

Smithsonian Lecture - Jan. 24, 1995

“Jules Verne, Science Fiction, and Academe”

First, I would like to thank the National Air & Space Museum for the opportunity to speak here this evening and to use the Smithsonian’s “bully pulpit” to talk about science fiction. At the outset, however, I feel obliged to make it quite clear that I am *not* an expert on contemporary science fiction. My area of specialization is Jules Verne and pre-20th century sf. But I am the *representative*—or the *emissary*, if you wish—of a great many science-fiction scholars and college professors from all around the country who teach sf. And as the managing editor of a scholarly journal called *Science Fiction Studies*, I recently sent out a survey to our more than 1000 readers in which I asked for information about who among them is teaching sf, how they are doing it, and which sf texts they are reading in the classroom. Their responses will comprise a good part of what I will say on the topic this evening.

Second, you will notice that I used the term “sf.” Among both scholars and writers of science fiction, the cutesy expression “sci-fi” is almost never used. In the words of veteran sf writer Jack Williamson: “sci-fi”? ... it trivializes the genre.”¹ Indeed, the term “sci-fi” tends to convey the idea that all science fiction is high-tech Cowboy-and-Indian space-opera, featuring Flash-Gordon ray guns, faster-than-light spaceships, and BEMs (i.e., trade talk for “bug-eyed monsters”). This may have perhaps been true for some of the early “pulp” sf of the 1920s and 30s, but it certainly **not** true today. Science fiction during the past 60-odd years has progressively matured into what could arguably be called one of the most serious and intellectual forms of literatures ever written—fictional narratives which go to the very core of the human condition: novels, for example, like Ursula Le Guin’s *The Left Hand of Darkness* which examines human and alien sexuality, *Neuromancer* by William Gibson which portrays a near-future cyberspace society where reality is virtual and machines are sometimes more human than people, Margaret Atwood’s *The Handmaid’s Tale*, Joanna Russ’ *The Female Man*, and Octavia Butler’s trilogy *Xenogenesis* which together explore the complex questions of gendered identity, social engineering, and the presuppositions of human morality. As an indication of how sf has matured, Le Guin herself has written in the Introduction to the *Norton Book of Science Fiction*:

Without in the least dismissing or belittling earlier writers and work, I think that it is fair to say that science fiction changed around 1960, and that the change tended towards an increase in the number of writers and readers, the breadth of subject, the depth of treatment, the sophistication of language and technique, and the political and literary consciousness of the writing. ... Authors of the 60s...abandoned the market-bound limited-audience pulp mentality, and used the Matter of Science Fiction not only as a set of dazzling intellectual ploys and gimmicks, but as source material for a serious and responsible literature.²

It is the American film and television industry that has popularized the term “sci-fi” (a label coined during the 1950s, as a spin-off from “hi-fi”). And, it is primarily because of this industry’s fundamental inability, at least until recently, to portray on the screen anything but the most superficial and sensationalistic (i.e., visual) aspects of this literature, that the general public today continues to misunderstand its true nature. Let us be clear about this: on the movie screen and on the TV, there is a lot more “sci-fi” than sf—although the American public itself has, during the past 5-10 years, matured and Hollywood has begun, slowly, to realize this fact. I am sometimes asked to give a thumb-nail definition of the difference between “sci-fi” and sf, and I usually reply by saying, for example, that *Star Wars* is sci-fi whereas *Star Trek* is sf, *The Blob* is sci-fi whereas *2001* is sf, *Invasion of the Body-Snatchers*, *I Married a Monster from Outer Space*, *The Stepford Wives*, *Barbarella*, and *Honey, I Shrunk the Kids* are sci-fi whereas *Close Encounters of the Third Kind*, *The China Syndrome*, *The Andromeda Strain*, *Bladerunner*, and *Flowers for Algernon* (*Charly*, in the cinema) are sf, to name but a few examples from the film industry.

But, as Dennis Miller would say: “I don’t want to go off on a rant here ... “ When I was invited to speak at the Smithsonian, I was told that my talk should address the value of sf literature and why it should be a more important part of the literary canon of our public schools. “Great,” I thought, “Nice concise topic. I can talk about that. No problem.” But a few weeks later, when I received the Winter Program of Events from the Air & Space Museum, I noticed that my topic was now widely advertised as: “presenting the case for including science fiction in the curriculum *and* on the family bookshelf... *and* showing how scientists have been influenced by Jules Verne’s novels *and* how science fiction can be successfully taught in the classroom.” Whew! In any event, over the past couple of weeks I have tried to find a way to touch upon all of these issues in my lecture and yet still maintain some semblance of focus. And I believe that I’ve found a way. There is a very important common denominator among these various questions—one that is not only central to Jules Verne and to science fiction as a genre, but also to the goals of the public school curriculum. It is called *pedagogy*—teaching and learning, stretching the limits of knowledge and understanding, flexing the muscle of human imagination, and doing so in a way that is entertaining, stimulating, and (dare I use the word?) *fun*.

