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Does science fiction – yes, science fiction – suggest futures for news?

If at first an idea does not sound absurd, then there is no hope for it.

– Albert Einstein

I long dismissed science fiction as fairy-tale foolishness banged out by hacks for barely literate adolescents. Such fiction was aimed at pimply teenage boys who purchased or purloined their sci-fi paperbacks from the bus-station racks next to displays of romance novels and the hard-core men's magazines in brown wrappers.

My doubts about speculative fiction echoed the reservations of philosophers, poets, and scholars, ancient and contemporary. Aristotle warned that no one can narrate what has yet to happen. John Donne dismissed as perverse those who undertake "to write a chronicle of things before they are done."[1]

A more contemporary commentator, the English literature professor Tom Shippey, described the revulsion by otherwise open-minded, sophisticated academic colleagues toward science fiction: "They 'never read science fiction, just can't read science fiction, don't see how anyone gets anything out of science fiction.'"[2]

The presence in science fiction of many bits of hard-to-digest information that Shippey calls "not-true, but also . . . not-unlike-true, not-flatly- (and in the current state of knowledge) impossible" annoys those academic readers.[3] They are troubled by technological gimmicks and fanciful otherworldliness. They are perplexed by intentionally confusing narrative and references to an unfamiliar, futuristic device, concept, or circumstance that the author has not fully explained.

They also may be bothered, I suspect, by science fiction's subversiveness – its attack on reality and fact. Science fiction suggests illogical, counterfactual possibilities. A future based on those possibilities may threaten logical people who have thought of the future as something that can be rationally determined.

But, as I will try to make clear, science fiction, like a giant July 4th fireworks pinwheel, throws off flashes of potential futures for news that readers are not likely to encounter by reading the predictions and prefigurements of scientists and other scholars. However rational, however commonsensical, the scientists and scholars may fail precisely because they are rational and commonsensical. The writers of speculative fiction choose instead to explore ideas that, while not demon-

strably possible, are "not-flatly-impossible."

Can speculative fiction really offer anything important and fresh? Speculative fiction, I confess, rarely ranks as great literature. It does not dazzle with its character development. Its dialogue is often stilted.

Speculative fiction – really more about today than tomorrow – also cannot be counted on to offer consistently accurate forecasts.[4] The science fiction writer Frederik Pohl compares the forecasting ability of speculative fiction writers to the accuracy of a broken clock. Assuming the dial of the clock contains the usual numbers, we can rely on the broken clock to be accurate twice a day. "If you put together enough science fiction stories," the science fiction writer Ben Bova says, "some of the events described in the stories will come true, eventually."[5]

But speculative fiction should not be judged by its ability to predict the future, which may be impossible to predict. Speculative fiction plays with trends and assumptions to describe what could happen. It provides "an arena for the exploration of ideas unavailable elsewhere," writes Thomas Hine in *Facing Tomorrow: What the Future Has Been, What the Future Can Be*.[6] This "subjunctive reality," as the science fiction writer Samuel R. Delany calls it, is a way of examining what is neither impossible nor verifiably possible – a way of considering present possibilities by working out their consequences.[7]

The subjunctive reality of science fiction – the boundary enclosing the arena for the exploration of ideas – is difficult to define or describe. Do we understand the barriers, symbolic or otherwise, that separate the impossible from the possible?[8] Do we know our limitations in trying to determine the order in apparent disorder, the regularities in apparent irregularities? Not until the 1970s, the science writer James Gleick suggests, did mathematicians, physicists, and other scientists begin seeking to understand different kinds of irregularities. Those irregularities would be lumped together under the shorthand name of *chaos*.

Scientists found chaos everywhere, Gleick writes – in the random, rising swirls of smoke from a cigarette, in the unpredictable flow of blood, and in the unanticipated behavior of turbulent weather.[9] The physicist Paul Halpern argues that "incompleteness of knowledge is the rule rather than the exception." He adds, quoting James Doyne Farmer, cofounder of the Prediction Company, that "science has come to realize that 'there are always going to be inherently unpredictable aspects of the future.'"[10] But even before the formal study and appreciation of chaos theory, visionaries questioned whether inventions and scientific and technological changes ever permitted what Herman Kahn called surprise-free futures – that is, futures based on current trends and foreseeable inventions.[11]

