously instead of too seriously. (16-17)

By undercutting the seriousness of these sf tales—i.e., by playing down (or, in the case of Le Bret, omitting entirely) their trenchant satiric content or their scientific-philosophical didacticism—such early sf commentators sought above all to portray them as a benign and light source of intellectual amusement ("fancy"). Sometimes this strategy worked; sometimes it didn't.

Consider, for example, the differing reactions to such early moon narratives from the following three seventeenth- and early eighteenth-century writers.⁴ The first is from one of France's earliest literary critics, Charles Sorel, in his 1664 volume *Bibliothèque Française* (French Library), where he discusses Cyrano's *Histoire comique des états et empires de la lune* and judges it to be highly entertaining fantasy:

We had seen, some time ago, the translation of a book called *The Man in the Moone*, where a Spaniard told of having been transported there by means of a device

powered by a certain breed of birds. But our French author claims to have gone there using bottles of dew [Ed. note: Sorel is mistaken here—the bottles of dew were used in an earlier episode to travel across the Atlantic to French Canada; Cyrano's hero later travelled to the moon in a rocket-powered vehicle], that he had seen this Spaniard there, and that he had argued with him about what he had observed in this land. These tales go one better than the great astronomer Kepler's *Dream* who described the Moon in detail, and one better than the book of a modern philosopher entitled *A New World in the Moon*, and one better than the many maps made of this heavenly body where all the spots are described as islands or large continents divided into provinces to which various names have been given. Monsieur Cyrano has also written a book called *Etats et empires du soleil*, wherein are described other strange regions. Such fantasies give much pleasure to those who read them. (100-101)

The second is from a 1687 Molièresque farce by the English playwright Aphra Behn. It is entitled *Emperor of the Moon*, and the anti-hero of the play, Doctor Baliardo, has become madly obsessed with the idea of traveling to the moon and establishing an empire there. His friends and family attribute the cause of this delusional "disease" to Baliardo's having read too many "foolish Books" of this type (a clear indication of just how popular these stories were during this historical period):

Scaramouch: ... Lunatick we may call him without breaking the Decorum of good Manners; for he is always travelling to the Moon.

Elaria: And so Religiously believes that there is a World there, that he discourses as gravely as of the People, their Government, Institutions, Laws, Manners, Religion and Constitution, as if he had been bred a *Machiavel* there.

Scaramouch: How came he then infected first?

Elaria: With reading foolish Books, *Lucian's Dialogue of the Lofty Traveller*, who flew up to the Moon, and thence to Heaven; an heroick Business called *The Man in the Moone*, if you believe a Spaniard, who was carried thither upon an Engine drawn by Wild Geese; with another philosophical Piece, *A Discourse of the World in the Moon*; with a thousand other ridiculous Volumes too hard to name. (46)

And finally, in a text quite rare for its time, consider *Iter Lunare, or A Voyage to the Moon* (1703) by David Russen, whom one literary critic has described as "the first to write in a mode of science fiction criticism that persists to this day: finding practical solutions to imaginary problems."⁵ The Englishman Russen viewed such conjectural fictions as neither fanciful nor the product of dangerous ravings but as wholly believable. And, after reading Cyrano, he attempted to describe how such a journey to the moon might actually be accomplished—while chastizing Cyrano's translator (actually Le Bret) for exhibiting altogether too much "levity" and lack of proper seriousness in his selection of a title for this work:

But the Title that the Translator gives it (when he calls it a *Comical History*) seems to be too full of Levity, and unbecoming that Gravity which a Treatise of so serious matter doth require. For though it be interlaced with much Matter of Mirth, Wit and Invention, of things even doubtful, or meerly feigned, and so in some sense may be ranked with Sir Thomas Moor's *Utopia*, Don Quixot's *Romantick Whymseys*, or *Poor Robin's Description of Lubbardland*; yet it is throughout carried on with that strength of Argument, force of Reason, and solidity of Judgment in the Demonstra-

tion of things probable, that it may not be unbecoming the Gravity of Cato, the Seriousness of Seneca, or the Strictness of the most rigid Peripatetick or Cartesian; and instead of *Comical*, may deserve the Epithete of the most *Rational History of the Government of the Moon*. (1-4)

The eighteenth century produced many critical commentaries that might—in the broadest definition of the term—be considered as belonging to the tradition of early sf criticism. Indeed, the responses of literary critics to Swift’s *Gulliver’s Travels* (1726) alone would fill dozens of volumes. Less familiar and perhaps of more interest in the context of the preceding discussion, however, are those essays that seem to reflect a palpable evolution in the public’s (or authors’) attitudes toward this form of writing—in part *because* of the worldwide popularity of Swift’s satire.

First, Swift (and sometimes Defoe) became the standard against which other works of speculative fiction of this sort were immediately compared. Consider, for example, the following anonymous book review of Robert Paltock’s *The Life and Adventures of Peter Wilkins* (1750):

Here is a very strange performance indeed. It seems to be the illegitimate offspring of no very natural conjunction betwixt *Gulliver’s Travels* and *Robinson Crusoe*; but much inferior to the meaner of these two performances, either as to entertainment or utility. It has all that is impossible in the one, or improbable in the other, without the wit and spirit of the first or the just strokes of nature and useful lessons of morality of the second.... [I]f the invention of wings for mankind to fly with, is a sufficient amends for all the dullness and unmeaning extravagancies of this author, we are willing to allow that his book has some merit; and that he deserves encouragement at least as an able mechanic, if not as a good writer. (ix)

Second, the implicit acknowledgment of such fictions as belonging to a separate and identifiable literary genre can be seen in the eighteenth-century’s desire to codify and “encyclopedize” them. Such is the goal, for example, of Charles Garnier’s huge 36-volume *Voyages imaginaires, songes, visions, et romans cabalistiques* (Imaginary Voyages, Dreams, Visions, and Cabalistic Novels, 1785-89), the first and perhaps most ambitious attempt to publish a comprehensive anthology of such works. Like many editors and critics before and after him who invoked the classical models of Aristotle and Horace, Garnier explained:

History paints for us men as they have been or as they are; novels paint them for us as they ought to be....

