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Where No Man Has Gone Before: How Star Trek Inspired the Future

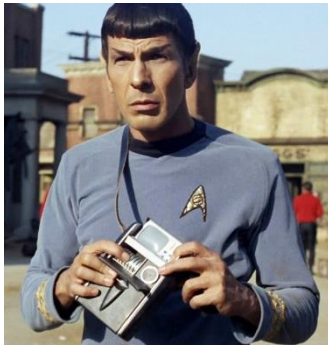
*“It isn’t all over; everything has not been invented; the human adventure is just beginning.”*

*-Gene Roddenberry, Creator of Star Trek*

Transport yourself back in time. The Space Race is on and humans are desperately trying to get to the moon. It is also the height of the Cold War, the Civil Rights Movement, and the British Invasion of the Beatles. The year is 1966, and on September 8, *Star Trek* airs for the first time to audiences nationwide. It is a pivotal point in the development in technologies. *Star Trek* changed the way we live by showing us what could be possible. *Star Trek* altered the course of the future of humanity by inspiring a generation to invent new communications and information technologies and to improve existing ones.

In order to understand the full impact *Star Trek* had on society and technology, one first has to examine the national mood. When *Star Trek* first aired, the United States was experiencing a technological identity crisis. Invention of new technologies was the backbone of what made the United States a global power to be reckoned with. The 1950s were a time of technological optimism, the belief that technology could save people from all of their woes (Diana 2016). But as the twentieth century crept forward and civil unrest grew, people began to see that technology could not fix everything. A feeling of technological pessimism began to permeate the populace and people began to believe that maybe their trust in technology was misplaced (Diana 2016). It

was in this collective mood that people were introduced to the future technological utopia presented in *Star Trek*. In the *Star Trek* universe humans had achieved world peace. There was no more poverty, hunger, or discrimination, and the crew of the *Enterprise* was able to achieve this and much more through the use of an astounding array of fantastic and impossible gadgets (Judd). It made a profound impact on a people who doubted there would be a future at all, let alone a peaceful one (Judd).



From the moment of its premier, *Star Trek* introduced people to imaginary technologies that they could only dream of. Audiences saw the crew interacting with a massive super computer using just their voice. Dr. McCoy was able to diagnose illness with the help of a tricorder and treat it with a hypospray. Data storage could be achieved on tiny cards and accessed on a PADD (Personal Access Display Device). The crew was able to communicate with each other over vast distances using a flip communicator (Reagin 2013). Even more preposterous were the ideas of replicators making food appear out of thin air, transporters making people disappear and reappear thousands of miles away, and faster than light travel (*Star Trek: Exploring New Worlds*). This, of course, is the prerogative of science fiction—what it portrays doesn't have to be real, logical, or even possible (Clegg 2015). However, it asked the big question: *what if?*

Even though *Star Trek* dealt with a variety of heavy issues like war, racism, and social equality, it was hugely popular with a younger demographic. Ironically for such an influential show, the main series was cancelled after three seasons, citing low ratings (Gerrold et al 2016).

This is hardly surprising, since its time slots were often after its biggest fans were already in bed! However, the show gained a huge amount of popularity in syndication after it had been taken off the air (Gerrold et al 2016). During the 1970s kids could come home from school and watch the crew of the *Enterprise* win the day before dinner. The show also had a short stint as a cartoon series, running 22 episodes before it too was cancelled (*Star Trek: Exploring New Worlds*). Networks just didn't seem to care about catering to children, since children are typically not societies major consumers and they had little say in how the family money was spent (Gerrold et al 2016).

There are things that young children are interested in, and one of them is toys. During the 1970s, the toy company Mego produced *Star Trek* toys so kids could pretend that they were Kirk, Spock, and McCoy in their own back yards, solving problems with science and technology. Take for example an ad for the Mego *Star Trek* Tricorder (with built in microphone and mini readout screen!) (YouTube 2007). In the ad, young boys are sold the idea of going on an intergalactic

adventure and are even encouraged to record their own adventures. Mego also put out a few different versions of the *Star Trek* Communicator. In one commercial, the communicator is actually a pretty cool walkie-talkie (YouTube 2008). Two young boys wish to play together on



their bikes, but one boy needs help because his bike is broken. But how will the other boy find him? Well, the *Star Trek* Communicators have the ability to make a loud sound, so the boys can find one another. They even had a range of 1300 feet, which is fairly impressive for a 1960s toy walkie-talkie. In later years, Mego streamlined the communicator into a style able to be worn on the wrist, and the ad for that product featured older boys (YouTube 2006), showing that *Star Trek*



had an appeal that lasted through time. Meگو had an impressive array of toys for young *Trek* fans, including action figures, play sets, and even a Command Communications Console (with telescreen and warp drive sound!) (YouTube 2006). Children (okay, boys) were encouraged to play with these toys, and by doing so they were instilled with a deep interest in science, technology, and the idea of *what if?*