For speculative fiction writers contemplating the future of news, the past is not prologue, the present is not a key to the future. In *1984, Spring: A Choice of Futures* (1984), Arthur C. Clarke described how he would have responded to a magazine editor who asked him in 1842 to forecast the major changes of the next century-and-a-half. He guessed that he would have imagined the invention of photography and the increased importance of the steam-driven iron ship, the railroad, and the electric telegraph. But he doubted that he would have anticipated automobiles and heavier-than-air planes, the

existence of electromagnetic waves, or the discovery of X-rays. "Any extrapolation based on existing technology – or even reasonable extrapolations of it – will always be hopelessly short of reality," Clarke concluded.[12] Less than fifteen years later he could have added to his list of unforeseeables the Internet and other news-related inventions.

Speculative fiction often imagines futures based on scientific and technological advances that are not extrapolations from the present – that are, instead, advances of speed and scale that appear to confirm one of Clarke's laws: "Any sufficiently advanced technology is indistinguishable from magic."[13] Bova says:

> No futurist is going to predict that a semi-accidental discovery will transform the entire world. Yet the invention of the transistor did just that. . . . A futurist's forecast of improvements in electronics technology, made around 1950, would have concentrated on bigger and more complicated vacuum tubes and missed entirely the microminiaturization that transistors have made possible. Science fiction writers, circa 1950, "predicted" marvels such as wrist-radios and pocket-sized computers, not because they foresaw the invention of the transistor, but because they intuitively felt that some kind of improvement would come along to shrink the bulky computers and radios of that day.[14]

Michio Kaku begins his *Physics of the Impossible*, which explores the world of phasers, force fields, teleportation, and time travel, with a simple, short warning that may be relevant to those who choose to write off speculative fiction: "We ignore the impossible at our peril."[15] Kaku, a physicist, recounts the attacks in the 1920s and 1930s on Robert Goddard, founder of modern rocketry. Critics insisted rockets could not fly in outer space because outer space provided no air to push against. They dismissed Goddard's rockets as impossible, as Goddard's Folly. *The New York Times* sniffed condescendingly: "Professor Goddard does not know the relation between action and reaction. . . . He seems to lack the basic knowledge ladled out daily in high schools."[16]

Scientists also widely believed in the 1930s that an atomic bomb was impossible. Physicists understood that, according to Einstein's equation $E = mc^2$, the atom's nucleus contains a tremendous quantity of energy. But the physicists did not focus on the significance of the energy released by a single nucleus. The exception was Leo Szilard. He recalled reading the 1914 H. G. Wells novel *The World Set Free*, in which Wells forecast the development of an atomic bomb for a war that would devastate the world.[17]

P. D. Smith, who chronicled discoveries that led to the development of the atomic bomb, suggests that Szilard's love of speculative fiction explains his creative advantage over Albert Einstein, Enrico Fermi, and other peers who were slower to see the humanity-threatening applications of atomic energy. Looking back at the atomic bomb dropped on Hiroshima, Smith writes: "It was no idle boast when, in 1949, science fiction writer Theodore Sturgeon said: 'There is good reason to believe that, outside of the top men in the Manhattan [Project] and in the Armed Forces, the only people in the world who fully understood what had happened on 6 August 1945 were the aficionados of science fiction.'"[18]

Writers of science fiction are, says Donna Haraway, "anthropologists of possible selves . . . technicians of realizable futures."[19] They are prepared to sacrifice the rational and commonsensical to the irrational and barely possible. Ironically, throughout history the

irrational and barely possible sometimes have turned out to be more than just possible.

In the nineteenth century, French writers of speculative fiction playfully envisioned new news media. Some were little more than extrapolations from the present. The novelist Emile Souvestre's *The World as It Shall Be* (1846) describes *Le Grand Pan*, "the paper that never sleeps," as a print version of 24/7 CNN, reporting the news in the year 3000 as it happens.[20] An immense roll of newsprint on large spools flows from the newspaper's building, endlessly snaking along waist high in front of cafés, shops, and reading rooms, then climbing to a third-floor subscriber's apartment and returning to street level, "hotly pursued by non-subscribers who hoped to snatch a little information as it went by."[21] The behavior of the non-subscribers suggests the behavior of Internet users today who choose to read newspapers for free online rather than pay for subscriptions.