Such will be the principal events that we will present to our readers in this first part of our imaginary voyages.... Criticism, morality, philosophy, interesting depictions: we intend to speak alternatively to the mind in order to amuse and instruct it, and to the heart in order to touch it. (I, 1-4)

The principle that this collection sets for itself is to entertain, to instruct, and to interest. (XII, 3)

Third, although the necessity was still felt by many authors to publish such “estranging” fictions either posthumously or anonymously, their fears of backlash were now based less on religious and more on social and/or political

grounds. Ludvig Holberg, for example, declared that he had published his underground fantasy *Nicolai Klimii iter subterraneum* (Niels Klim's Journey to the Underground World, 1741) anonymously because he "was afraid of being charged with the buffoonery of boyhood" and "was unwilling, after having once devoted my attention to serious pursuits, to be again exposed to the animadversions of those morose judges who detest every thing humorous or facetious" (1743, 170-71). And Louis-Sébastien Mercier offered the following—albeit unabashedly self-glorifying—explanation for the anonymous publication of his futuristic utopia *L'An 2440* (The Year 2440, 1771), a text deemed so provocative that it was officially banned in France for decades,⁶ despite being one of the genuine fictional best-sellers of the eighteenth century (even George Washington and Thomas Jefferson kept copies of it in their private libraries):

I published an unequivocal *prediction* which encompassed all possible changes from the destruction of the parliaments, the nobility, and the clergy to the new fashion of round hats. Never has a prediction, if I may be so bold as to say, been closer to the mark.... I am thus the true prophet of the Revolution.... (1799, 1-2)

Reflecting a significant ideological shift in socio-literary attitudes, such conjecturally "philosophical" tales as Mercier's were now judged as dangerous not because of their displays of religious blasphemy and/or sacrilegious satire but, rather, because they were possible stepping-stones to political sedition.⁷ Mercier's sf narrative portrayed a potentially *real* future and was viewed by the French nobility of his time as a serious threat to the reigning status quo. One of the earliest examples of the *uchronia* in Western literature (almost 100 years before Bellamy's *Looking Backward*⁸), Mercier's utopia derived most of its persuasive power from its revolutionary use of historical *extrapolation*.

It is perhaps the public's growing awareness of the mutability of history itself and of the determinative place of science within it (i.e., "progress") that best defines the essential difference between the imaginary voyages of old and the science fiction narratives of the nineteenth century and beyond. And such a change in outlook can be clearly seen in the sf criticism of this period as well.

This new sense of historical perspective is discernible, for example, in several critical studies from the early nineteenth century targeting, in whole or in part, the chronological evolution of this unique brand of fiction: Henry William Weber's *Popular Romances* (1812), portions of John Colin Dunlop's *History of Fiction* (1814), and especially Félix Bodin's prophetic preface⁹ to his *Le Roman de l'avenir* (The Novel of the Future, 1834) wherein he sketches out the blueprint for an entirely new type of novel, "the epic of the future":

If ever anyone succeeds in creating the novel, the epic of the future, he will have tapped a vast source of the marvelous, and of a marvelous entirely in accord with verisimilitude ... which will dignify reason instead of shocking or deprecating it as all the marvelous epic machinery conventionally employed up to now has done. In suggesting perfectibility through a narrative and dramatic picturesque form, he will have found a method of seizing, of moving the imagination, and of hastening the progress of humanity in a manner very much more effective than the best expositions of systems presented with even the highest eloquence. (20)

Civilization tends to separate us from all that is poetic in the past; but civilization also has its poetry and its marvelous.... New paths are needed for literature, new fields for the imagination.... Those who complain that the past has been exploited enough will not say the same, I hope, about the future. They will say, on the contrary: let us finally try to leave behind this sad past on which our literature is built and to throw ourselves into this seductive unknown! There can be found the revelations of those under hypnotic trance, races in the air, voyages to the bottom of the sea—just as one sees in the poetry of the past sibyls, hippogriffs, and nymphs' grottoes; but the marvelous of the future ... is entirely different from these other poetic marvels in that it is entirely believable, entirely possible, and on that account it can strike the imagination more vividly and seize it by means of realism. Thus we will have discovered a new world, an environment utterly fantastic and yet not lacking in verisimilitude.... (28-30)

Consider also Camille Flammarion's 600-page treatise entitled *Les Mondes imaginaires et les mondes réels* (Imaginary and Real Worlds, 1865)—an early attempt to provide the first comprehensive literary history of such “other world” narratives.¹⁰ A nineteenth-century Carl Sagan, the popular astronomer and novelist Flammarion fervently believed in life on other planets (“plurality of worlds”). The primary purpose of his *Les Mondes imaginaires* was to proselytize this theory by providing an annotated chronological listing of all fictional and non-fictional books ever published on this particular theme, from the ancient Greeks to Jules Verne. In his preface, Flammarion taxonomizes:

They can be generally divided into three categories. The first includes the works of scientists, philosophers, and thinkers who have made of it the subject of long and serious study.... Next are the novelists, poets, and writers of imagination who have broached this question from the viewpoint of the picturesque and the strange and who, without particular concern for the validity of their assumptions, have let their thoughts fly freely. In terms of their scientific value, they are of less importance than the first group; but the abiding interest in this doctrine which they have evoked through their fictional works merits them a second ranking. Lastly, the third category is composed of those for whom the Plurality of Worlds is no more than a pretext or a decor for satire or comedy. (171-72)

Other bibliographical histories of these fictions “of the picturesque and the strange” soon followed. In 1873 the first English attempt was by James T. Presley in the columns of *Notes & Queries*; in 1902 Walter Begley published a “Bibliography of Romance from the Renaissance to the end of the Seventeenth Century”; in 1906 Pietro Toldo surveyed the “marvellous voyage” from Homer to Jules Verne in the introduction to his article on Cyrano, Swift, and Rabelais. Hubert Matthey's excellent book *Essai sur le merveilleux dans la littérature française depuis 1800* (Essay on the Marvellous in French Literature since 1800) appeared in 1915; Ralph E. Tiejé, in 1917, published *The Prose Voyage Imaginaire before 1800*; and Geoffroy Atkinson published, in 1920 and 1922 respectively, two volumes on what he called the “Extraordinary Voyage” in French literature up to 1720.¹¹

Perhaps also a direct result of this progressive awakening of a sense of history from about 1750 onward, the use of temporal *extrapolation* in such works began

to enjoy a much higher degree of reader acceptance. As the Industrial Revolution rapidly altered the social fabric of the Western world and the daily impact of technology on human lives seemed to intensify at a nearly exponential rate, fictional conjectures about the future—and especially those involving science and technology—suddenly seemed more plausible than ever before.