The Latin poet Horace in his *Ars Poetica* defined the best sort of literature as that which is both “*utile et dulce*”—in other words, a literature that is simultaneously useful/pedagogical/practical and also pleasant/delightful/entertaining.³ To my mind, this precept of *utile et dulce* constitutes the true core of what science fiction is all about, both historically and as a genre. It is a form of literature that is pedagogical *par excellence*, sometimes overtly and explicitly (as in the case of Jules Verne), sometimes implicitly and/or more semiotically (as in the case of much modern sf).

Let us return, for instance, to those glorious days of yesteryear, long before the American publisher Hugo Gernsback in 1926 gave to this brand of writing the fascinatingly oxymoronic name of “scientifiction,” later shortened to “science fiction.” Let us go back to the works of Jules Verne himself—who is often dubbed “The Father of Science Fiction”—and let us examine, for a moment, the basic nature of what he called his *romans scientifiques*.

Most of us who have read a Jules Verne novel like *20,000 Leagues Under the Sea*, *Journey to the Center of the Earth*, *From the Earth to the Moon*, or *Mysterious Island*—if we read it in the original French or happen to have had in hand a good English translation of it (since most of the translations of Verne’s works chopped out all the science, among a great many other alterations)—most of us are well aware of the sometimes persistently pedagogical character of these narratives. The fictional plot in Verne’s books is continually

interrupted by long paragraphs and even entire pages of historical or scientific information which are intended to provide a documentational context to the story. Do you remember, for example, the great lists of various species of fish (each identified by Conseil with their Latin name-tag); the detailed treatises on the geological strata of the Earth's crust explained by Professor Lidenbrock; the page after page of astronomy lessons about the phases of the Moon and the escape velocity necessary to leave Earth's gravitational pull, all rigorously calculated by Impey Barbicane; the step-by-step instructions of how to fabricate nitro-glycerine or how to measure one's longitude and latitude from the noonday sun by the castaway Cyrus Smith, etc.? But most of us probably never realized that this (sometimes very heavy) scientific didacticism in Verne's novels was originally viewed as a desirable and even essential part of his narrative recipe. In fact (and this is rather ironic, given the wholly non-scientific character of most of his translations), Jules Verne probably would never even have been published in the first place if his adventure stories had not been so heavily pedagogical in this manner!

Pierre-Jules Hetzel, architect and publisher of Verne's collection of novels called the *Voyages Extraordinaires* (Extraordinary Journeys), once described the explicit goal of this series in the following terms:

M. Jules Verne has succeeded in creating a new genre. What is promised so often and what is delivered so rarely—instruction that is entertaining, and entertainment that instructs—M. Verne gives both, unsparingly, in each one of his exciting narratives. ...

Young or old, rich or poor, learned or uneducated, all will find both pleasure and profit from these excellent books... They are sure to become friends to the entire family and will occupy a front shelf in their home's library.

New works of M. Jules Verne will be added to this series, which we shall always keep up-to-date. All together, they will fulfill the intent of the author when he chose as their subtitle "Voyages in Known and Unknown Worlds." The goal of the series is, in fact, to outline all the geographical, 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.⁴

We may smile at the obviously hyperbolic claims Hetzel is making for Verne's novels, but his repeated insistence that Verne's work will be both instructional and entertaining—*utile et dulce*—is important for understanding the role that he visualized this sort of literature would play in the society of his time.

As explained in more detail in my book on Jules Verne, the predominantly Catholic schools in France during the mid-19th century totally excluded the teaching of science from their curricula—for obvious reasons: it tended to promote questioning of religious dogma. Hetzel—a fervent positivist and anticlerical activist—recognized this fundamental weakness in the French educational system and, as an established Parisian publisher, decided to do something about it. He began to publish a bi-monthly family journal called the *Magasin d'Éducation et de Récréation* which contained a wide variety of educational family readings: everything from practical household hints, to short lessons on history and science, to descriptions of recent inventions and discoveries, to serialized novels that would continue on for issue after issue. As Hetzel stated in his publisher's preface to the *Magasin*:

We are attempting to create a journal for the entire family that is educational in the true sense of the word; one that is both serious and entertaining... Education and recreation—these two terms, in our opinion, should complement one another. ... Our ambition is to supplement the necessarily arduous lessons of the classroom with a lesson that is both more personal and more trenchant, to round out public education with family readings...⁵

And when an unknown writer and would-be dramatist named Jules Verne submitted to Hetzel the rough-draft manuscript of his first novel called *Five Weeks in a Balloon* in 1862, Hetzel immediately saw that such a narrative—brimming with adventure but also with African geography and aeronautic theory—was exactly what he was looking for to entertain and to scientifically educate his readers. He accepted Verne's novel for immediate publication and offered Verne a contract for two more novels of this sort every year ... and the rest is history.