The French novelist Albert Robida's *The Twentieth Century* (1887) went further in updating the newspaper.[22] Robida's novel imagines all-electric homes outfitted with telephonographs (news bulletins are delivered automatically through telephones) and wall-sized telephonoscopes (televisions) that are interactive. Subscribers at home can receive news and entertainment. They also can react to a televised opera performance along with the audience at the theater, applauding, booing, and even talking from home with friends in the theater audience.

The website TechNovelgy.com – "where science meets fiction" – highlights a story written about 120 years ago by Jules Verne and Michel Verne. "In the Year 2889" seems to be describing a modern news broadcast. Verne writes about the *Earth Chronicle*'s being spoken, not printed, every morning to subscribers who, "from interesting conversations with reporters, statesmen and scientists, learn the news of the day."[23]

Speculative fiction of the twentieth and early twenty-first centuries offers "not-flatly-impossible" worlds of news reporters and news media that imagine at least four other possibilities. First, speculative fiction plays with the idea of improving humans' ability to hear, smell, and see, acuities that would be especially useful to reporters. The reporter Clark Kent/Superman, for example, can see through anything, smell what humans cannot smell, and hear the quietest of sounds across a wider frequency than mere mortals. (Clark Kent/Superman to arms dealer: "I can hear your heartbeat. I know you're lying.")

Science fiction has a special fascination with improving the human eye of reporters to permit their audiences to experience what otherwise might be impossible. The television network boss (Harry Dean Stanton) in *Death Watch*, a 1979 movie based on D. G. Compton's *The Continuous Katherine Mortenhoe* (1974), implants a miniature camera in the head of Roddie the reporter (Harvey Keitel) so that, in a world where human death has virtually disappeared, he can film a medical aberration, Katherine Mortenhoe (Romy Schneider), who is dying of an incurable disease. Maya Andreyeva, the News One "telepresence" camera in Raphael Carter's *The Fortunate Fall* (1996), can transmit to viewers' heads a holographic memory of an hours-long interview: "The event seems vivid and complete."[24]

Real-world research projects today recall bionic eyes from science fiction. A stretchable, silicon electronic "eye" camera – the size and shape of a human eye –

integrates a transparent hemispherical cap and a simple imaging lens.[25] Such a device, already implanted in a small number of patients, restores vision to people blinded by retinal diseases. Researchers say a computer system's high-speed video cameras, acting as eyes, outperform the eyes of line judges and reporters at tennis matches, especially on balls ruled out that are actually in. (A 150-mile-per-hour serve travels faster than the human eye and brain can track it.)[26]

Second, speculative fiction imagines various Others – avatars, androids, and cyborgs – in place of entirely human journalists. In the 1980s, *Max Headroom* – a British and U.S. television series, a video game, and a U.K. telefilm, *Max Headroom: 20 Minutes into the Future* – featured an artificial intelligence (Headroom) that succeeds Network 23's star investigative reporter, Edison Carter, who is unconscious and suffering from head injuries. (A copy of Carter's mind is downloaded into a computer, resulting in Headroom.)

The supposedly computer-generated Headroom delivers the news in a staccato, stuttering style, as if he is a computer. But in the mid-1980s, computer technology was not advanced enough for a full-motion, voice synchronized talking head; in the British television series, the actor Matt Frewer, covered in foam-and-latex makeup and a fiberglass suit, played Headroom. He was superimposed over a moving geometric background, which also was not computer generated.

Versions of Headroom began to appear in the real world of news less than a generation later. In 2000, the British news agency Press Association introduced Ananova.com, billed as "the world's first virtual newscaster."[27] A text-to-speech engine read news stories while a parallel three-dimensional engine animated an attractive female face ringed with hip, close-cropped, green-tinted hair.

While Ananova, the digital news personality, did not survive, other experiments update the effort to broadcast news from computer-generated avatars. Kristian Hammond, codirector of Northwestern University's Intelligent Information Laboratory, has had his students creating computer-generated *News at Seven* virtual newscasts since 2006. Two young avatars – a woman in gray dress, dark sweater, and glasses and a man in knot-down red tie and white shirt, shirttails hanging out of his pants – present the news.

