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Dear Professor Belli,

I learned a lot throughout the process of this research project. Not because of all the research done, but in the sense of actually putting time and effort into the writing. I first began with the idea of exotic weapons as the first choice as a proposal, but I found out later on that what interested me the most is the weapons in general. So when I finally got this research topic approved, I began researching about several weapons that are very common within the works of Science Fiction. In addition, at one point during the research process, I found a Science Fiction sub-genre that definitely helped keep my thoughts very much focused on one particular aspect. Which are parallels between Science Fiction and real-world military weapons.

The drafting and writing process was a very extensive, yet confusing one. First of all, there were many sources to choose from and it was very difficult to drop some of the other sources I had nonetheless. Once I did finish the first draft it was a tremendous relief, as I had all of my thoughts put into the form of a draft. The way how I had the claims and the supporting details were very informative, as I used details from sources that were rich with information. The revising process led me to include more information in terms of moral values that are discussed with weapons. Not only are ethical issues a problem that revolve around weapons all of the time, but they are also one of the most discussed topics today. So I just had to include some of my thoughts about that in my essay.

I definitely struggled the most with getting my ideas organized and jotted down in the form of a proposal. There was just something about the proposal writing process that made me so confused. After a few drafts of the proposal I finally understood how topics are arranged. They have to be focused, in the sense that a topic must be discussed and thoroughly researched in order to progress with the drafting process. It isn't something that just comes to mind when you wake up in the morning. I remember sitting down for multiple hours just reading articles, after articles that discuss weapons of Science Fiction and real-world implementations. Overall, this was a great learning process in terms of research.

The workshops, reviews and conferences helped tremendously during the writing process. I was able to get a glimpse of other people's ideas and how they formed the structuring of their ideas. This I found to be very beneficial in improving my ways of writing out the Write-Up draft.

As a writer I developed a lot throughout this research project. I learned to be careful with the way how I structured my writing and I also learned how to be concise with the definitions of key terms within my writing. However, for certain key terms such as, Military Science Fiction for example; I just could not be concise, I had to fully define the term as it is not a very common sub-genre of Science Fiction. Weapons of Science Fiction in general is not a very common topic to go about, but I managed to find a sufficient amount of info to work with.

What I believe went well throughout the drafting process is my incorporation of sources. Namely, the source that I added in right after some of my analysis in order to further back up the points that I made. In addition, I was also able to add in a source that helped define one of the major key terms that I evidently used throughout this Write-Up.

What I believe didn't go so well with this Write-Up, and this was also brought up within the workshops, is my balance of ideas that are portrayed within my writing. Essentially, I should have balanced the Offensive and Defensive prowess presented with the weapons discussed. Ultimately, this Write-Up represents a lot of effort and research within one piece of writing.

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Final Project Write-Up – Final Draft

Professor Belli

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### The Parallels between Military Science Fiction and the U.S. Military Weapons

There are many parallels that are presented between weapons of Science Fiction and real-world military weapons. The discussion on these parallels and how they are implemented by the U.S. military, exemplifies how they benefit them in terms of advanced offensive weaponry or defenses. The Science Fiction sub-genre, Military Science Fiction, exposes many examples in terms as to how Science Fiction works influence the production and research of military weaponry. Military Science Fiction is essentially about the military, which coincidentally involves battles that include the military, and they usually revolve around a futuristic scenery. However, "... it can also be a hard hitting commentary on current events and politics" (Cipera). Most of the influence is drawn from films, where the exposure of a strange (out of the ordinary) weapon can appear implementable by weapon engineers. These influences revolve around the idea of developing super soldiers, manufacturing laser rifles, auto-piloted aircrafts, and Death Rays, most of which are more likely to be found in Science Fiction films. The design process is then applied, which will determine the compatibility of the weapon researched and its capabilities. What normally disrupts the production of a weapon, is whether the weapon can cause permanent harm towards targets or if they are just catastrophic in terms of lethality. Usually, the discussion of moral values is brought up when a new weapon is being developed or manufactured. Taking this into account determines whether or not a weapon is safe for human

use or if they are to be manufactured as lethal or non-lethal. With all of this taken into consideration; how can the U.S. military possibly benefit from these parallels?