I won't bore you with a detailed description of exactly *how* Verne came to be the first novelist to succeed in blending science with fiction, but suffice it say that the results were spectacularly successful—both in terms of worldwide sales (Verne remains today one of the most translated authors in history—3 times greater than Shakespeare) and in terms of the very evolution of literature itself.

That is not to say that Verne was accepted by the literary establishment of his time, he was not. Reminiscent of C.P. Snow's "Two Cultures" debate which occurred over a half-century later, the guardians of literary taste in fin-de-siècle France refused to accept the radical notion that a literary bridge could be built between the world of "letters" and the world of science. One prominent educator of the time condemned Verne in the following words:

Jules Verne? ...a teller of fairy-tales with pseudo-scientific pretensions! An entertainer of adolescents! ... His works are a nothing but a fakery, without any psychology and without any style... In terms of literature, they don't exist!⁶

Another critic, obviously a partisan of the widespread belief at the time that novels should portray the vicissitudes of human love, remarked:

Verne is not, in proper terms, what one would call a novelist at all, because love--the foundation of all novels--is obviously absent from most of his works. Women are almost always relegated to the background...and his heroes just don't seem to have time to waste on the sweet dalliances of Eros.⁷

And even the famous writer Emile Zola belittled the impact and importance of Verne's works, saying:

[A]n aimable vulgarizer, M. Verne has obtained an enormous success with his fairy-tale books for children...

If his *Voyages Extraordinaires* have sold well, so have dictionaries and parish prayer books... All these are of no importance whatsoever in our literature of today.⁸

Verne's lack of "official" literary status is also reflected in the strange irony of the Académie Française's "crowning" of the *Voyages Extraordinaires* in 1872—an award which Verne's publisher Hetzel thereafter unflinchingly mentioned in the frontispieces of each of Verne's novels—whereas their author, Jules Verne himself, was consistently snubbed and never offered membership in this prestigious assembly. Even the most noted literary historians of the time such as Brunetière, Emile Jaquet, Jules Lemaître, and René Doumic never once mentioned Jules Verne or his *romans scientifiques* in their respective reference books on French literature—a silence more damning than the worst reviews, and more painful than the Académie's refusal to recognize him personally.

But what *were* the underlying social reasons for Verne's lack of "official" recognition? One factor seems to have been the rigid and hierarchically-defined notion of *littérature* itself: a deeply-rooted social concept in France—consecrated not only by time and ideology, but also by the French educational system—a concept founded on a deep nationalistic pride in the "great works and great men" of the centuries-old French literary tradition. In France, the literary canonization of certain authors and texts was (and continues to be) the result of a three-fold social process of initial selection, curricular institutionalization, and publishing practices. First, literary critics are given the responsibility of identifying those works of "merit" according to the litmus-test of *Le Beau* and *Le Bon Goût*. As one critic put it: "it is Good Taste that decides...according to rules that are immutable, identical, and equally sovereign in all the arts."⁹ Then, professional educators and academics ratify such choices by allowing only those properly-sanctioned "literary" texts into the French classroom (for purposes of linguistic modelling and cultural training). Finally, an important and often-overlooked accomplice in this canonization process, book publishers provide extended longevity to those selected texts, providing various editions of the same titles to successive generations of teachers and students. This canonization loop, operating as it does between these mutually-dependent entities, is a closed one and highly resistant to change. And, since Verne's particular genre belonged to no identifiable tradition within the French literary heritage, his *Voyages Extraordinaires* could not pass beyond the first stage of this canonization process. Those same hierarchical standards long used by literary critics to discern "high" art from "low," and "major" works from "minor" ones, were totally inappropriate for judging such a new and unique literary form. Thus, Verne's "scientific novels" were promptly classified it as "secondary" literature or, even worse, "paraliterary." And once rejected from the system, Verne's works were subsequently not taught in the schools, unabridged reprints of his works were not published on a regular basis, Verne was not cited in literary reference books, and the entirety of the *Voyages Extraordinaires* continued to remain outside the "official" French literary canon.