News Anchors: The Next Endangered Species? – a Miles O'Brien–narrated video posted by the National Science Foundation, which helped fund *News at Seven* – reminds viewers that human newscasters, in contrast to the *News at Seven* avatars, cost their employers significant salaries and have bad hair days. Other computer programs that are being developed by Northwestern's Intelligent Information Laboratory suggest that even more humans from the world of news may someday be threatened with extinction. Those programs, for example, generate movie reviews and baseball game recaps (bylined "The Machine").[28] The Intelligent Information Laboratory's Hammond envisions generating coverage of, for example, Little League Baseball: "No one ever writes a game story for the thousands of games that get played each spring. But we could. And could do so in multiple languages."[29]

The idea of machines with bylines encourages us to consider what the literary critic Larry McCaffery calls "the basic paradigms and oppositions that we've relied upon to understand ourselves and our relationships to the universe – the categorical oppositions, for example, of organic/inorganic, male/female, originality/duplication (image/reality, artifice/nature), human/nonhuman."[30]

Science fiction dramatizes the human-nonhuman tension. Chester Hummin, the human reporter in Isaac Asimov's *Prelude to Foundation* (1988), turns out to be a robot, R. Daneel Olivaw; the *R* stands for robot. In *Made in U.S.A.* (1953) by J. T. McIntosh (a pseudonym of James Murdoch MacGregor), the morning after Roderick, a psychologist, marries Allison, an ex-copywriter, she tells Roderick, a human, that she is an android. He sues for divorce, despite a recent ruling that the android half of the population has full legal equality. Two reporters for *Twenty-four Hours* – Anona Grier, human, and Walter Hallsmith, android – cover the historic trial with the intention of ensuring fair coverage between them.[31]

The human-nonhuman opposition often evolves into something threatening. Clifford Simak's story "Skirmish" (1950) features a reporter's typewriter that talks back to him, a liberated sewing machine, and a giant computer that has escaped from Harvard University. The reporter worries that the freed machines could threaten humanity. Simak writes, "They might set up a machine civilization with Man as the servants of machines, with the present roles reversed."[32]

Third, speculative fiction posits journalist-free dystopias. Norman Spinrad's *A World Between* (1979) takes place on Pacifica, an Earth-colonized planet where an inquisitive citizen can plug "into the electronic universe of the . . . media network," the Galactic Media Web. No reporters are necessary. "Through cameras, microphones, and screens," each citizen's hearing and sight "became not only planetwide but multiplex and compounded like the vision of an insect." Everyone's face and voice on worlds beyond, all of human history since videotape's invention, and current news from every perspective "might march before her eyes at whim."[33]

Drawing on cybernetics and communication webs, William Gibson's cyberpunk novels, beginning with *Neuromancer* (1984), introduce hackers and other high-tech lowlifes who prepare us for a twenty-first-century reality of fewer shoe-leather storytellers and more "hacker journalists" – programmers who massage computer databases, search engines, and other technology tools to dig up mountains of facts and other data.[34] Not surprisingly, the aggregators/editors equipped today to quickly digest the hacker journalists' work, speedily create Web pages, and link to the latest in breaking news are known by a word that comes from the title of a science fiction movie: RoboCop editors.[35]

Fourth, speculative fiction questions notions of reality. Is, for instance, the universe three dimensional, four dimensional, or five dimensional? Science fiction writers often focus on the dimension of time – especially the possibility that journalists might someday be able to experience the past and exploit their knowledge of the future.

In Robert Silverberg's "What We Learned from This Morning's Newspaper" (1972), *The New York Times* beats the competition by printing news that will not occur for nine days. A brilliant scientist in John Buchan's *The Gap in the Curtain* (1932) offers several men the chance to glimpse the *Times* of London a year in the future; two think that they have read their own obituary, but guess that it is perhaps "a hoax or some journalistic blunder." One dies exactly a year later, one does not. Edward W. Manger, the *Beacon* correspondent in Charles Dickinson's *A Shortcut in Time* (2002), obtains the money for a world-circling jaunt by betting on that year's

winning Kentucky Derby horse and World Series victor "because a girl had returned from the future and told him to do so."[36]

Scientists long have regarded time travel as mind magic – a waste-of-time exercise of the imagination. But J. Richard Gott ("time travel to the future is possible"), Paul Davies, and other twenty-first-century scientists now treat the subject seriously. Davies, a physicist, writes, "Just the fact that time travel seems doubtful, or even impossible to us today, doesn't mean that we can ignore its implications. It may be that easier ways to build a time machine will be discovered, ways that would not require the resources of a supercivilization."[37]

Historians, scientists, and others who have seriously addressed the future usually have preferred to call on reason and the scientific method, not magic or pure imagination, as their tools of choice. "Imagination" suggests the play of children – "Don't let your imagination run away with you!" – not the serious thought of adults.[38] But do not discount the playful, powerful use of the imagination that characterizes the best of speculative fiction's creative, counterfactual representations of the future.