One parallel that the U.S. military benefits from Military Science Fiction works, is the idea of developing Super Soldiers and how their enhanced human capabilities can be a menace to any opponent. The production of super soldiers is a current work in progress, and they are generally human soldiers that are able to perform beyond the capabilities of any regular soldier. This idea is often seen in works of Military Science Fiction, namely the film, *Universal Soldiers*, where dead soldiers were revived and brainwashed to obey the command of their creator and they resembled that of a human with incredible capabilities. In other words, these soldiers are stronger, faster, smarter, and by no means empathetic. In real-world applications, the process for the production of super soldiers by the Defense Advanced Research Projects Agency (DARPA), will allow soldiers to keep their initial state-of-mind, but they will be physically enhanced. This is closely tied with the idea of “enhanced human operations,” where the phrase refers to any sort of biologically altered soldier with capabilities superior to a normal person” (Knefel). Furthermore, there is also a method of implementing a “forced” short-term memory loss chip; which is to be implanted into these soldiers whenever they experience any form of traumatic event. However, this method of memory loss is by no means ethical. As a matter of fact, super soldiers would benefit more from keeping their memories in contrast to losing them. Despite the memories being traumatic, these soldiers will be able to learn from them and not commit the same error twice. Therefore, these soldiers will be very beneficial in terms of offensive power for the U.S. military. In addition, they will undoubtedly prove to be a menace to their enemies due to their superior capabilities but are lacking relative to moral values where memory loss is actually being considered as a cure for trauma.

An instance of moral values is seen with the production of laser rifles that are often seen in films such as Star Wars, which exemplifies their level of harm, and how their destructive power is limited in real-world applications. Undoubtedly one of the most popular types of weapons in Military Science Fiction films, the laser rifle has been created by weapon engineers for the U.S. military. As mentioned, a film that demonstrates the potential of laser rifles, would be the film Star Wars. The rifles from the film are used in order to kill any opponent that came into contact with the shots fired. The rifle within the film is obviously too powerful, so the potential of the weapon would have to be heavily diminished in order to fit with moral standards. In order to create the weapon using real-world applications, limitations would have to be applied. Initially, the rifle was made to cause permanent harm, due to its permanent blinding effects towards targets. As a result of this, “The U.S. government has unveiled a “non-lethal” laser rifle designed to dazzle enemy personnel without causing them permanent harm” (Knight). In other words, in order to correspond with moral standards, the laser rifles are left with a non-permanent blinding effect that is safe for both the user and the target. Ultimately, these rifles were able to keep their strange appearance and they will benefit the U.S. military because of their element of surprise. Though non-lethal, this rifle will tend to be formidable because opposing threats will be unaware of the effects from such a strange weapon.

Some of the most influential advancements made by the military due to Military Science Fiction would be the future production of the U.S. Air Force aircrafts, and how their offensive and defensive prowess can be derived from these advancements. Most of the future models that have been revealed to be released, often possess similarities to some of the aircrafts seen in Science Fiction films. For instance, in the film Star Wars, there is a type of aircraft named the “Republic Attack Cruiser” and a particular future model from the U.S. Air Force blackbird,

namely the “Lockheed SR-72” (Military Factory), that have many similarities in terms of structure. Unlike the attack cruiser, the Lockheed model does not require a pilot, which opens up an entire realm of possibilities. As a matter of fact, engineers will now be able to focus more on certain aspects about the effectiveness of this aircraft and not worry about the safety of a passenger. In other words, this model will be able to travel at velocities and altitudes that no human can physically hope to survive. Ultimately, the U.S. military will benefit from this model tremendously as it can get to and from its destination in an unbelievable time (Military Factory). Not to mention that opponents that attempt to decommission the aircraft will inevitably fail due to the speed that this aircraft travels. In addition, future models, in general will continue to improve dramatically as newer modifications are discovered through the influence of Military Science Fiction works.

One of the most questionable aspects of these parallels would be the production of weapons that came from Science Fiction works by the military, such as the Taser and stun rods, but they are not being used. These weapons, in particular, are by all means non-lethal, in the sense that these weapons do not pose a threat towards any target. In addition, they are created in bunches; “There was the “pain ray,” designed to force people to move by aiming agonizing millimeter waves at them. There were electroshock weapons such as the Taser, purchased to incapacitate people at close ranges without shooting them” (Lamothe). Ultimately, these non-lethal weapons are portrayed as useless to the military. High-ranking military men find these weapons to be strange and unnecessary when in actuality, they don’t have the slightest idea on how to use them. In the sense that they are too complex to use. For instance, the “pain ray,” which functionality and appearance resemble weapons from Science Fiction films, are designed to launch waves that can cause targets to “feel” the eruption of pain coursing through their

bodies. This weapon can evidently benefit the military in terms of offense if they are used correctly. However, since there is no form of training to use this weapon in particular, then it is obvious why the U.S. military deemed them unnecessary. As a result to this, the weapon engineers' efforts are put to complete waste since these weapons are not going to be used. In terms of moral standards, these weapons fit the criteria, but some soldiers would rather use lethal, standard weapons instead of weapons of the future.