But there are other reasons why Verne's works could not be recognized as truly literary during the latter half of the 19th century. One of these involves certain changes taking place within the French literary establishment itself—i.e., the progressive emergence of a new ideological mandate for writers of "true" literature. Writers were now expected to write *in opposition* to their (presumably bourgeois) reading public. Reacting to the growing presence of what Sainte-Beuve had earlier in the century castigated as "*industrial literature*"¹⁰—i.e., mass-produced and inexpensive books churned out in ever-increasing quantities—and reacting as well to the oppressive bourgeois social climate of the Second Empire, a new literary and artistic esthetic gradually took shape in the world of French letters around the middle of the century: *L'Art pour l'art—Art for Art's Sake*. As Jean-Paul Sartre has described this fascinating social development:

From 1848 onwards, up until the First World War, the bourgeois-ification of the writer's public caused him to begin to write *against* his public instead of for them. He continued to sell his works, but he disdained those who purchased them, and he made great efforts to run counter to their every desire. It went without saying that it was always better to be misunderstood than celebrated, and that financial success, if achieved during the writer's lifetime, was done so only by mistake. This fundamental conflict between literary writers and their public is something unprecedented in the history of literature.¹¹

During this period, all literary works viewed as having some "useful" function to society in practical, moral, or educational terms immediately became suspect. Any novel, short story, collection of poetry, or theatrical play that was believed to harbor any intentions toward public edification was promptly dismissed as intrinsically non-literary. It was believed that "true" literature must focus, to the exclusion of all else, on a portrayal of *Le Beau* and on the primacy of Form over Content. Judged according to these criteria, Verne's works—overtly didactic and strongly referential as they were—were obviously not "true" literature.

Finally, another reason for Verne's rebuff seems to have been more sociological than literary. Verne was the one of the first novelists in France to attempt to bridge a kind of cultural chasm that divided French society as a whole. On the one side were the progressive and energetic Positivists who, taking full advantage of the tools of the Industrial Revolution and a laissez-faire brand of governmental capitalism, were rapidly industrializing the French countryside in the name of Progress and Science. On the other side were the partisans of anti-scientism and the practitioners of *Art for Art's Sake* (both sometimes in uneasy coalition with the Catholic Church) who viewed this unrestricted technological growth as a direct threat to human values. Such negative public sentiment reached a zenith during the 1920s after the horrors of World War I, and began to diminish only during the 1950s after World War II. Consequently, amid such rapidly rising tides of anti-scientism in France, it is hardly any wonder that Jules Verne's "scientific novels" might have been viewed somewhat unfavorably.

Thus, it appears to have been a convergence of many different factors which dictated that Jules Verne, despite the enormous popular success of his *Voyages Extraordinaires*, was not recognized as an important literary figure during his lifetime. Of course, no simple answers can be given to such a complex question. But two facts are undeniable: Verne's works were indeed rebuffed by the French literary establishment of his time, and the author himself was painfully aware of this rejection. As Verne explained it to one of his American interviewers in 1894:

The great regret of my life is that I have never taken my place in French literature... A little more justice to me from my own countrymen would have been prized by me... That is what I regret and always shall regret...¹²

And, it has only been during the past 20 years or so that Verne has finally been admitted into the "official" French literary canon. His

scientific novels are now studied in schools, Ph.D. dissertations have written about him, and his works have generally been accepted by the academic community as “real” literature.

In contrast, of course, outside of Academe, Verne’s works had an immediate and long-lasting influence on some of the most famous scientists, explorers, and writers of our world. Simon Lake, developer of the first modern submarine in 1898, and William Beebe, pioneer deepsea explorer of the 1930s, both acknowledged that their choice of careers came from reading Verne’s *Twenty Thousand Leagues Under the Sea*.¹³ In the early 1920s, the French explorer Norbert Casteret, discoverer of some of the largest prehistoric caves in Europe, confessed “It was Jules Verne who encouraged me to penetrate the great caves of the Pyrene mountains”¹⁴ after he had read *Journey to the Center of the Earth*. Admiral Richard Byrd, following his conquest of the North Pole in 1926, reportedly said “It was Jules Verne who led me there”¹⁵—referring to a similar polar quest in the pages of Verne’s *The Voyages of Captain Hatteras*. In 1954, the U.S. Navy launched the world’s first nuclear-powered submarine and ceremoniously baptized it the *Nautilus*. And astronaut Neil Armstrong, during a July 1979 appearance in Paris to celebrate the tenth anniversary of his walk on the Moon, reminisced “When I stepped down onto the Moon, and I saw the Earth floating like a blue balloon in the dark sky, I immediately thought of Jules Verne.”¹⁶ Other testimonials to Verne, almost too numerous to cite, include those from the early aviator Santos-Dumont, the Suez Canal engineer Ferdinand de Lesseps, the 1909 Nobel Prize winner and inventor of the wireless Marconi, the rocket scientists Hermann Oberth and Konstantin Tsiolkovski, the explorer-oceanographer Jean-Baptiste Charcot, the physicist Georges Claude, the astronauts Yuri Gagarin and Frank Borman, many of the world’s most famous writers like Leon Tolstoy, George Sand, Rudyard Kipling, Jean Cocteau, Paul Claudel, François Mauriac, Antoine de Saint-Exupéry, Jean-Paul Sartre, Ray Bradbury, Michael Crichton, and many more . . .