This, coupled with a shift in focus within such novels from the exotic uniqueness of the *novum* itself (to use Suvin's term) to its real-life *effects* on the protagonists and/or societies portrayed, resulted in a new narrative formula never before seen in the history of the genre. The first and best known example is Mary Shelley's groundbreaking novel *Frankenstein* (1818), whose original preface (written by Percy Shelley) explained:

The event on which this fiction is founded has been supposed, by Dr. Darwin and some of the physiological writers of Germany, as not of impossible occurrence. I shall not be supposed as according the remotest degree of serious faith to such an imagination; yet, in assuming it as the basis of a work of fancy, I have not considered myself as merely weaving a series of supernatural terrors. The event on which the interest of the story depends is exempt from the disadvantages of a mere tale of spectres or enchantment. It was recommended by the novelty of the situations which it develops, and however impossible as a physical fact, affords a point of view to the imagination for the delineating of human passions more comprehensive and commanding than any which the ordinary relations of existing events can yield. (11)

Critics of the time immediately reacted—both positively and negatively—to this new “realistic fantastic” configuration in the traditional *utile et dulce* genres of utopian fantasy and gothic romance. For instance, in 1818, an anonymous reviewer for *The Edinburgh Magazine and Literary Miscellany* said:

There never was a wilder story imagined, yet, like most fictions of this age, it has an air of reality attached to it, by being connected with the favourite projects and passions of the times.... It is one of those works, however, which, when we have read it, we do not well see why it should have been written ... and some of our highest and most reverential feelings receive a shock from the conception on which it turns, so as to produce a painful and bewildered state of mind while we peruse it. We are accustomed, happily, to look upon the creation of a living and intelligent being as a work that is fitted only to inspire religious emotion, and there is an impropriety, to say no worse, in placing it in any other light. (249-52)

In contrast, Sir Walter Scott saw in *Frankenstein* a new and compelling variant of the “marvellous romance”—one which charted previously unexplored territory by creating “new trains and channels of thought” in the reader:

[*Frankenstein*] is a novel, or more properly a romantic fiction, of a nature so peculiar, that we ought to describe the species before attempting any account of the individual production.

[T]he class of marvellous romances admits of several subdivisions. In the earlier productions of imagination, the poet or tale-teller does not, in his own opinion, transgress the laws of credibility when he introduces into his narration the witches, goblins, and magicians in the existence of which he himself, as well as his hearers, is a firm believer. This good faith, however, passes away, and works turning upon the marvellous are written and read merely on account of the exercise which they

afford to the imagination...

A more philosophical and refined use of the supernatural in works of fiction is proper to that class in which the laws are represented as altered, not for the purpose of pampering the imagination with wonders, but in order to show the probable effect which the supposed miracles would produce on those who witnessed them. In this case, the pleasure ordinarily derived from the marvellous incidents is secondary to that which we extract from observing how mortals like ourselves would be affected.... [T]he author's principal object ... is less to produce an effect by means of the marvels of the narrations, than to open new trains and channels of thought by placing men in supposed situations of an extraordinary and preternatural character, and then describing the mode of feeling and conduct which they are most likely to adopt. (1818, 613-614)

This notion of the pivotal importance of verisimilitude in the hermeneutic structure of such "extraordinary" fictions—e.g., realistically portraying "marvellous incidents" and then "observing how mortals like ourselves would be affected" in order, ultimately, to "open new trains and channels of thought" in the reader—would soon become not only the fundamental narrative recipe for much sf written from the nineteenth century to today, but also the exegetical touchstone for most sf criticism as well.

Edgar Allan Poe, for example, in his appended "Note" to "The Unparalleled Adventure of One Hans Pfaall" (1835), castigated Locke's infamous "Moon Hoax" and other such "trifles" as thoroughly lacking in verisimilitude, concluding:

In these various *brochures* the aim is always satirical; the theme being a description of Lunarian customs as compared with ours. In none, is there any effort at *plausibility* in the details of the voyage itself. The writers seem, in each instance, to be utterly uninformed in respect to astronomy. In "Hans Pfaall" the design is original, inasmuch as regards an attempt at *verisimilitude*, in the application of scientific principles (so far as the whimsical nature of the subject would permit), to the actual passage between the earth and the moon. (41)

Charles Baudelaire, *poète extraordinaire* and the translator of the first French edition of Poe's works in 1856, introduced Poe's collection of tales with the following description: "What gives it its essential character and distinguishes it among all others is, if I may use these strange words, its conjecturism and probabilism" (68-69). That same year, after reading Baudelaire's translations, Edmond and Jules de Goncourt offered wry homage to Poe's genius by jotting down the following observations in their *Journal*:

Something the critics have not seen, a new literary world, signs of the literature of the 20th century. The scientific marvelous, a fable of A+B; a compulsive and lucid literature. No more poetry; imagination via hammer-blows of logic: Zadig as magistrate, Cyrano de Bergerac as a student of Arago. Something monomaniac.—Things having more of a role than people; love being replaced by deductions ... the foundation of the novel displaced and transported from the heart to the head; from the drama to the solution. (108)

And Jules Verne himself, an admitted disciple of Poe's narrative techniques (but whose name he insisted on spelling as "Edgard Poë") was especially attracted

to the latter's use of realism and of scientific logic to explain the mysteries of the unknown.¹² He commented on this aspect of Poe's style in an early 1864 critical essay, saying:

Poë has created a distinct literary genre all his own....

People have sometimes compared him with two other authors: one English, Ann Radcliffe, the other German, Hoffmann. But Mrs. Radcliffe has made use of the *genre terrible* which explains everything by natural causes; Hoffman has indulged in pure fantasy in which no natural causes can be adduced. This is not the case of Poë. His characters seem really to exist; they are eminently human.... They push to the limit their capacity for analysis and deduction. They are the most formidable analysts I know and, from an insignificant fact, they reach an irrefutable truth. (26-27)

In fact, it was the contrasting levels of verisimilitude in their fiction that Jules Verne identified as the most conspicuous difference between his own novels and those of his English counterpart H.G. Wells.¹³ As Verne insisted in 1903 and 1904 during two separate interviews (the second proving to be somewhat more thoughtful and less "animated" than the first):

"We do not proceed in the same manner. It occurs to me that his stories do not repose on very scientific bases. No, there is no rapport between his work and mine. I make use of physics. He invents. I go to the moon in a cannonball discharged from a cannon. Here there is no invention. He goes to the Mars [sic] in an airship which he constructs of a metal which does away with the law of gravitation. *Ça c'est très joli*," cried Monsieur Verne in an animated way. "But show me this metal. Let him produce it." (Sherard 589)

"Some of my friends have suggested to me that his work is on somewhat similar lines to my own, but here, I think, they err. I consider him, as a purely imaginative writer, to be deserving of very high praise, but our methods are entirely different. I have always made a point in my romances of basing my so-called inventions upon a groundwork of actual fact, and of using in their construction methods and materials which are not entirely beyond the pale of contemporary engineering skill and knowledge....

