Class I Impossibilities are "technologies that are impossible today, but that do not violate the known laws of physics."

Class III Impossibilities are “technologies that violate the known laws of physics."

**Phasers, Death Stars and Lightsabers**

Many people, everyone apart from sci-fi fans believe that Phasers (Gamma Ray Guns) and Death Stars are impossible, but the fact is that there is no physical limit to the amount of raw energy that can be crammed into a light beam. There is no law of physics preventing the creation of a Death Star, Phasers or Lightsabers. In fact, planet destroying beams of gamma radiation exist in nature. The titanic burst of radiation from a distant gamma ray beam in deep space creates an explosion so powerful, it would be compared second most powerful explosion to the Big Bang. Any planet unlucky enough to be within the beams of a gamma ray will be most likely blown to bits.

There is a way that is possible for Lightsabers to exist in real life. At the base of the Lightsabers handle there would be a a titanium fan, that would suck 100 cubic feet of air into the handle where it would be superheated to a 12000 degree plasma, a telescopic ceramic rod would shoot out of the handle and would be surrounded by an electromagnetic foil. The Lightsaber would be powered by trillions of nanobatteries which would power the plasma generator.

Phasers and Death Stars are both possible for one reason, there is no limit to the amount of raw energy that can be put into a laser beam. The National Ignition Facility in the USA has the most powerful laser in the world, this laser fires a shaped pulse of energy that generates 411 trillion watts of power. This shows just how much energy can be pulsed into one beam of light. This may not seem like a powerful enough laser to destroy a planet like Earth, but according to Theoretical Physicist Michio Kaku, 1000 of these lasers shooting their beams of energy at Earth would be enough to destroy the whole planet.

The problem is with Death Stars and Phasers is that it would be extremely hard to store the amount of energy needed to make these technologies possible in such a small space, because when you think about it, a Phaser can theoretically shoot its way through thick objects like wood and space army suits, how are you meant to get this much energy into a weapon that can be held within your own two hands? Even if you are able to fit enough energy in this weapon for one laser beam, how are you use the weapon after you have used up all its energy? : you need more. So the possibilities of a Phaser shooting a very powerful laser beam is quite possible, but trying to fit enough energy in the weapon for several laser beams to be shot is a bit of a challenge, but all the same not impossible. Also the amount of energy needed to power over 1000 of the most powerful lasers in the world would be extremely hard to store, it would also be very expensive. Professors and Students at the Lehigh University in Pennsylvania calculated the cost of the steel needed to make the Galactic weapon, they calculated that the weapon would cost $852,000,000,000,000,000. Thats 852 quadrillion. dollars. Which is a tonne of money.
UFO’s and Extraterrestrials
We all know that UFO’s are just beings from other planets that we see in sci-fi movies. But what if they were real, it may seem like a quite silly idea, but the possibilities of life on other planets is quite possible. Just ask yourself this question: why couldn't there be life forms on other planets, I mean, there are estimated to be hundreds of millions of galaxies in the universe, with up to hundreds of trillions of stars and planets.

‘Search for Extraterrestrial Intelligence’, is an organisation set up by Dr Jill Tarter, who has a PhD in astronomy. It is an exploratory science that seeks evidence of life in the universe by looking for some sign of Extraterrestrial technology. SETI current understanding of life’s origin on Earth suggests that given a suitable environment and sufficient time, life will develop on other planets, thats not to say that there’s not already other planets out there with intelligent life forms on them, or not so intelligent life forms.

Scientists have reason to believe that there are hundreds of millions of solar systems in each galaxy, this shows that there are great possibilities that there are planets out in the universe that could have the same moderate temperature as Earth. This could mean there are other life forms out in the Universe.
**Interstellar Spacecrafts (Starships)**

Starships may sound like a pretty far fetched idea, but if I told you that NASA funded a research project into the study for revolutionary methods of spacecraft propulsion which would require breakthroughs in physics before it could be possible, would it make you rethink your answer?

This research program ran from 1996 to 2002, during the six years that the program ran for, NASA invested a total amount of 1.2 million dollars. The term breakthrough propulsion refers to concepts like Warp Drive and Faster-Than-Light Travel, the kind of breakthrough that would make interstellar travel possible.

The program's main idea was to seek the ultimate breakthrough in space transportation, like propulsion that requires no propellant mass, propulsion that attains the maximum transit speeds physically possible, and breakthrough methods of energy production to power such devices like Starships. Topics of interest include experiments and theories regarding the coupling of gravity and electromagnetism, vacuum fluctuation energy, warp drives and wormholes, and superluminal quantum effects. New theories and phenomena have emerged in recent scientific literature that have reawakened consideration that such breakthroughs may be achievable. To establish a program to address these visionary possibilities, a "Product Definition Team" of researchers was assembled. This team, led by NASA Lewis Research Center, consisted of 19 individuals from various NASA Centers, other government laboratories, industries, and academia (listed in acknowledgments section). Most team members are part of an existing informal network that had already recognized the potential of the emerging science and had conducted preparatory research on how to apply these prospects to the goal of creating revolutionary propulsion.