The MIT Media Lab's Marvin Minsky, an expert in artificial intelligence who has dabbled in science fiction, says that "a couple of hundred years from now, maybe [the science fiction writers] Isaac Asimov and Fred Pohl will be considered the important philosophers of the twentieth century, and the professional philosophers will almost all be forgotten, because they're just shallow and wrong, and their ideas aren't very powerful."[39]

Minsky credits Robert Heinlein's science fiction for his interest in tele-operators. "And if we had all read the books by [the science fiction writer John] Brunner more carefully," Minsky says, "we would have had screens in our eyeglasses" in the 1980s. He says the movie *2001* introduced him to the idea that a computer might eventually be able to lip read: "I have spent years trying to devise computer lipreading systems."[40]

The thought experiments of speculative fiction may even help us face whatever real futures await us, says Orson Scott Card: "We have to think of them so that if the worst does come, we'll already know how to live in that universe."[41] Our desires and fears are like voices inside ourselves debating what constitutes the good life and what threatens to end that good life. Speculative fiction about the world of news explores those conflicting voices. One voice embraces future communications technology and a utopian tomorrow, the other voice worries about the dangers of that technology to human privacy and envisions an apocalyptic future. One voice rejoices in an industrialized, urbane, increasingly urban existence in which all humans directly communicate the news to other humans without journalist intermediaries, the other voice worries about sprawling, oppressive megalopolises and yearns for the life of a small-town editor rooted in a remote village.

Drawing on myth, history, science, and the stereotypes and conventions of the present, speculative fiction creates worlds and characters that explore those conflicting voices. John Varley's *Steel Beach* (1992) provides an example of the conflicting voices at work in speculative fiction, based on myth and movies, science and stereotypes. Following Earth's destruction, the reporter Hildy Johnson, who has adopted the famous *Front Page* reporter's name, covers Luna, Earth's colony on the moon, for the elec-

tronic *News Nipple*. Johnson has a love-hate relationship with Luna. He loves living virtually forever and changing his gender at will. The Central Computer, the artificial intellect that runs Luna, keeps the air clean and comfortable and provides fabulous, if fake, sunsets.

But Johnson dislikes his/her job. Luna's inhabitants expect to experience the news from their info-nets instantaneously, and the news consists of "celebrity scandal, the pseudo-scientific breakthrough, psychic predictions, lovingly bloody coverage of disasters." The ultimate headline trumpets: "Win Free Sex Aboard a UFO to Old Earth."[42]

Most reporters have gone to "Direct Interface." They interface with their computers not through a keyboard or microphone but, after entering an altered state, directly through their brain. Johnson, however, takes notes and writes stories on an old-fashioned "handwriter." By pressing the three rows of four colored dots of the handwriter, which is installed in the heel of his/her left hand, Johnson can write stories in shorthand, and, he/she says, "watch the loops and lines scrawl themselves on a strip of readout skin on my wrist, just where a suicide would slash himself."[43]

Johnson also provides moving images from the holocam in his/her left eye. Johnson regrets failing to report momentous news – the five times when the human race almost came to an end – though the Central Computer reassures Johnson that "people don't want to hear these things because they don't understand them."[44]

Depressed, Johnson moves to Luna's 1830s Disneyland village – New Austin, West Texas – to teach students reading (a skill really of no use anymore) and to put out a twice-weekly newspaper. Eventually Johnson has an operation that makes him/her asexual, becomes New Austin's mayor, and tackles the evil as well as good done by Luna's Central Computer.

Varley's novel explores a concern with computers, television, and other technologies voiced by many science fiction writers. Even before the age of television reality shows best known for their unreality, these writers focused on the ability of the latest technological toys, especially television, to transform or avoid reality. In Ray Bradbury's short story "The Veldt" (1950), parents anger their children by threatening to take away their television room. The children use their television room – a giant three-dimensional television set that creates images, smells, and sounds from their imagination – to retaliate. The children imagine that lions devour their parents. The lions do.

Almost three decades ago, long before YouTube and Facebook, the science fiction writer J. G. Ballard said, "You're about to see the transformation of the home to a TV studio, in which we're each the star, director, scriptwriter, and audience of our own continuing movies."[45] In Ballard's *The Day of Creation* (1987), Doctor Mallory, the narrator, dreams of bringing a lifesaving river to arid central Africa. The river appears.