The creations of Mr. Wells, on the other hand, belong unreservedly to an age and degree of scientific knowledge far removed from the present, though I will not say entirely beyond the limits of the possible. Not only does he evolve his constructions entirely from the realm of the imagination, but he also evolves the materials of which he builds them. See, for example, his story 'The First Men in the Moon.' You will remember that here he introduces an entirely new anti-gravitational substance, about whose mode of preparation or actual chemical composition we are not given the slightest clue, nor does our reference to our present scientific knowledge enable us for a moment to predict a method by which such a result might be achieved." (Jones 669-70)

As for Verne's own *voyages extraordinaires*, Robert Louis Stevenson was one among a veritable host of critics who lauded the high degree of "reassuring" detail in Verne's "fantastic tales"—a sense of realism that firmly anchored his gently extrapolative *romans scientifiques* to the realm of the "not altogether impossible" (as Shelley had earlier phrased it). In an 1876 essay for the journal

The Academy, Stevenson observed:

A new vein in story-telling discovered, I believe, by Edgar Allan Poe, has been worked with almost devilish ingenuity by the clever Frenchman whose name stands at the head of this article. His heroes are in advance of contemporary science like Von Rempelen; they are bound for the Pole like Arthur Gordon Pym; they go to the moon like Hans Pfaall, and descend the Maelstrom like the Norway fisher. But on the bare idea of such strange chances Jules Verne has engrafted a wealth of most persuasive detail. He has fenced them in with instances and calculations, not much more trustworthy perhaps than the calculation in *Mokeanna*, but mighty reassuring to unscientific readers. These tales of his are not true, but they do not seem to fall altogether under the heading of the impossible. He could easily have made stranger stories if he had liked; but it is not strangeness that he follows after with his discreet and daring pen. He likes to just outstrip the possible, and no more; to go one step beyond his generation, one step outside the habitable world; and to do this drily and solidly, as though he had originally prepared his facts for a learned Society, and only by an afterthought turned them to account in a fantastic tale. (532)

In 1895, in an introductory “Epistolary Proem” to his *The Ghost of Guy Thyrlé*, the novelist Edgar Fawcett confided to a friend that he was “only a poor pioneer, after all, in the direction of trying to write the modern wonder-tale,” and then offered the following counsel:

To make our romances acceptable with the world of modern readers, we must clothe them in rationalistic raiment. So clothed, my friend, I should name them “realistic romances”—stories where the astonishing and peculiar are blent with the possible and accountable. They may be as wonderful as you will, but they must not touch on the mere flimsiness of miracle. They can be excessively improbable; but their improbability must be based upon scientific fact, and not upon the fantastic, emotional and purely imaginative ground-work. (5)

In a series of non-fictional essays published from 1878 to 1910, the German sf author Kurd Lasswitz again and again emphasized the need for writers to give careful attention to the dynamics of verisimilitude when composing such “scientific fairy tales”:

Fiction has the privilege of looking into the future. But if that which fiction narrates is really to inspire in us a sense of trust, then fiction must take counsel with reality and conform closely to experience. (*Bilder aus der Zukunft* [1878] iii-iv)

In the transformation [of speculation] into literary form, the laws of nature and the soul may not be infringed without arousing the objection of the reader and interfering with the effect. For everything that occurs in a novel which is intended seriously as art must be capable of being related to our own experience ... in short, it must be explainable and plausible. An effect which occurred simply by magic and could not be explained scientifically would be just as unusable poetically as a sudden, psychologically unmotivated transformation of a character.... Our sense of veracity tolerates no postulates which directly and absolutely contradict previous scientific and psychological experience.... [F]iction is much freer in its use of hypotheses than is science, whose business is to provide objective knowledge. As long as he does not contradict the scientific knowledge of his time, the writer of fiction may expand the hypothesis in order to further those aims which he considers essential to his function.

(“Unser Recht auf Bewohner anderer Welten” [1910] 165-168)

The French absurdist Alfred Jarry, in a 1903 essay published in *La Plume*, dubbed this brand of fiction “scientific novels,” “hypothetical novels,” and “novels of the future.” He hailed H.G. Wells as the modern “master of this literature” and pointed out its fundamentally mathematical nature:

The social novel studies what happens *when* certain elements are in place. The scientific novel—which could also be called the hypothetical novel—imagines what would happen *if* certain elements were in place. This is why, in the same way that hypotheses come true one day, some of these novels, at the moment when they were written, are novels of the future....

In *The Time Machine* of H.G. Wells, the reading of the scientific novel—this repertoire of the currently unrealized—is precisely a voyage into the future. By his astonishing creations, he is today the master of this literature.

One can better understand Wells and his admirable aplomb in writing not about the absurd, but about the *possible* in the mathematical sense of the term, if one remembers that he is writing in the language used by Lord Kelvin. (431)

One of Jarry's countrymen, the French sf author Maurice Renard, in a 1909 essay where he attempted to define this new “scientific-marvellous novel” and to describe (like Bodin) its salutary influence on human progress, formulated the following inverse rule of “proportion” for maintaining an appropriate level of plausibility in such fictions:

[A] fictional text's propensity for generating passionate interest and a sometimes disturbing verisimilitude is in direct proportion to the small number of abnormal elements that we put into it. The fewer the falsehoods, the more the logic—something which imparts to the work its strong texture of truth. Therefore, most scientific-marvellous novels restrict themselves to falsifying no more than one natural law, and to showing us the effects of this single modification where all the other laws remain unchanged. (“On the Scientific-Marvellous Novel” 399-400)

Mark Wicks, in the “Preface” to his novel *To Mars via the Moon* (1911), took special pains to advertise to his prospective readers the supposedly “textbook” trustworthiness of his astronomical descriptions as well as the “logical deductions” and “legitimate inferences” on which his futuristic plot was based, saying:

[I]n carrying out my programme, I have endeavored to convey, by means of natural incidents and conversations between the characters portrayed, the most recent and reliable scientific information respecting the moon and Mars; together with other astronomical information: stating it in an interesting form, and in concise, clear, and understandable language.

Every endeavor has been made to ensure that this scientific information shall be thoroughly accurate, so that in this respect the book may be referred to with as much confidence as any ordinary textbook....