But why am I spending so much time talking about Jules Verne’s popular versus critical reception and his inspirational influence on some of the leading scientists, engineers, and writers of recent history? Because this curiously contradictory fate of being simultaneously celebrated, world-renowned, and highly influential yet initially shunned by Academe and the “official” literary establishment is highly significant, in that it closely parallels what has occurred during the 20th century to the genre of science fiction itself! From its cult status and (sometimes self-imposed) “ghettoization” outside the literary mainstream during the Gernsback and Campbell years of the 1920s, 30s, and 40s, to its post-war proliferation in television and film during the 1950s and 60s, to its growing prevalence and acceptance into the cultural mainstream of the 1970s, 80s and 90s, science fiction has followed a popular and critical path very similar to that of Verne’s works. And in much the same way that Verne’s fiction ultimately impacted the scientific and technological progress of the late 19th and early 20th century, the science fiction from the early 20th century through today has had a profound (yet usually unacknowledged) influence on the scientific and technological progress of our own times (and has even, on occasion, deeply affected our nation’s foreign policy! Witness, for example, the SDI “Star Wars” defense initiatives). And yet, despite all this and similar to Verne, it has only been during the past 10-20 years that science fiction as a literary genre has been accepted by America’s academic community as a “real” literature.

Why now? What is there about our society of today which makes it more receptive to this particular genre which it has, for so long, deemed “subliterary” and somehow unsuited for academic study? Is it because, as I mentioned earlier, that science fiction itself has matured and has become much more sophisticated? Or have *we* as a society somehow changed? There are undoubtedly many reasons which might account for this metamorphosis of opinion (which, for lack of time, I won’t elaborate on). But I wonder if, in our high-tech postmodern world of today—where traditional generic boundaries have grown blurred, where computers, artificial intelligence, virtual reality, cellular telephones, and interactive television have increasingly redefined our notions of the real, where the post-industrial future no longer is “out there” but rather “right here, all around us”—I wonder if, as a result of all this, we have not entered into a phase of human history where such traditional aesthetic demarcations of “high” versus “low” culture, and “nonliterary” versus “literary” have all become moot, irrelevant, outdated. And we now feel instinctively drawn to this literature called science fiction because we now see it as deeply relevant to our experience and to our very identity amid the constantly accelerating changes in our environment.

In Marshall McLuhan’s 1967 book *The Medium is the Message*, he commented that “Science fiction writing today presents situations that enable us to perceive the potential of new technologies.”¹⁷ And in his bestselling 1970 book titled *Future Shock*, Alvin Toffler went even further when he suggested that science fiction should be an integral component of our public school curricula in order to prepare our children for the future. Toffler argues:

...what is needed is a concentrated focus on the social and personal implications of the future, not merely on its technological characteristics.

We do not have a literature *of* the future for use in these courses, but we do have a literature *about* the future, consisting not only of the great utopias but also of contemporary science fiction. ... Science fiction has immense value as a mind-stretching force... Our children should be studying Arthur C. Clarke, William Tenn, Robert Heinlein, Ray Bradbury and Robert Sheckley—not because these writers can tell them more about rocket ships and time machines, but, more important, because they can lead young minds through an imaginative exploration of the jungle of political, social, psychological, and ethical issues that will confront these children as adults.¹⁸

In much the same fashion as Jules Verne did for our parents, grand-parents, and great grand-parents, today’s science fiction—better than any other genre—can portray humanity’s confrontation with the “other,” the alien, the unknown, and can provide the pedagogical means to acclimate us to such encounters. Both Jules Verne and modern sf offer a kind of initiatory journey into difference and change. It is often observed that learning to cope with difference and change is necessary for intellectual and emotional growth, and that “broadened horizons”—in all senses of the term—are the tangible fruits of such growth. In this context, it seems evident that Verne’s narratives during the late 19th century and the modern sf of today both tend to function as emulative models for social adaptation, or (as Lewis Mumford once put it) as cultural “shock absorbers”¹⁹ for life in a rapidly-changing world. In other words, they are *utile et dulce*.