Icarus Interstellar is another organisation that is dedicated to technical achievements enabling interstellar spaceflight. Research is performed by volunteer citizen scientists with a wide swath of backgrounds, ranging from NASA, ESA, professional scientists, university professors, students, science fiction writers, artist, thinkers and enthusiasts. Icarus Interstellar has a mission statement which says: "The mission of Icarus Interstellar is to realize interstellar flight before the year 2100. We will accomplish this objective by researching and developing the science and the technologies that will make interstellar flight a reality, igniting the public's interest, and engaging with all those prepared to invest in interstellar exploration."

To make Interstellar Spacecrafts worthwhile, the spacecrafts would need to be able to travel at an extremely fast speed, Faster Than Light. The possibilities of this include Warp Drive which involves the creation of space behind you to push your spacecraft and the destruction of space in front of your spacecraft to suck your spacecraft forwards.
**Perpetual Motion Machines**

Perpetual Motion describes motion that continues indefinitely without any external source of energy. There's only one problem when it comes to perpetual motion, and that's friction. This causes the machine to violate the Laws of Thermodynamics.

In theory there are three types of Perpetual Motion Machines.

- The first type of Perpetual Motion Machine produces work without the input of energy. This violates the first law of thermodynamics, which is the law of conservation of energy.

- The second type of Perpetual Motion Machine is a machine which converts thermal energy into mechanical work. When the thermal energy is equivalent to the work done, it does not violate the law of conservation of energy. However it does violate the law of thermodynamics. The signature of a perpetual motion machine of the second type is that there is only one heat reservoir involved, which is being spontaneously cooled without involving a transfer of heat from a fan. This conversion of heat into useful work, without any side effect, is impossible, according to the second law of thermodynamics.

- The third type of Perpetual Motion Machine is usually defined as one that completely eliminates friction and other needless forces to maintain motion forever. Although it is impossible to make such a machine as uselessness can never be 100% eliminated in a mechanical system, it is nevertheless possible to get very close to this ideal. Such a machine would not serve as a source of energy but would have utility as a perpetual energy storage device.

Epistemic impossibility describes things which absolutely cannot occur within our current formulation of the Laws of Physics. This interpretation of the word "impossible" is what is intended in discussions of the impossibility of perpetual motion in a closed system. That's not to say the Laws of Physics couldn't change over the next few centuries or even millennia, as we are gaining a better knowledge of understanding how everything works and functions.

Some common ideas recur repeatedly in perpetual motion machine designs. Many ideas that continue to appear today were stated as early as 1670 by John Wilkins, Bishop of Chester and an official of the Royal Society. He outlined three potential sources of power for a perpetual motion machine, "Chemical Extractions", "Magnetic Virtues" and "the Natural Affection of Gravity". None of which have been successful, but that's not to say that some of these ideas cannot be slightly changed to work as a fully functional Perpetual Motion Machine. The idea that a machine can be created that generates more energy than it consumes to run forever has been deemed to be scientifically impossible, but who's to say that scientists can't be wrong, I mean, they are just humans after all, and humans are known to make mistakes. So we cannot rule out the chances of someone creating a fully functional Perpetual Motion Machine even if it does mean that we have to wait millions of years before you see it being made possible.

**Precognition (Future Sight)**

Research on precognition ability does not support the idea that this ability is a unique trait. However, it does support the idea that some people have more of this ability, and make better use of it, than others. The person who wishes to avail himself of the ability to use precognition must first understand the nature and form of this phenomenon.

Precognition is a part of the unconscious process. As such, it is not bound by the usual limitations of space and time. When precognition information appears, it can take on varied formats. It can come on while the person is conscious, a form akin to a person talking to himself. It can also come when the person is
asleep in the form of a dream. Sometimes the information comes in a symbolic form. The problem with symbolic information is that it needs to be de-coded, which means the use of the conscious mind, with all of its biases.

The ideal condition for the utilization of precognition information is when it does not require a de-coding or interpretation. The interpretation process, which tends to be logical and rational, can rework the non-logical, but incorrect, information.

An example of getting precognition information is the sudden thought that comes to an automobile driver to take a side road rather than the usual straight and shorter highway. The thought is not heeded, and later on down the highway, the motorist runs into a traffic tie-up.

Conclusion: Nothing is impossible, unless you are too lazy to work hard and believe in what seems to be impossible. He who is open minded will find the answer.

REFERENCES:

- [http://www.icarusinterstellar.org/](http://www.icarusinterstellar.org/) Icarus Interstellar, 2012-2013, Space Programs,