The reader will, of course, understand that whilst the astronomical information is, in all cases, scientific fact according to our present knowledge, the story itself—as well as the attempt to describe the physical and social conditions on Mars—is purely imaginative. It is not, however, merely random imagining. In a narrative such as this, some matters—as, for instance, the “air-ship” and the possibility of a voyage through space—must be taken for granted; but the other ideas are mainly logical

deductions from known facts and scientific data, or legitimate inferences. (x-xi)

In a chapter called "Supernatural Science" in her 1917 book *The Supernatural in Modern English Fiction*, Dorothy Scarborough observed that using science as a way to enhance fictional plausibility had become, since the late nineteenth century, "an excellent hook to hang supernatural tales upon":

The application of modern science to supernaturalism, or of the supernatural to modern science, is one of the distinctive features of recent literature. Ghostly fiction took a new and definite turn with the rapid advance in scientific knowledge and investigation in the latter part of the nineteenth century.... The sorcerer has given place to the bacteriologist and the botanist, the marvels of discovery have displaced miracles as basis for unearthly plot material, and it is from the laboratory that the ghostly stories are now evolved, rather than from the vault and charnel-room as in the past. Science not only furnishes extraordinary situations for curdling tales, but it is an excellent hook to hang supernatural tales upon, for it gives an excuse for believing anything, however incredible. Man is willing to accept the impossible, if he be but given a modern excuse for it. He will swallow the wildest improbability if the bait be labeled science or psychical research. No supernaturalism is incredible if it is expressed in technical terminology, and no miracle will be rejected if its setting be in a laboratory. (251-52)

In 1923, the early pulp sf writer George Allan England, in a self-mocking and tongue-in-cheek assessment of his own narrative strategies in what he called "science-faking," summed it up this way:

And right here let me remark that science-faking requires a great deal of research. One has to "bone" an immense mass of data, in order to give the requisite air of verisimilitude. Slipshod methods simply won't do. It is the progressive marshaling of minutiae, the cumulative assembling of (often willfully falsified) data which convinces the reader that: "Well, it's mighty strange but still there might be something to it, after all." In a pinch, one can quote learned authorities which never existed, and fabricate weighty conclusions out of whole cloth. If one cannot, it proves that one has not the requisite analytical twist to make one a success at this peculiarly mendacious form of storytelling. (ii)

And even the father of modern sf himself, H.G. Wells, in his famous 1933 preface to the Gollancz and Knopf collections of his "scientific romances," spoke at length about the need for "scientific patter" and other techniques for enhancing verisimilitude to make such "fantastic stories" believable to the average reader. Much like Shelley and Walter Scott before him, Wells emphasized the genre's potential for "looking at human feelings and human ways, from [a] new angle":

These tales have been compared with the work of Jules Verne and there was a disposition on the part of literary journalists at one time to call me the English Jules Verne. As a matter of fact there is no literary resemblance whatever between the anticipatory inventions of the great Frenchman and these fantasies. His work dealt almost always with actual possibilities of invention and discovery, and he made some remarkable forecasts. The interest he invoked was a practical one; he wrote and believed and told that this or that thing could be done, which was not at that time done.... Many of his inventions have "come true." But these stories of mine

collected here do not pretend to deal with possible things; they are exercises of the imagination in a quite different field....

In all this type of story the living interest lies in their non-fantastic elements and not in the invention itself. They are appeals for human sympathy quite as much as any "sympathetic" novel, and the fantastic element, the strange property or the strange world is used only to throw up and intensify our natural reactions of wonder, fear or perplexity. This invention is nothing in itself and when this kind of thing is attempted by clumsy writers who do not understand this elementary principle, nothing could be conceived more silly or extravagant. Anyone can invent human beings inside out or worlds like dumb-bells or a gravitation that repels. The thing that makes such imaginations interesting is their translation into commonplace terms and a rigid exclusion of other marvels in the story. Then it becomes human. "How would you feel and what might not happen to you," is the typical question....

For the writer of fantastic stories to help the reader to play the game properly, he must help him in every possible unobtrusive way to *domesticate* the impossible hypothesis. He must trick him into an unwary concession to some plausible assumption and get on with the story while the illusion holds. And that is where there was a certain slight novelty in my stories when they first appeared. Hitherto, except in exploration fantasies, the fantastic element was brought in by magic. Frankenstein, even, used some jiggery-pokery magic to animate his artificial monster. There was trouble about the thing's soul. But by the end of the last century it had become difficult to squeeze even a momentary belief out of magic any longer. It occurred to me that instead of the usual interview with the devil or a magician, an ingenious use of scientific patter might with advantage be substituted....

As soon as the magic trick has been done the whole business of the fantasy writer is to keep everything else human and real. Touches of prosaic detail are imperative and a rigorous adherence to the hypothesis. Any *extra* fantasy outside the cardinal assumption immediately gives a touch of irresponsible silliness to the invention. 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. (vii-viii)

In addition to the question of fictional verisimilitude, several early sf critics and authors also remarked on the intrinsic "poeticalness" of science itself, which they saw as pervading such works. For these commentators, the chief forte of this particular brand of literature—whether defined as "Science-Fiction" (Wilson), "scientific novels" (Verne), "scientific fiction" (Barnes),¹⁴ "scientific-marvellous" (Goncourts, Renard, Matthey), "hypothesis novels" (Jarry, Renard), "wonder-tales/realistic romances" (Fawcett), "socioscientific novels/fantastic novels" (Zamiatin), "supernatural science" (Scarborough) or even as "scientific romances" (Wells)¹⁵—is its ability to transport readers to a higher vision of the natural universe, to create a "sense of wonder," and to elevate the human soul.

Such is the critical stance, for example, of William Wilson, who spoke of this transcendental effect of sf as early as 1851 in the chapters "The Poetry of Science" and "Science-Fiction" (the first time, it is generally acknowledged, that this latter term was ever employed) in his book *A Little Earnest Book upon a Great Old Subject*:¹⁶

The Poetry of Science is beginning to attract a considerable increase of attention, and

it is most just that it should be so; for the Natural and Mechanical Sciences are alike loaded with rich and wonderful Poetry. Poetry which only requires the clear eyes of the Poet's calm and lofty soul to be perceived and appreciated, and then to be translated palpably by him to the general mind, through the instrumentality of his divine art.

All known Sciences contain within themselves Worlds of exquisite Poetry, and the more the general mind becomes familiarised with the ever-varying interest and fascinations connected with their Study, the more rapid will become the diffusion and the rise of Science. Science is a holy devotion, and the pursuits and the results attained are alike glorious. (131-32)

Fiction has lately been chosen as a means of familiarizing science in one single case only, but with great success. It is by the celebrated dramatic Poet, R.H. Horne, and is entitled "The Poor Artist; or, Seven Eye-sights and One Object." We hope it will not be long before we may have other works of Science-Fiction, as we believe such books likely to fulfil a good purpose, and create interest, where, unhappily, science alone might fail....