Like Toffler, many contemporary literary critics and writers have also recognized this inherently didactic dimension in science

fiction—how it “stretches the reader’s mind” by postulating radically new perspectives on technological growth, social problems, human behavior, and the very fabric of what we call reality. For example, the Canadian sf scholar David Ketterer has stated that: “SF teaches adaptability and elasticity of mind in the face of change.”²⁰ The French writer Maurice Blanchot has noted: “[SF] is an essentially intellectual exercise where what is desired is always a total reconsideration of our basic premises.”²¹ The literary theorist Darko Suvin has defined sf as the “literature of estrangement and reader cognition” and goes on to differentiate sf, on these grounds, from other related literary genres like fantasy and horror.²² Some critics have suggested replacing the word “science fiction” itself with a new label—“speculative fiction”—a more inclusive, neutral term, and one which has the advantage of allowing the continued use of the acronym “SF.” And the well-known humanities scholar Robert Scholes has defined this genre as “fiction that offers us a world clearly and radically discontinuous from the one we know, yet returns to confront that known world in some cognitive way” and he goes on to offer yet another “SF”-type name for it: “structural fabulation.”²³ Indeed, the debate as to the exact definition of what “sf” is has gone on for many years, and probably will continue to go on for many more. In the words of John Clute and Peter Nicholls in their *Encyclopedia of Science Fiction*:

There is really no good reason to expect that a workable definition of sf will ever be established. None has been so far. ... And it is still not possible to describe sf as a homogeneous form of writing. Sf is arguably not a genre in the strict sense at all—and why should it be? Historically, it grew from the merging of many distinct genres, from utopias to space adventures. Instinctively, however, we may feel that, if sf ever loses its sense of fluidity of the future and the excitement of our scientific attempts to understand our Universe...then it may no longer be worth fighting over.²³

Through the myriad of definitions and counter-definitions of science fiction floating around the critical landscape today, two characteristics of this form of writing which seem to elicit universal agreement are the following: (in the words of Clute and Nicholls) sf is “exciting” and seeks to help us “understand our Universe.” In other words, it is *utile et dulce*.

But exactly *how* does a science-fiction story do this? It may be entertaining, okay, but how does it teach us to “understand our Universe”? Part of the answer is that, in comparison to more realistic literary genres, science fiction consistently requires of the reader *more imagination and more cognition*. Similar in some respects to its distant cousin “detective fiction,” sf is what might be called an *active* rather than passive literary genre. It obliges readers to become *engaged* with what they are reading: to *look beyond* the images generated by the words printed on the page, to visualize the unvisualizable, to *project* their imaginations into places where they are not accustomed to travelling, to “boldly see where they have never seen before.” And what allows the reader to do this, to effectively “suspend disbelief” in this manner, is part of the very structure of sf itself: its reliance on *rational verisimilitude and recuperability*. In sf, the strange and the unusual must, in some way, be plausible extrapolations of the ordinary and usual. The futuristic technology, the utopias or dystopias, the alien worlds and lifeforms, or even the chronicles of alternative history must be the logical extensions of a hypothetical “*What if...*” In other words, in contrast to the Never-never Land of fantasy, the province of sf is what *might* be or what *could* be. Viewed from this vantage-point, one might thus define science fiction as a brand of literature which combines the imagination of fantasy with the cognition of detective fiction.

If you’ll bear with me for a moment, I’d like to dig a bit deeper into this question because it clarifies what I see as the pedagogical essence of science fiction today and why more educators should be teaching it in the classroom. I have said that science fiction is a literature whose defining features are increased levels of imagination and cognition. Imagination, obviously, but how does it go about making readers think? Let us begin with the most basic level, the reading process itself. In linguistic theory, as Marc Angenot of McGill University has pointed out, science fiction might be defined as a literature of “absent paradigms.” He explains as follows:

In contrast to realistic fiction, SF is a *conjectural* genre in two respects. Its aesthetic goal consists in creating a remote, estranged, and yet intelligible “world.” The narrative about such a world, *itself* requires a conjectural reading. It does not call for the reader to apply norms, rules, conventions, and so forth of his empirical world, but instead assumes a paradigmatic intelligibility that is both delusive and necessary. The reader, in the act of cognitively coming to terms with the text, shifts from the unfolding (syntagmatic) sequence of the plot to an “elsewhere”—to the sematic paradigms...which are supposed to confer meaning on the discourse. From a semiotic point of view, then, SF...is a fictional discourse based on intelligible syntagmatic rules.. but ...delusive *missing paradigms*.²⁴

What is meant here, in general terms, is that reading science fiction is very different from reading realistic fiction in that the various paradigms produced by the signifiers—i.e., the mental associations created by the words themselves—are either incomplete or entirely absent. They create “estrangement.” The reader must *conjecture* meaning, must “fill in the semantic blanks,” must move to a higher level of cognitive interactivity with the text. And this occurs over the full spectrum of the reader’s experience with the narrative: from visualizing the non-existent referent of an unexpected neologism, to coping with an invented alien tongue, to imagining the mores of an entire futuristic society whose social dynamics are very different from anything found on Earth today. All this requires brain power.

Let me offer the following example as a simple illustration. Let us take three sets of similarly-constructed sentences and compare the manner in which they transmit meaning to the average reader:

The first sentence, articulated in what we might call the *conventionally realistic* mode, is as follows:

“The workers on the small farm were filled with dread, for it was the year of the Locust.”

