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<div align="center">Speculative Fiction's Cultural Impacts</div>

Though it has not always been called such, speculative fiction has been around since man

first learned to dream. Since those early days of humanity, lying beneath the stars and telling

tales, the concept of the futuristic story has grown and evolved into many sub-genres such as

science (technological) fiction, space operas, and dystopian civilizations. Often, however, these

genres are tossed into categories and slapped with labels like "unimportant" and "time-wasters."

This is not the case. Isaac Asimov, highly accredited science fiction author, once stated that

"Modern science fiction is the only form of literature that consistently considers the nature of the

changes that face us, the possible consequences, and the possible solutions." He goes on to state

that it is the "branch of literature which is concerned with the impact of scientific advance upon

human beings" (qtd. in Idier par. 11). Even though this genre is classified under the term

"fiction", literature and other forms of media in this category have had a significant impact on

the shape of today's society. In fact, speculative fiction is one of the biggest contributors to the

progress evident in today's technology and that technological progress has in turn influenced

speculative fiction.

Technology Derived from Science Fiction

In the modern-day United States, the average day is mostly run and monitored by gadgets

that are often over-looked and under-appreciated. Whether you are looking at the computerized

or the mechanical, the massive or the miniscule, machines are everywhere. Americans utilize them for research; they ride in them on their way to work. They even spend hours upon hours staring at their moving pictures for recreation. For many born in or after the late eighties, these modern marvels are merely common-place technologies. However, many may not know that the conveniences we have today were once the impossible dreams of science fiction thinkers and writers of years gone by. Though it would take many series of encyclopedias to accurately and thoroughly analyze all of the impacts science fiction has had on today's society, here are a few of the gifts the genre has given us.

Everyday Gadgets

Phones

Ask almost any teenage girl in today's society and she will tell you that she would practically die without her phone. Cell phones have grown from a technological wonder to a commonplace necessity within the span of only thirty years. Today, they represent the basis for

Fig. 1. Gene Roddenberry's Star Trek envisions the Bluetooth hands free device over fourty years before it surfaces; www.wired.com, 2 April 2010; Web; 1 Feb 2012.

much of human communication and interaction with their audio transmissions, instant messaging, and video conferencing capabilities. Yet who would have guessed that such an amazing piece of technology could have originated from a TV show airing nearly twenty years before the technology's first commercial debut.

Though Gene Roddenberry's Star Trek only started running in 1966, it portrayed its own version of the flip phone, known as a communicator, with which Captain Kirk was able to communicate from a planet with his ship in outer-space. In addition to these hand-held devices, fans may have also noticed several of the crew wearing Bluetooth-like devices in their ear with which they can receive updates and speak to other crew members (figure 1). In Wired Magazine, writer Nathan Barry relates this technology to Bluetooth ear devices by stating that it has "allowed us to have a similar inner ear experience, transmitting the sound of our phone calls through the air to a phone stashed away in a bag or pocket. And only making us seem slightly crazy talking to ourselves in the process" (par 7).

The Internet

Though the internet is not commonly thought to have existed not even in thought before the 1960s, it is interesting to note that the concept actually pre-dates the mechanics by nearly half a century (Gribbin). In fact, the idea of the world people being connected by the world's telephone lines was pioneered by none other than Mark Twain in his 1898 short story entitled "From the London Times of 1904." In this futuristic story, a man condemned to death row for allegedly killing the inventor of the telelectroscope (the modern-day internet) is allowed to use the invention before he dies. In this respect, Mark twain writes:

The connection was made with the international telephone-station, and day by

day, and night by night, he called up one corner of the globe after another, and

looked upon its life, and studied its strange sights, and spoke with its people, and

realized that by grace of this marvelous instrument he was almost as free as the

birds of the air, although a prisoner under locks and bars. (par. 19)

The vision of this acclaimed writer, though he is not commonly known for his works of

speculative fiction, shows the reader that the internet an idea considered farfetched when it was

first able to link thirteen computers across the U.S. in 1970 was actually conceived before the

turn of the 20th century.

Robots

Today, our culture is practically run by mechanics more commonly known as robots.

They explore places we cannot reach; they build our cars. They even clean our floors. But where

do these technological wonders come from? you might ask. Who do we have to thank? Though

the term robot was only introduced by Karel Oapek in his 1920 play R.U.R. (Rossum's

Universal Robots), the concept of the mechanical humanoid can be traced back to as early as

Ancient Greece. Hephaestus the Greek god of technology, craftsmen, and blacksmiths often

build machines such as golden humanoid helpers and tables with moving legs to help him carry

build his inventions (Homer 184). Talos, a giant made of bronze, was said to have been built by

Hephaestus on orders from Zeus. The metal man spent his days wandering the coast of Europa

throwing boulders at passing ships to protect the land from invaders (Parada par. 1).

This concept of robots as protectors can also be seen in the idea of robotic pets, especially

robotic dogs. In 1999, Sony introduced its first robotic dog known as AIBO (Artificially

Intelligent roBOt). This dog "nods its head, wags its motorized tail, sits, walks, crawls, and chases balls. Named for the Japanese word for "pal," AIBO will not be your buddy without serious verbal coaxing and devoted petting of its metal head" (Dinello 58).