[Thomas] Campbell says that "Fiction in Poetry is not the reverse of truth, but her soft and enchanting resemblance." Now this applies especially to Science-Fiction, in which the revealed truths of Science may be given, interwoven with a pleasing story which may itself be poetical and *true*—thus circulating knowledge of the Poetry of Science, clothed in a garb of the Poetry of life. The influences of Science interpenetrate the whole Earth, breathing eloquently through the framework of Creation. (137-40)

Julian Hawthorne, in his quasi-religious introduction to William Richard Bradshaw's "idealist" sf novel *The Goddess of Atvatabar* (1892), theorizes in similar fashion:

Literature may be roughly classified under two heads—the creative and the critical. The former is characteristic of the imaginative temperament, while the latter is analytical in its nature, and does not rise above the level of the actual. Rightly pursued, these two ways of searching out truth should supplement each other. The poet finds in God the source matter; the man of science traces matter up to God. Science is poetry inverted: the latter sees in the former confirmation of its airiest flight; it is synthetic and creative, whereas science dissects and analyzes. Obviously, the most spiritual conceptions should always maintain a basis in the world of fact, and the greatest works of literary art, while taking their stand upon the solid earth, have not feared to lift their heads to heaven. The highest art is the union of both methods.... Among the subjects dear to the idealist's heart, perhaps none finds greater favor than that which involves the conception of a new social and political order, and our author has elaborated this subject on fresh lines of thought, making his material world enclose a realm of spiritual tenderness, even as the body is the continent and sensible manifestation of the soul. (9-11)

And finally, extolling the French sf author J.-H. Rosny Aîné as the "poet of Pluralism," the critic J. Morel in 1926 praised Rosny's innovative use of the "scientific-marvellous" to portray the genuinely alien—e.g., extraterrestrial life-forms, prehistoric cultures, and end-of-the-world cataclysms. Morel credits Rosny with thus having breathed a new sense of "lyricism and epic" into this fantastic genre:

Who was it that voiced the fear that science suffocated the divine instinct for poetry in the modern heart? These pages from [Rosny's] extraordinary novels of the imagination blend an extreme scientific density with the uplifting breath of lyricism and epic....

Certainly other writers have looked to science as a breeding-ground for their fantasies. But whereas Villiers de l'Isle-Adam slips toward occultism, Poe and Renard use it to polish their plots, and Wells is obsessed with sociology and politics, the novelist of *La Mort de la Terre* and *Les Xipéhuz* treats the scientific-marvellous for its own sake, as an independent genre in and of itself....

Other authors—a Jules Verne or a Wells—suppose that a technical problem is resolved, that an invention is made, that a hypothesis is verified. Men invent a submarine, build a cannon that fires a bullet to the moon, discover a substance that is opaque to gravity, or find a food that causes unlimited growth. So what are the consequences? The fictional work is only a logical attempt to construct the future by extending a straight line from the present. The novelist is a bit ahead of his time, but remains within the same realm.

J.-H. Rosny Aîné, in contrast, imagines entirely new Beings and new Forms outside of all human experience, and he does so effortlessly. (91-93)

Of course, not all early critics were so approving of this newly-developing “high art” of combining science with fiction. And, as this unique form of romance gradually coalesced into an identifiable literary genre with its own distinct history and traditions (albeit not yet universally acknowledged, self-aware, or even consistently labeled) during the late nineteenth and early twentieth century, the number of overtly pejorative reviews from so-called “mainstream” critics increased proportionately.

Some of them spurned these works as mere “low-brow” entertainment, lacking in any redeeming social value. They judged that, despite the growing popularity of such fictions, they did not properly belong to the great institution of “Literature” at all:

[I]f the *Voyages Extraordinaires* are selling well, alphabet books and church prayer books also are selling in high numbers.... All of these are of no importance whatsoever in the contemporary literary scene. (Zola, 1878, 356-57)

A notable contribution to the crudities and figments afloat in current conversation may be traced to the writings of Jules Verne. Every young woman in society has read them, every vivacious young man can quote them and impart to his discourse a scientific glimmer which resembles knowledge as the phosphorescence of decayed bones resembles a calcium light. The astonishing vogue of these productions constitutes their chief claim to criticism, but they may be said to challenge it by a special eminence in worthlessness. (Hazeltine, 1883, 343-44)

Others, more numerous and often more vociferous, strongly objected to what they perceived as the lack of emphasis given to the “human” in the make-up of such works:

Verne rules supreme in the realm that he has conquered ... [but] he is not, in the true sense, a novelist because love, the base of all novels, is wholly absent from most of his works. (Raymond, 1875, 329)

[They] have moved the center of gravity beyond human nature because human nature is only secondarily or not at all affected by technology or science. Therefore the

representation of human beings is mostly quite feeble.... One accepts the inventions as given and, at best, simply "thinks away" the familiar problems. Imagination is therefore active in a negative sense. One neither invents nor amplifies life; one reduces it instead. Hence the flimsiness of these tales. (Berg, 1899, 160)

The weakness of the book is that of nearly all Mr. H.G. Wells's books, and it arises out of his sceptical attitude. As a human story, it is lifeless. The men who conduct the expedition are as distant, as monstrous, and as cold as the wan populace of the moon. A curious cold light of indifference, a curious cold air of contentment and unconcern, lies upon the whole narrative.... This is a real misfortune, or punishment of the sceptical attitude, for you cannot write a romance or a story of adventure without human interest. (Chesterton, "The First Men in the Moon," 1902, 135)

The almost life-long *métier* of Jules Verne was the pseudo-scientific novel, but he was the most superficial of all who have practised the art. Not that he got up his science less carefully than others; but it was always a physical and mechanical set of facts with which he dealt that did not expound or illustrate the really interesting problems of life with which some branches of science are so closely associated in every thinking person's mind.... That is to say, Jules Verne left out of his scheme the human, the moral, the political, the religious, the social questions which are of real importance to thoughtful men and women. (Anonymous, "Science in Romance," 1905, 414)

[Mr. Wells] is not quite clear enough of the narrower scientific outlook to see that there are some things which actually ought not to be scientific. He is still slightly affected with the great scientific fallacy; I mean the habit of beginning not with the human soul, which is the first thing a man learns about, but with some such thing as protoplasm, which is about the last. The one defect in his splendid mental equipment is that he does not sufficiently allow for the stuff or material of men. (Chesterton, "Mr. H.G. Wells and the Giants," 1905, 78)

And others rejected these hybrid fictions on what might be termed "philo-sophical" grounds, protesting that the realms of science and literature ought to be kept separate and inviolate. These critics, as a rule, saw no future for this "quasi-scientific" type of novel, characterizing it as "distorted," "crude," and even as an "impertinence":