Most readers are able to quickly assimilate the meaning here: the words and their connotations are familiar, and the paradigms evoked by these words seem pretty clear-cut. This story is obviously about the trials and tribulations of a group of farmers who are very worried about the possible damage to their crops from a horde of particularly voracious insects which descend upon their fields on certain years.

Let us now take the same sentence and change a few words in order to force the reader’s level of cognition to the next level of complexity. We could call this reading mode *metaphorical* or *allegorical*, in that the referentiality of the words and the paradigms generated by them tend to go well beyond the literal, denotative function, and add an entirely new level of meaning. This second

sentence would read as follows:

“The family in the white house was filled with dread, for it was the year of the Newt.”

Read literally, this story would seem to be about the trials and tribulations of a certain family living in an uncolored domicile who are very worried about a small semiaquatic salamander. Read in this literal fashion—because of the absent paradigms involved and the fact that the final word in the sequence is spelled with a capital “N”—this story would almost seem to be verging on a being a tale of science-fiction: perhaps it is an excerpt from the 1936 Czech sf novel by Karel Capek called *The War with the Newts* which one critic has summarized as follows:

The newts are an alien race liberated from their subterranean home by an accident. They begin to learn human ways, and they learn them all too well. Eventually, they replace their models, providing in the meantime a particularly sharp caricature of human habits and politics. This novel is slightly long-winded, but it remains the most effective of Karl Capek’s works.²⁵

Of course, when the previous sentence is read metaphorically and/or allegorically, and within a particular social and political context, the paradigms seem quite explicit and its meaning is very clear indeed.

Finally, let’s take the same sentence, change a few words, and put it into what we might call a *projective, conjectural* mode—a mode requiring the continual cognitive cooperation of the reader in order to create meaning. Such a sentence might read as follows:

“The Amerkans of the domed city were filled with dread, for it was the year of the Sorax.”

Here, the story is not at all obvious. It seems to be about the trials and tribulations of a people called the “Amerkans” living in a domed city who are worried about some ostensibly dangerous entity or phenomenon called the Sorax. The absent paradigms surrounding the words “Amerkans,” “domed city,” and particularly the difficult-to-assimilate neologism “Sorax” all force the reader to use his or her imagination and invent references for these terms. Meaning is not spoon-fed; it must be methodically constructed, often from scratch. It demands brain power.

Another closely-related semiotic feature of science fiction which stimulates the thought processes of its readers might be called the “oblique approach.” This strategy occurs when the author discusses strange and unfamiliar things in an offhand sort of way, as if they were already commonplace and familiar. Kathleen Spencer discussed this particular narrative device in her seminal study (or should I say “ovular” study?) on science-fiction stylistics published in *Science-Fiction Studies* a few years ago. She explains this “oblique method” as follows:

This technique allows great economy at the sentence level; often a single word can suggest volumes about the unfamiliar society. One of the most famous and oft-cited examples is a sentence of Heinlein’s: “The door irised.” The term forces the reader to visualize an entirely new kind of door, circular rather than rectangular, constructed not in a single piece but perhaps of overlapping panels like the shutters of some cameras. A door of such design implies something about the technological level of the society... It also implies something about the physiology of the creatures for whom the doors were originally designed... Above all it separates this imagined society, in a subtle and powerful way, from the one we know. What kinds of circumstances, we have to ask ourselves, could cause human beings, for whom a rectangular door is the most functional shape, to adopt “irising” doors as the norm...?²⁶

In science fiction, it is not only what is *said* but also what is *implied* that leads to increased reader cognition.

I hope that, in all I’ve said to you so far this evening, I’ve managed to underscore the fact that science fiction is a literary genre which privileges both *imagination* and *cognition* and, as such, is one of the most pedagogical and entertaining—*utile et dulce*—types of literature available in the world today. If all this is so, then why isn’t it taught more often in our schools? The answer is that, at least on the college level, it *is*. In much the same fashion as Jules Verne is now part of the literary canon in France, as I mentioned earlier, science fiction is rapidly becoming a permanent curricular fixture in the English departments of universities around the United States. And more and more public high schools and elementary schools around the country have followed suit. As a conclusion to this speech, let me share with you the comments of a few veteran professors who were among the first to teach science fiction at the college level during the early 1960s and who now are reflecting back over just how far the teaching of sf has come during the past 35 years. Professor and sf author Jack Williamson writes:

I think it was in 1962 that I saw an article in the National Observer (an affiliate of the Wall Street Journal that no longer exists) about the sf course Mark Hillegas was teaching at Colgate. With that suggestion, I got my own course into the catalog here at Eastern New Mexico University. I began it in 1964 and, I think, taught it every year till I retired. ...