Advertising is a powerful tool, and it definitely helped to ingrain *Star Trek* into the fabric of American popular culture (*Star Trek: Exploring New Worlds*). This generation wasn't only exposed to advertising through toys. It was on their food as well, in the case of an ad from Kellogg's Sugar Smacks from the late 1960s. It pictures a large portrait of Mr. Spock and proclaims, "space energy comes from sugar smacks." There were even collectible badges of *Star Trek* characters in every box. The messaging of the box is clear: Mr. Spock made science cool, and if you want to be like him you will eat sugar smacks. RCA ads for color televisions and the RCA VideoDisc prominently featured *Star Trek* as a means to sell their product (*Star Trek: Exploring New Worlds*). Even later, commercials for MCI telephone plans (YouTube 2009) and Edmonton Telephones pagers (YouTube 2011) used the *Star Trek* cast members to tell their audience to be a part of the future and buy their products. All of these advertisements capitalized on the idea of science fiction becoming reality, ideas



that sparked the imagination of the generations who saw it as a step towards answering that big question of *what if?*

Many notable figures openly admit to being *Trek* fans, such as Bill Gates, Stephen Hawking, Isaac Asimov, and countless members of NASA (Alikhan 2018). A 2017 article for *TechRepublic* tells of personal experiences of high powered tech leaders being inspired by *Star Trek* as children. Bill Coughlin, the CEO of Ford Global Technologies remembers, “Every week, you could go where no one has gone before and visualize how technology could transform everyone’s way of life for the better... I later became an electrical engineer, and yes, I’m still a fan (Maddox 2017).” Jeff Jenkins, the CTO and co-founder of Upskill states, “*Star Trek* absolutely inspired me to enter the tech field, specifically computer science...It gets difficult to keep track of all the tech that this TV series predicted (Maddox 2017).” Even back in 1991, Sunny Bains writes about her experiences of being inspired by *Star Trek* as a woman in the journal *New Scientist*. “When I was a little girl, I watched *Star Trek* regularly and Mr. Spock was my hero. He was...more than anything else, a nerd...Nerds could be cool, and right, and win out in the end...maybe even girl nerds (Bains 1991).”

All these testimonies of engineers and scientists being inspired by *Star Trek* are wonderful, but what does the deliverable proof look like? Let’s examine some of the real-life technology that was inspired by the *Star Trek* Universe.

The most ubiquitous technology that emerged from *Star Trek*, it must be acknowledged, is the cellular phone. When *Star Trek* aired in the 1960s, most communications were done through cords that tethered a person to one place. In order to get in touch with someone, you had to know where they were (Gerrold et al 2016). Appearing in the first ever episode of *Star Trek* was the flip communicator, a handheld device that needed no wires or chords, and could fit in the palm of your

hand. Using advanced radio waves, the crew of the *Enterprise* was able to communicate with one another over thousands of miles clearly and effectively, even if they didn't know each other's exact location (*Star Trek: Exploring New Worlds*). In 1996, Motorola released the StarTAC flip phone. Before this cell phone, the models that were put out were clunky, ugly, and impractical for their purpose. When the StarTAC phone was introduced, it was the first clamshell flip phone to ever be



made in addition to being the smallest, lightest cell phone in the world (Baugley 2013). One simply has to look at the StarTAC phone to see the not-so-slight resemblance to the original *Star Trek* communicator. It is truly uncanny.

Cellular phones have now evolved past being mere communications devices. We use them as data access devices, cameras, and personal assistants capable of interacting with our voice commands, similar to the computers on the *Enterprise*. The introduction of Apple's Siri in 2011 was a major step towards the interaction humans had with computers in *Star Trek* (Looi 2016). Major tech companies are all now vying to win the top spot in voice interaction software and experience, such as Amazon's Alexa and Microsoft's Cortana. Tablet devices are also coincidentally similar to the electronic clipboards and PADDs seen used in *Star Trek*. PADDs had



touch screen capability, could store huge amounts of data, and could connect to the ship's computer wirelessly. We see this technology directly mirrored in the iPad (Reagin 2013). Communications

technology has also grown greatly in the use of Bluetooth, as would have first been seen used by Lieutenant Uhura, the communications officer. Her wireless headpiece was directly connected to the ship's computer for the purpose of translation (*Star Trek: Exploring New Worlds*).