[T]he processes of the artist and the teacher, which didactic fiction seeks to confound, are essentially incapable of fusion.... [S]cientific romance is an impertinence. (Hazeltine, 1883, 342)

Following in the wake of the sciences for half a century is a new species of literary work, which may be called the quasi-scientific novel. From M. Verne's prophetic submarine boat to Mr. Waterloo's prehistoric cavemen, one could classify a score of romances which try to put into imaginative form the latest results in science and mechanics. Like all literature, too, the new novel is not content with presenting living embodiments of truth, but is fain to make guesses at the future. It is as yet experimental, and is quite too young to have produced an enduring masterpiece. The whole group can claim nothing that will live very far into the next century. It is hopelessly doomed.... (Anonymous, "The War of the Worlds," 1898, 282)

When one thinks of the serious incongruities, the mixture of fact and fancies which are not much better than distorted facts, and therefore of a low order of imagination, we cannot think that the scientific romance is a thing to be cultivated. On the whole it is better when we want science to read science; and when we want fiction not to

read a composite thing in which the science diverts us from the fiction, and the fiction is not more imaginary than the pseudo-science. The scientific novel is therefore crude and we do not think it has much of a future. We hope not. (Anonymous, "Science in Romance," 1905, 415)

"[W]e do not think that it has much of a future." "The whole group can claim nothing that will live very far into the next century." "It is hopelessly doomed." It is ironic that, far from being the moribund literary genre these critics were convinced it would become, science fiction in the decades to follow would flourish as never before. Its aging European roots would find fertile soil in the United States magazine industry of the 1920s, 30s, and 40s, where editors like Hugo Gernsback and John W. Campbell, Jr. would cultivate it, infuse it with new life, and help it to grow in new directions. And science fiction would ultimately flower into one of the most significant and influential literary genres of the twentieth century.

As a conclusion to this opening essay in our special four-part survey on the evolution of science fiction criticism, let me clarify once again what I believe to be the usefulness of this brief foray into what might be called its pre-history. The commentaries of these (often forgotten) early critics are of special value principally because they first expressed many—if not most—of those concerns that would later become central to the sf criticism of the twentieth century: the impact of science and technology on human values, the logistics of space travel, the shifting boundaries between the real and the imagined, the portrayal of the alien "other," and the possible futures of our world. Further, they consistently raised key questions about the defining features of the genre itself as it continued to evolve: its preferred themes, its social purpose, its scientific and moral didacticism, its perceived level of verisimilitude, and its proper place in the Western literary canon. Finally, as the new millennium dawns upon us, it seems somehow appropriate that we look to our distant past to rediscover what these early commentators had to say about the many science fictional works of their own times: doing so serves to deepen our understanding of the historical continuity of the ongoing sf debate and to make us aware of both how much and how little has changed over the centuries.

NOTES

1. See Bozzetto. All translations from the French are my own unless otherwise noted; the translation of Leo Berg's German was done by Dr. Edward E. Mayer. For the sake of simplicity and brevity, I have chosen to begin this study with Johannes Kepler's *Somnium* (1634). In so doing, it was not my intent to claim either that Kepler constitutes the indisputable "origin" of science fiction or that his *Notes* stand as the (sole) earliest example of sf criticism. If I have neglected other early critical commentaries that seem especially pertinent—most notably those relating to the utopian tradition dating from Thomas More onward—I have done so secure in the knowledge that these materials have already been discussed elsewhere (e.g., see Widdicombe [1992] and the bibliographies of Lyman Tower Sargent [1979, 1988], among others).

2. See Philmus (1970), 37-55, and Green (1958), 22-56.

3. Evans (1988), 131-32.

4. For one of the best—and earliest—studies of this topic, see Nicolson's "A World

in the Moon" (1936).

5. Cowen (1976), vi.

6. Curiously, no mention of its "ex cathedra" status was made by the first English translator of Mercier's novel in 1795 (who did see fit, however, to retitle it *Memoirs of the Year 2500*):

The title of this work in the original is The Year Two Thousand Four Hundred and Forty; but as there appears no reason for fixing it to any particular year, we have for the sake of a round number, called it The Year Two Thousand Five Hundred. It may be proper to add that this is the only alteration made by the translator. Though the scene of this narrative lies in Paris, yet the reflections in general may be applied, by changing the names of places and persons, to almost all the capital cities of Europe. Who the author of this work is, we will not pretend to determine; perhaps the reader will be satisfied with finding that he is a man of sense, of taste, and learning, of a lively imagination, a strong spirit of liberty, and, what is worth them all, a warm benevolence of heart. (xxix)

For reactions by other eighteenth-century European literary critics to Mercier's book, see Trousson (1971), 67-68.

7. One notable exception was in Spain, where Mercier's book was officially condemned as heretical by the Inquisition in 1778 and supposedly burned by the king himself. See Wilkie (1984), 19.

8. It is interesting to compare Mercier's retrospective and self-congratulatory "intent" in writing such a revolutionary tale with that of Bellamy himself, who explained in 1889:

In undertaking to write *Looking Backward* I had, at the outset, no idea of attempting a serious contribution to the movement of social reform. The idea was of a mere literary fantasy, a fairy tale of social felicity.... It was not till I began to work out the details of the scheme by way of explaining how the people of the thirtieth century disposed of the awkward problems of labor and avoided the evils of a classified society that I perceived the full potency of the instrument I was using and recognized in the modern military system not merely a rhetorical analogy for a national industrial service, but its prototype.... Something in this way it was that, no thanks to myself, I stumbled over the destined corner-stone of the new social order. It scarcely needs to be said that having once apprehended it for what it was, it became a matter of pressing importance to me to show it in the same light to other people. This led to a complete recasting, both in form and purpose, of the book I was engaged upon. Instead of a mere fairy tale of social perfection, it became the vehicle of a definite scheme of industrial reorganization.... A great deal of merely fanciful matter concerning the manners, customs, social and political institutions, mechanical contrivances, and so forth of the people of the thirtieth century, which had been intended for the book, was cut out for fear of diverting the attention of readers from the main theme. Instead of the year AD 3000, that of AD 2000 was fixed upon as the date of the story. Ten centuries had at first seemed to me none too much to allow for the evolution of anything like an idealized society, but with my new belief as to the part which the National organization of industry is to play in bringing about the good time coming, it appeared to me reasonable to suppose that by the year 2000 the order of things which we look forward to will already have become an exceedingly old story. This conviction as to the shortness of the time in which the hope of Nationalization is to be realized by the birth of a new, and the first true, nation, I wish to say, is one which every day's reflection and observation, since the publication of *Looking Backward*, has tended to confirm. (194-95)