Mallory's rival, Professor Sanger, a television documentary maker, challenges Mallory's apparent creation. Sanger says, "Look at your river – that's a complete invention."

Mallory: "A television company might even have thought it up?"

Sanger: "Perhaps it did. And the difference? Sooner or later, everything turns into television."

Sanger concludes: "The truth is merely the lie you most wish to believe."[46]

A postmodernist like Jean Baudrillard argues that the truth or reality that journalists observe is really a fiction anyway:

"It is thus not necessary to write science fiction" because we already live in it.[47] Some experts argue that reality is so complex, so difficult to see, despite the power of modern cameras and computers to "see" what human senses cannot see, that we lack an adequately convincing vision of reality.[48] To Ballard that means the role of speculative fiction is "to invent the reality."[49]

The notion of inventing reality is not the exclusive preserve of speculative fiction. In Asia, computer-generated "news reports" now offer what *The New York Times* calls "Maybe Journalism," which depicts events "no journalist actually witnessed – and that may not have even occurred."[50] The animators at Next Media, a Hong Kong–based, Chinese-language entertainment and news firm, produce online video "daily-motion news reports" that guess at, for example, the facts surrounding the Tiger Woods SUV crash. The police may have said Woods's wife was using a golf club to free him from the car, but the animators, programmers, and actors at Next Media show her chasing Woods with a golf club.

However pessimistic science fiction's tales about the technologies of the present and future, such fiction often asks us to embrace change – spectacular, often sudden, change – as central to life. Speculative fiction's almost religious faith in best understanding the world through understanding change permeates Octavia E. Butler's *Parable of the Sower* (1993). In Butler's dystopian United States of walled enclaves, drug-crazed arsonists, and death, the eighteen-year-old Lauren Olamina escapes north, recruiting followers to her embryonic faith called Earthseed. The secular religion's credo is

All that you touch
You Change.
All that you Change
Changes you.
The only lasting truth
Is Change.
God
Is Change.[51]

Usually, speculative fiction asks us to be cautious in our assumptions about change. Humanity plays a children's game called "Cheat the Prophet," said G. K. Chesterton: "The players listen very carefully and respectfully to all that the clever people have to say about what is to happen in the next generation. The players then wait until all the clever men are dead and bury them nicely. They then go and do something else."[52]

Not surprisingly, speculative fiction, as a literature of change, keeps changing. The so-called modern genre of science fiction, associated with *Amazing Stories* (started in 1926) and other pulp magazines founded by Hugo Gernsback and his successors, first featured holy-cow stories. One such story, Isaac Asimov's "Nightfall" (1941), appeared in John W. Campbell's *Astounding Science Fiction* magazine. The short story stars a cocky young redheaded Saro City *Chronicle* reporter and syndicated columnist, Theremon 762, on the Earth-like planet of Lagash. For two months, a skeptical Theremon has written articles ridiculing astronomers' efforts to have humanity take steps against an approaching darkness that threatens it.

As the light from the last sun, Beta, wanes, Theremon, out of habit and conscientiousness, keeps writing in his notebook for the article he plans to write the next day: "I'm a newspaperman and I've been assigned to cover a story. I intend covering it."[53] But he realizes his work is meaningless. The eclipse occurs. Theremon goes mad and knows it. The long night of dark doom has arrived.

In the almost three generations since Asimov's story, speculative fiction has become a more sophisticated way of thinking about the future. Brooks Landon sees contemporary speculative fiction as "a language that must be learned or as a mode of writing as distinctive as poetry, complete with its reading protocols quite different from those used for reading other kinds of fiction."[54] The language of computers, the reality of virtual games, the existence of robots – all contribute to a different reading protocol, reinforcing the message of change.

Sentences like "The red sun is high, the blue low," and "I'm not human till I've had my coffee" need to be read differently in speculative fiction. Those sentences are "if" sentences, warning us that reality as we have known it now requires careful questioning. As Ursula K. Le Guin explains: "The reader can't take much for granted in a fiction where the scenery can eat the characters."[55]

We do not know where the digital revolution and other transformative changes will take journalism or where world environmental crises, global terrorist threats, numerous nuclear-armed nations, and other potentially species-threatening challenges will take humanity and this planet. Will the availability on the Internet of infinite amounts of information make professional journalists obsolete, the human horse-drawn carriages of the twenty-first century? In pursuit of audience will those journalists who survive, whether professionals or amateurs, redefine news to focus less on what we think of as reality and more on faux facts – make-believe news about society's sinners and celebrities that entertains but fails to edify? What reality or unreality will be the subject of journalists' work?