Though the concept is not new to literature, it has only been within the last hundred years or so that people have been able to make the technology work for them. Companies such as iRobot have devoted themselves to producing quality robotic products like an automated vacuum cleaner that runs on its own, even when you're not home, in order to make life more convenient. Ms. Claudia Mitchel has learned something of robotic convenience since she lost her left arm at the shoulder in a motorcycle accident. Since that day, scientists and doctors have fitted Claudia with a bionic arm that is only limited by her thoughts. Her new arm is said to be able to do almost everything she was capable of previously. The only foreseeable problem is that this new arm lacks the sensation of touch, something the owner will have to get used to over time (Charleton).

<u>Military Applications</u>

Robots

Though we have seen the convenience of these robotic friends in our lives and around the house, their technology has also been put to work in dangerous situations. iRobot, leading manufacturer in the field of combat robotics has recently developed an all-terrain remote-operated robot used by the military to conduct surveillance, perform checkpoints and inspections, and even dispose of bombs (iRobot Co.). Not limited to combat situations, robots were and are currently used in space explorations. More notably, it is only through the lenses and sensors of

such exploratory robots that humanity has been able to see the surface of planets, such as Mars, which maintain conditions too extreme for a successful manned mission with Today's technology.

Weapons

Though many weapons, from killer robots to the atomic bomb, were initially developed because of science fiction, perhaps one of the most recent projects can be seen in the form of an anti-aircraft laser. Journalist Austin Carr reflected that "the idea of shooting photons may feel like something out of Star Wars (the Phalanx, [the U.S. Navy's anti-missile defense system into which this technology is being integrated,] is actually nicknamed "R2-D2"), but it's actually a concept that dates back to 1950s, when scientists first thought to use lasers as weapons." In reality, the concept of laser weapons actually predates the invention of the laser itself. According to writer David Hambling, Arthur C. Clark foresaw a particle beam weapon in his 1955 novel, Earthlight when the laser was not invented until the 1960s. In describing Earthlight, Hambling states that it "climaxes in battle between a lunar fortress and three attacking spacecraft. At the height of the battle the defending commander unleashes "The Stiletto", which resembles "a solid bar of light" and pierces one spacecraft 'as an entomologist pierces a butterfly with a pin'" (par. 2).

Little Known or Understood Realities

Teleportation

Though teleportation has not yet been developed to the point of sending a person from one place to another, scientist have been successful in the teleportation of "quantum information."

When describing this phenomenon, writer Casey Johnston states that:

> Quantum teleportation involves entangling two things, like photons or ions, so their states are dependent on one another and each can be affected by the measurement of the other's state. When one of the items is sent a distance away, entanglement ensures that changing the state of one causes the other to change as well, allowing the teleportation of quantum information, if not matter. However, the distance particles can be from each other has been limited so far to a number of meters. (par. 2)

This distance was recently expanded, however, when scientists were able to achieve "quantum teleportation" over a ten mile distance (Johnston). While this achievement is incredibly substantial, it is a far cry away from sending matter over such distances and having it reconstituted correctly at the receiving end. For now, the advanced nature of this technology is still limited to futuristic stories such as Star Trek.

Cloning/ DNA Manipulation

Though many may think that the concept of cloning is a piece of science fiction and should remain safely within its pages, cloning as a precise genetic copy of a complicated structure is already in use today. According to author Martha Craven Nussbaum, genetically identical copies of whole organisms are commonplace in the plant breeding world (29). Such practices are often used to sustain and reproduce entire crops from the first original plant. Many readers were faced with both the wonders and implications of such technology in the beginning of the 21st century when the first cloned animal, Dolly the sheep, was publicly introduced. And

yet, according to Dr. Bill Pomidor, the initial breakthrough technique used for jump-starting cell division in the clone—application of electrical current—was the process that Dr Frankenstein (1823) used to bring his creature to life" (par. 4).

Exploring Technology's Consequences

Speculative fiction has had many important benefits including it is influence on modern technological development. Another major benefit of speculative fiction that may not be as apparent, is that of as a serving as warning against irresponsible technological progress. Many great authors have created works of fiction that explore the dangers consequences of uncontrolled, irresponsible technological growth. In exploring these consequences these authors help us progress with caution. Although many powerful works serve as this warning voice, two major works standout. These works of literature are Mary Shelley's classic novel Frankenstein, and Ray Bradbury's Fahrenheit 451. Despite various interpretations and differing plots are unified by the same warning voice against man's technological irresponsibility.

Mary Shelley's Frankenstein

Shelley's most influential work

The first major literary example was written even before the rapid technological progress that would follow at the time the book was published. This groundbreaking work would essentially come to define her as a writer. Although she published other works, Frankenstein has remained her most popular. This story of Dr. Frankenstein's creation of a terrible monster is far more than a simple horror story. Its complexity has spawned countless reinterpretations of the

work. Despite this, one still finds that the story embodies a strong warning. It is a warning that is apparent both in the story and in the author's creation of it.