9. On Bodin's significance, see Alkon (1987), 245-289.

10. Although Flammarion's books on astronomy were best-sellers throughout the latter half of the nineteenth century and his sf novels (*La Fin du monde*, *Lumen*, etc.) were also quite popular, his sf criticism was all but ignored outside his native land. Witness, for example, the following anonymous review of Percy Greg's *Across the Zodiac*, published in a London journal in 1880; the author is totally unaware of the existence of Flammarion's *Les Mondes imaginaires et les mondes réels*:

Of late years there has been a notable revival of the fashion of producing imaginary travels and

adventures in which the field of the writer's fancy or satire is enlarged by calling up visions of regions or worlds outside our real experience as to inhabitants, situation in space, or both. The late Lord Lytton amused himself for a while with concealing the authorship of *The Coming Race*, a very successful work of the kind. Then came Mr. S. Butler's *Erewhon*—also issued anonymously at first—which, if not equal to *The Coming Race* in workmanship and semi-poetical imagination, must be allowed, we think, to excel it in humor and originality of conception. M. Jules Verne has shot up two Americans and one Frenchman from the earth to the moon.... The story is told with a most ingenious combination of American vastness, French airiness, and minute scientific plausibility. But an attempt to trace all the literature from this class, even in the last ten or twenty years, would be tiresome.... A very curious monograph might be produced by any qualified worker who would follow up on the parentage of these books through Voltaire's *Micromégas*, Gulliver, Rabelais, More's *Utopia*, and back to Lucian, if not further; it might be difficult to stop short of *The Odyssey*. (311-14)

11. See Gove (1941), 64-92.

12. For a sampling of other early criticism on Poe, see Franklin (1966), 93-94.

13. Certain British critics of the time, it must be acknowledged, reacted quite bitterly to Wells being called the "English Jules Verne" and strongly disagreed with Wells's novels being characterized as somehow less "scientific" than those of Verne. Consider, for example, the following stinging retort by E. Arnold Bennett in 1902:

[H.G. Wells] has hitherto somewhat suffered, in the public estimate, under the disadvantage of being wrongly labelled. It is a fact that his work is at least as diverse as that of any living prose-writer. In the seven years since he ascended into the literary firmament he has given forth "scientific romances" such as *The Time Machine*, *The Invisible Man*, *The Island of Dr. Moreau*, *The War of the Worlds*, *When the Sleeper Awakes* [sic], and *The First Men in the Moon*; satiric fantasies, such as *The Wonderful Visit* and *The Sea Lady*; a naturalistic romance, in *The Wheels of Chance*; a realistic novel of modern life, in *Love and Mr. Lewisham*; a couple of volumes of sketches and essays; about half a hundred "strange stories" in all veins, from that of Poe to that of Guy de Maupassant; and finally the aforesaid *Anticipations*, which are as a lamp to the feet of the twentieth century. Nevertheless, and despite all this, if you mention the name of H.G. Wells to the man in the street, he is fairly sure to exclaim, "Oh yes, the disciple of Jules Verne." Even critics who think to render the acme of praise call him "the English Jules Verne." And critics who wish to patronize refer to his "pseudo-scientific romances."

Now, I may usefully begin to define Mr. Wells by showing what he is not. He is not the English Jules Verne; he does not belong to the vast Jules Verne school; and his scientific romances are not pseudo-scientific.... Jules Verne troubles but little about science. He talks with naïve and large satisfaction about "the immutable laws of mechanics," but the immutable laws of mechanics are only dragged into the story here and there to give it fictitious sanction.... The great difference between Jules Verne and Mr. Wells is that the latter was trained in scientific methods of thought, while the former was not. Before Jules Verne took to romances, he wrote operatic libretti. Before Mr. Wells took to romance, he was a pupil of Huxley's at the Royal College of Science; he graduated at London University with first-class honours in science; and his first literary production, if I mistake not, was a text-book of biology. Those who prefix "pseudo" to the scientific part of Mr. Wells's novels are not men of science. (260-64)

14. Despite its seemingly well-known status as an exemplary specimen of pre-twentieth-century sf criticism (*pace* Clareson, Franklin, et al.), William H.L. Barnes's "In Memoriam" preface to Rhodes' *Caxton's Book* (1876) is, in truth, quite inconsequential. It says nothing about sf as a genre, and its passing mention of "scientific fiction" is only in reference to Jules Verne, whose own term "scientific novels" was already in common use by critics throughout this period. Barnes's preface to *Caxton's Book* is therefore important only as a memorable example of critical hearsay—e.g., to quote Gary Westfahl, "because it has been passed from scholar to scholar over the years as a quick and easy way to suggest that there existed some critical awareness of science fiction before Gernsback" (e-mail to me, March 16, 1999). Here's the passage in question, quoted in its entirety:

In 1844, he entered Harvard Law School, where he remained for two years. Here, as at home among his young friends, he was a master-spirit and leader. He was an especial favorite of his instructors; was noted for his studious and exemplary habits, while his genial and courteous manners won the lasting friendship of his classmates and companions. His fondness for weaving the problems of science with fiction, which became afterwards so marked a characteristic of his literary efforts, attracted the especial attention of his professors; and had Mr. Rhodes devoted himself to this then novel department of letters, he would have become, no doubt, greatly distinguished as a writer; and the great master of scientific fiction, Jules Verne, would have found the field of his efforts already sown and reaped by the young Southern student. (6-7)

15. For very useful discussions of the many “labels” of science fiction, see Moskowitz (1963), 313-33, and James (1994), 7-11.

16. On Wilson’s particular brand of “sense of wonder,” see Stableford (1976), 7-8.

ABSTRACT

From Johannes Kepler’s 1634 notes on his *Somnium* to essays by and on H.G. Wells in the early twentieth century, there have been many critical explorations of the literature we now call science fiction. The commentaries of these (often forgotten) early critics are of value principally because they first expressed many—if not most—of those concerns that would later become central to the sf criticism of the twentieth century: the impact of science and technology on human values, the logistics of space travel, the shifting boundaries between the real and the imagined, the portrayal of the alien “other,” and the possible futures of our world. Further, they consistently raised key questions about the defining features of the genre itself as it continued to evolve: its preferred themes, its social purpose, its scientific and moral didacticism, its perceived level of verisimilitude, and its place in the Western literary canon. Finally, as the new millennium dawns, it seems appropriate that we look to our distant past to rediscover what these early commentators had to say about the many science fictional works of their times: doing so serves to deepen our understanding of the historical continuity of the ongoing sf debate and to make us aware of both how much and how little has changed over the centuries. (ABE)