The novelist E. L. Doctorow, an inventor of reality who is not himself a science fiction writer, describes a secret of his craft. "A sentence spun from the imagination, that is, a sentence composed as a lie," Doctorow says, "confers on the writer a degree of perception or acuity or heightened awareness that a sentence composed with the strictest attention to fact does not."[56]

Using the Big Bang theory of the origin of the universe as a metaphor, Doctorow attributes a little bang to writers' imaginations. Doctorow's description strikes me as an especially apt explanation of science fiction writing – of why the storytelling of speculative fiction, committed to the notion of extraordinary change in the world, may contain a significant measure of meaning and understanding about the potentially quite otherworldly future of news.

ENDNOTES

1 Paul K. Alkon, *Origins of Futuristic Fiction* (Athens: University of Georgia Press, 1987), 3.

2 Tom Shippey, ed., *Fictional Space: Essays on Contemporary Science Fiction* (Atlantic Highlands, N.J.: Basil Blackwell, 1991), 3.

3 Ibid., 9.

4 Paul Halpern writes that "most science fiction visions of future human behavior tell us more about the world in which the story was written than they do about the world of tomorrow"; Paul Halpern, *The Pursuit of Destiny: A History of Prediction* (Cambridge, Mass.: Perseus, 2000), 201. Donna Haraway suggests that "the boundary between science fiction and social reality is an optical illusion"; Donna J. Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991), 149.

[5] Ben Bova, "Joan Vinge: The Turing Criterion," introduction to Joan D. Vinge, *Eyes of Amber and Other Stories* (New York: New American Library, 1979), 1.

[6] Thomas Hine, *Facing Tomorrow: What the Future Has Been, What the Future Can Be* (New York: Alfred A. Knopf, 1991), 247.

[7] Gary K. Wolfe, *The Known and the Unknown: The Iconography of Science Fiction* (Kent, Ohio: Kent State University Press, 1979), 18.

[8] Ibid., 15.

[9] James Gleick, *Chaos: Making a New Science* (London: Abacus, 1987), 306.

[10] Halpern, *Pursuit of Destiny*, 225.

[11] For the application of chaos theory in history and other nonscientific realms, see John Lewis Gaddis, *The Landscape of History: How Historians Map the Past* (Oxford: Oxford University Press, 2002), 71–89.

[12] Arthur C. Clarke, *Greetings, Carbon-based Bipeds! Collected Essays, 1934–1998* (New York: St. Martin's Press, 1999), 412.

[13] Ibid., 413.

[14] Ben Bova, *Escape Plus* (New York: Tor Books, 1984), 11.

[15] Michio Kaku, *Physics of the Impossible: A Scientific Exploration into the World of Phasers, Force Fields, Teleportation, and Time Travel* (New York: Doubleday, 1998), xiv.

[16] Ibid., xiv.

[17] Ibid., xv. It is only fair to acknowledge that Wells borrowed the idea of an atomic explosive from the book of a scientist, the British radiochemist Frederick Soddy's *The Interpretation of Radium* (1909). See Richard Rhodes, ed., *Visions of Technology* (New York: Simon and Schuster, 1999), 59. Also see William Irwin Thompson, "The World State and the Shadow of H. G. Wells," *Passages About Earth: An Exploration of the New Planetary Culture* (New York: Harper and Row, 1974), 56–83.

[18] P. D. Smith, *Doomsday Men: The Real Dr. Strangelove and the Dream of the Superweapon* (New York: St. Martin's Press, 2007), 302–303.

[19] Scott Bukatman, *Terminal Identity: The Virtual Subject in Postmodern Science Fiction* (Durham, N.C.: Duke University Press, 1993), 299.

[20] Emile Souvestre, *The World as It Shall Be* (Middletown, Conn.: Wesleyan University Press, 2004), 151.

[21] Ibid., 150.

[22] Albert Robida, *The Twentieth Century*, trans. Philippe Willems; ed. Arthur B. Evans (Middletown, Conn.: Wesleyan University Press, 2004).

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