In the beginning, we had a kind of missionary zeal. In spite of pollution and the Bomb, we still cherished rosy visions of some utopian technological future. We assumed that many young people were or would become eager readers of sf, and that this interest might lead them into nearly everything. There were anthologies of sf stories for courses in everything from anthropology to zoology. I enjoyed by own course. Many students did; enrollments were good.

Science fiction today has reached most of the goals that looked impossible back when I was existing on a cent a word from sales to the pulps.²⁷

In another testimonial, Professor H. Bruce Franklin of Rutgers University writes:

By 1968 we critics and scholars of science fiction had pretty much won our little war. Science fiction, today, is certainly a fixture of the American academy. We are no longer considered just loonies and kooks, as we were generally regarded back in the early 1960s when we first started teaching science-fiction courses. It’s much easier to get our work published now. We no longer are pressed to legitimize our

field, despite some last-ditch fusillades from those with very different views of what literature is supposed to be.

One reason for the academic acceptance of science fiction is, of course, that the *importance* of science fiction itself can now hardly be in doubt. Any thinking person in America today knows that science fiction forms part of the center of the imagination of our entire culture...²⁸

And professor and sf author James Gunn, from the University of Kansas, who founded the Center for the Study of Science Fiction—which offers, among other things, summer workshops on teaching sf for public school teachers—writes:

I taught my first course in 1969. It may be a commentary on how swiftly sf has been accepted that ten years later the University of Kansas offered a summer workshop on the teaching of science fiction, an annual course at the junior-senior level, an occasional graduate course, and half-a-dozen courses at the sophomore level ...

Hundreds, perhaps thousands, of courses are taught in colleges and universities across the country; many more are taught in high schools and junior high schools and even in primary schools. ...

What was an escape literature, a pulp genre beneath academic consideration, has become relevant and respectable. It is being taught not only in English classes but in classes on religion, philosophy, the various behavioral sciences, and even the physical sciences. ...

[T]he teaching of science fiction is not a fad. In these days of growing apathy about learning, sf classes are large and enthusiastic, and this enthusiasm can be used as the entering wedge for the love of learning. It offers the opportunity to stretch the imagination as well as exercise the mind; it can dramatize contemporary problems and consider other ways of existing, behaving, organizing, perceiving, thinking. It is a literature of ideas and a literature of anticipation as well as a literature of change; it can be a literature of education.²⁹

I could do no better, in my conclusion to you this evening, than to repeat once again Professor Gunn's eloquent summation of what this *utile et dulce* literary genre called science fiction is truly all about: very simply, "it can be a literature of education."

Thank you very much.

NOTES

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5. Pierre-Jules Hetzel, "A nos lecteurs," *Magasin d'Éducation et de Récréation* I:1 (1864), 1-3.
6. Reprinted in Charles Lemire, *Jules Verne* (Paris: Berger-Levrault, 1908), 107.
7. Reprinted in Jean-Jules Verne, *Jules Verne* (Paris: Hachette, 1973), 329.
8. Emile Zola, *Oeuvres complètes* (Paris: Cercle du Livre Précieux, 1967-70), 235, 271.
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10. C.-A. Sainte-Beuve, "De la littérature industrielle," *La Revue des Deux Mondes* (1 sept. 1839), 675.
11. Jean-Paul Sartre, *Qu'est-ce que la littérature?* (Paris: Gallimard, 1978), 148.
12. Quoted in R.H. Sherard, "Jules Verne at Home," *McClure's Magazine* II:2 (Jan. 1894), 115.
13. Cited in Franz Born, *The Man who Invented the Future: Jules Verne* (NY: SBS, 1967), 10-11, 98-99.
14. Cited in Born, 77-78.
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20. David Ketterer, *New Worlds for Old* (Bloomington: Indiana UP, 1974), 25.
21. Maurice Blanchot, "Le bon usage de la science-fiction," *La Nouvelle Revue Française* (janvier 1959), 95-96.
22. Darko Suvin, "The State of the Art in Science Fiction Theory," *Science Fiction Studies* VI:1 (1979), 37.
23. John Clute and Peter Nicholls, "Definitions of Sf," *Encyclopedia of Science Fiction* (NY: St.-Martins Press, 1993), 314.
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25. Neil Barron, ed. *Anatomy of Wonder* (NY: Bowker, 1987), 66.
26. Kathleen Spencer, "Towards a Stylistic Description of Science Fiction," *Science Fiction Studies* X:1 (1983), 40.
27. Jack Williamson, letter to me dated October 30, 1994.
28. H. Bruce Franklin, SFRA Pilgrim acceptance speech, 1983.
29. James Gunn, "The Education of a Science Fiction Teacher," *Kansas Quarterly* X.4 (fall 1978), 54.