Speaking of translation, the universal translator is a technology that was also first seen on *Star Trek*. In the show, all person had to do was speak into a device and it would translate into English (Briggs 2009). The recent breakthroughs of voice recognition software have made this technology possible, though the languages must be predetermined before use. Google Translate has a technology that is able to translate conversations as they happen on the screen of a phone. Microsoft also recently introduced Skype Translator, which will allow for translation in teleconferencing in real time (Looi 2016). The idea of telepresence, too, was first seen on the *Enterprise*. In 1966, the idea of being able to speak with someone across the globe and see their face on a screen in real time was preposterous (Briggs 2009). Today, however, this is something that is easily accomplished using Skype, Face Time, Zoom, and other teleconferencing technologies. The idea of telepresence has begun to move further, combining audio, video, and ambient lighting and other conditions to make people feel that they are actually present (Briggs 2009).

One of the most surprising developments to be made from *Star Trek* was the making of transparent aluminum. transparent aluminum was first mentioned in *Star Trek IV: The Voyage Home* in 1986. In the film, Chief Engineer Montgomery Scott needs to construct a holding tank for two Humpback whales that the crew needs to bring with them to the 23<sup>rd</sup> century to save Earth from destruction. In order to get the materials he needs to build the tank, Scotty trades the formula for transparent aluminum to the manager of a plexiglass company, which would have been a huge technological advancement for the 1980s (and possibly a breach of the Prime Directive). According to Scotty, one-inch thick transparent aluminum can replace six-inch thick plexiglass (*Star Trek IV: The Voyage Home* 1986). Currently, there has been a compound created known as aluminum oxynitride (ALON) that, once processed, looks like glass and is also bulletproof. ALON



is also lighter than bulletproof glass, and the U.S. Air Force is hoping to be able to replace the windows in its aircraft using it (Briggs 2009).

There are also some *Trek* gadgets that we may not have perfected, but we are striving towards nevertheless. One of those vital technologies is the Tricorder. In *Star Trek*, crew members could use this handy little device to scan their immediate surroundings to detect various things about their environment, such as the chemical composition of the air and soil. Medical tricorders could be used to scan a person for diseases or to check vital signs (*Star Trek: Exploring New Worlds*). This idea was intriguing to NASA, who have been able to develop a device called LOCAD, which can scan the International Space Station for organisms like E.coli, Salmonella, and fungus (Briggs 2009). Though this is an excellent step to the realization of the *Star Trek* tricorder, some companies are pushing the innovation even farther. Qualcomm is currently holding an XPRIZE competition to see if anyone can create a portable device that can see vital signs and diagnose 12 diseases (*Star Trek: Exploring New Worlds*)!



*Star Trek* is so thoroughly ingrained into the fabric of current society that just the mention of the name calls to mind visions of Mr. Spock being logical while Captain Kirk seduces green women. It is intricately woven into our daily lives through fashion, music, and the technology we take for granted on a daily basis. To many, *Star Trek* is a frame of mind; there is even a tech company in China, Netdragon Websoft, that





designed their headquarters to resemble the *Enterprise* to inspire their workers to live with Star Trek's ideals and spirit (*Star Trek: Exploring New Worlds*).

Though many think that *Star Trek* predicted the technologies of our future, in truth, it really did not. What *Star Trek* did do was to get a generation of kids interested in science and technology to take their future more like the happy, peaceful, prosperous one they saw on the show. As said by Brian Clegg in the book Ten Billion Tomorrows, "It is not that [Science Fiction] managed to predict the future, but that it was an inspiration to those who have made the future happen, both in terms of encouraging positive discoveries and warning about potential disasters." The children of the *Star Trek* generation grew up in a world where they were in constant fear of Mutually Assured Destruction, though with *Star Trek* they saw a world in which technological determinism meant the end of war, poverty, and racism. This positive view stimulated scientists to push the envelope, to boldly go where no man has gone before, and to really see *what if?*

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