Mysterious fears of our nature

Even in the creation of Frankenstein in 1816, one finds contemplation of the consequences misguided technological progress. Frankenstein was originally conceived as a ghost story, in a response to a challenge from Lord Byron a good friend and Shelley. As she attempted to contemplate an idea for a horror story; she wanted to find something that embodied the "mysterious fears of our nature and awaken thrilling horror." (Shelley 4) It would be in overhearing a discussion between her husband and Lord Byron that she receive the inspiration she needed. This inspiration came from the topic of how life is formed or in her word, "the nature of the principle of life." (Shelley 4) In considering this topic, she recognizes a fundamental fear of "mocking the stupendous mechanism of the Creator of the world."

Working from this fear one finds a warning voice apparent against "mocking" this "stupendous mechanism." (Shelley 6) Shelley never once says that the discovery of this "mechanism" is wrong, but the "mocking of it" which could imply the misuse thereof. Also the fear does not appear to be in the mockery either, but in the consequences thereof. Shelley appears to be preoccupied most with consequences that would result from such a "mocking…of the Creator of the world." It these considerations in the creation of this novel that seem to create a voice of caution throughout the story of Dr. Frankenstein.

Examples from the novel

As the book "Why Things Bite Back" explains the story actually serves to describe "…a revenge of nature against practitioners of a technology they don't fully understand" (Tenner 14).

Dr. Frankenstein as a character know no bounds, in the book he is described as "passionate" and that passion drives him to discover the source of life itself. (Shelley 63) The novel seems to place the blame more on Victor's passion for greatness, which overrides his ability to perceive the consequences of his actions. It is also interesting that throughout the entire story Victor avoid taking responsibility for his creation. He even abandons it moments after it is created, after seeing the unintended result of his actions. (Shelley 70) It is this irresponsibility that then leads to even more unintended results, including ultimately the his own death and that of his entire family.

Ray Bradbury's Fahrenheit 451

A dark vision of the future

Fahrenheit 451 is another classic novel that serves as a warning voice to the misuse of technology. It was one of the only two novels Bradbury ever wrote. For those unfamiliar with the novel, it is about a "fireman" in the future who is responsible for setting fire to books. Over the course of this novel the fireman begins to illegally read books and becomes a fugitive. The book traces his evolution from a mindless part of a totalitarian society addicted to technology to a free thinker that appreciates literature. It is through the intended message of the author and the journey of the protagonist that one discovers a warning against the misuse of technology, particularly television.

A warning against Television

With all the dissection and interpretation of this novel, it was generally believed that the book involved government censorship. Although this idea is presented in the book it is not the focus of the novel. The author confirmed this fact in his later years that this work, "…is a story

about how television destroys interest in reading literature." (Johnston) Again in an online video interview he claims that he feared that people would limit an individual's ability to think for themselves. (Collins) From these quotes it is evident that the author was less worried about politics, and much more worried about the impact of a particular technology on society. Specific examples in the novel make this idea quite evident.

Powerful examples of the abuse of technology run rampant throughout this novel. Even fire, which is a technology that is this day is taken for granted, is abused by this future society. A quote illustrates this idea:

What is fire? It's a mystery. Scientists give us gobbledy gook and friction and molecules. But they don't really know. Its real beauty is that it destroys responsibility and consequences. (Bloom 32)

This statement pretty much embodies almost the whole idea of the novel. Without really understanding fire or its actual purpose it becomes a vehicle for escaping responsibility and consequence. This belief seems to lie underneath the use of technology in the entire novel. All of the inventions and technologies introduced in the novel are used to escape or distort reality. The novel does not ignore the consequences of this escapist use of technology.

In fact, as the story progresses the consequences of using technology in such a way become apparent. One sees it in the large number of pill overdoses including the protagonist's wife. (Bradbury 28) It is also visible in a sequence in which Montag is nearly killed by a group of teenagers that deliberately try to run him over. These instances demonstrate how the misuse and addiction to technology has created a disregard for life. This all culminates in the city's

destruction by nuclear attack. With just these few examples one finds a strong warning voice demonstrating the terrible consequences of the irresponsibility I in the use of technology.

A unifying theme in both works

Many striking similarities exist between both novels, in their emphasis on the consequences of technological misuse. Each one emphasizes the misuse of a particular technology in Frankenstein it is the creation of life; Fahrenheit 451 demonstrates this with television. Neither work speaks for or against the development of such technologies. Yet, both novels strongly emphasize the terrible consequences of such misuse, often having tragic results. The protagonist loses his family and an entire city is destroyed in Fahrenheit by technology; just as Frankenstein's creation of a monster leads to his own death and that of his family. It is apparent in both works of fiction that development of technology comes with a responsibility one cannot ignore. Ignoring this responsibility only leads to terrible tragedy.

Speculative fiction serves an important purpose our pursuit of technological progress. It opens our minds and allows us to explore vast possibilities uninhibited. Such fiction has greatly influenced our actual progress in being the birth place of some of humanity's more useful inventions. In addition to these benefits comes one that may not often be recognized. That is that speculative fiction can also warn us of the consequences our action. It can remind us of the danger of irresponsibility with regards to technological progress. On the whole such fiction is essential as humanity progresses into the future.

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