Another instance of a weapon that is being produced due to the influence of Military Science Fiction works is the "Death Ray," and this weapon demonstrates some of the defectiveness that real-world applications have on weapons from Science Fiction. The "Death Ray" is another popular weapon that is normally seen or introduced by a villain within Science Fiction films. Initially, the ray supposedly allows the user to destroy anything that is living. So in terms of lethality and moral standards, this weapon is breaking scales on "typical" deadly weapon terms. The functionality of this weapon can be visualized as the concentration of energy and after some duration of time, that energy is to be released in a single high-powered beam. On the other hand, real-world applications of the weapon weakened it tremendously. The U.S. Navy, in particular, took an interest in the implementation of a "'Death Ray' for drones" (Hodge). The purpose for this weapon is for the sake of defenses. The Navy wants to have drones to be shot down from the sky for the sake of their safety. "Laser beams can lose strength as they move through the moist, salty sea atmosphere above the sea, so the Navy needs directed-energy weapons that can work effectively on ships" (Hodge). For instance, while visualizing the physical aspects of the weapon, energy is said to fade away the further it travels. Taking this into consideration, the "Death Ray" can only do damage at close-range, which is not optimal in terms of defenses due to the lack of protection at longer distances. Ultimately, the Navy is now able to

produce a more effective ray that can travel at further distances but they are, by no means lethal to humans. A level of interest can be drawn from the fact that a very deadly weapon seen in Military Science Fiction films is rendered weak in the real world, which can be introduced with the idea of limitations.

Limitations are important in the sense that weapon engineers are able to make these implementations of weapons weaker if they are deemed too powerful in the real-world. When weapons are developed due to Military Science Fiction films, the weapon engineers only take into account the appearance of the weapon. Meaning, that the firepower and capabilities of the weapons are controlled later on. Evidently, the military would like to avoid similar catastrophic injuries that were caused by weapons in the past, so weapons of today have to fit ethical standards. In general, weapon engineers go through a series of steps when implementing a new type of weapon. The first step would be to consider whether or not a weapon should be made lethal or non-lethal. Then comes the potential behind the weapon, where there are many non-lethal weapons that can be visualized as powerful (Lamothe). For instance, the "Tasers" are developed with a sort of electroshock cables that latch on to the target. They were not meant to harm the target, so it cannot be declared lethal. However, the Taser is still formidable in terms of power where targets are left paralyzed due to the shock. In addition, most of these limitations are applied by associations that determine the capabilities of a weapon. An instance would be DARPA, where the process of developing super soldiers would come with a way to control them just in case they were to go rogue. As mentioned, with the help of a forced short term memory loss, this limitation can easily be accomplished. Ultimately, the importance of limitations on weapons can be derived from what past wars have defined to spectators the potential that previous weapons possessed, namely the nuclear bomb. It would almost be unethical not to

implement limitations to a weapon after that catastrophic incident, as it could definitely cause an uproar.

Overall, Military Science Fiction works have the most influence in terms of all of the new, strange weapons that the U.S. military has in possession as of today. In addition, popular films such as Star Wars and Universal Soldiers have inspired weapon engineers to implement these weapons using real-world applications. One important aspect to note during the development of weapons, is the capability and the purpose of the weapon. In most cases today, they will be designated as a non-lethal weapon due to a number of associations and researchers that are out there to limit the power of these weapons. Another is the technological advancements which would undoubtedly contribute to unmanned, auto-piloted, aircrafts, and is something that has never been done or implemented. Engineers will no longer have to worry about the safety of a passenger and will find ways to improve the velocity as well as the altitude at which these aircrafts will travel. Lastly, the idea of developing “Super Soldiers.” This idea is the most important inspiration taken from Science Fiction works, which is the attempt to “enhance” a human. Most of it will be experimental nonetheless, where humans will be biologically altered and become super humans. Ultimately, the parallels between weapons seen in Military Science Fiction films and real-world military weapons is no mere coincidence, as the design seen from new weapons and aircrafts developed by the military appear similar. Another important aspect to note, is that limitations are applied to a weapon in order to fit with the moral standards of today’s society. In other words, weapons that are too powerful are declared lethal and vice versa. With that said, these parallels benefit the U.S. military offensively and defensively based on their current development of new weapons. As mentioned, there are several weapons that are already made and proved effective in addition to other ideas of

implementations that are a work in progress. To sum it all up, these parallels have and will continue to benefit the military in the near future.

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