

Science Fiction as Thought Experiments

Does Science Fiction Affect Technology?

We live in a world ripped straight from the pages of science fiction. This begs the question: does art imitate life or does life imitate art? Science fiction is influenced by technological developments, but there is evidence that it goes both ways. Just look at how Jules Verne's conception of the nuclear submarine preceded the invention by nearly a half-century. Or how Asimov both coined and jumpstarted the field of robotics. Science fiction can model the effect of a technology on a world similar to our own, allowing us to experience a broader spectrum of realities.

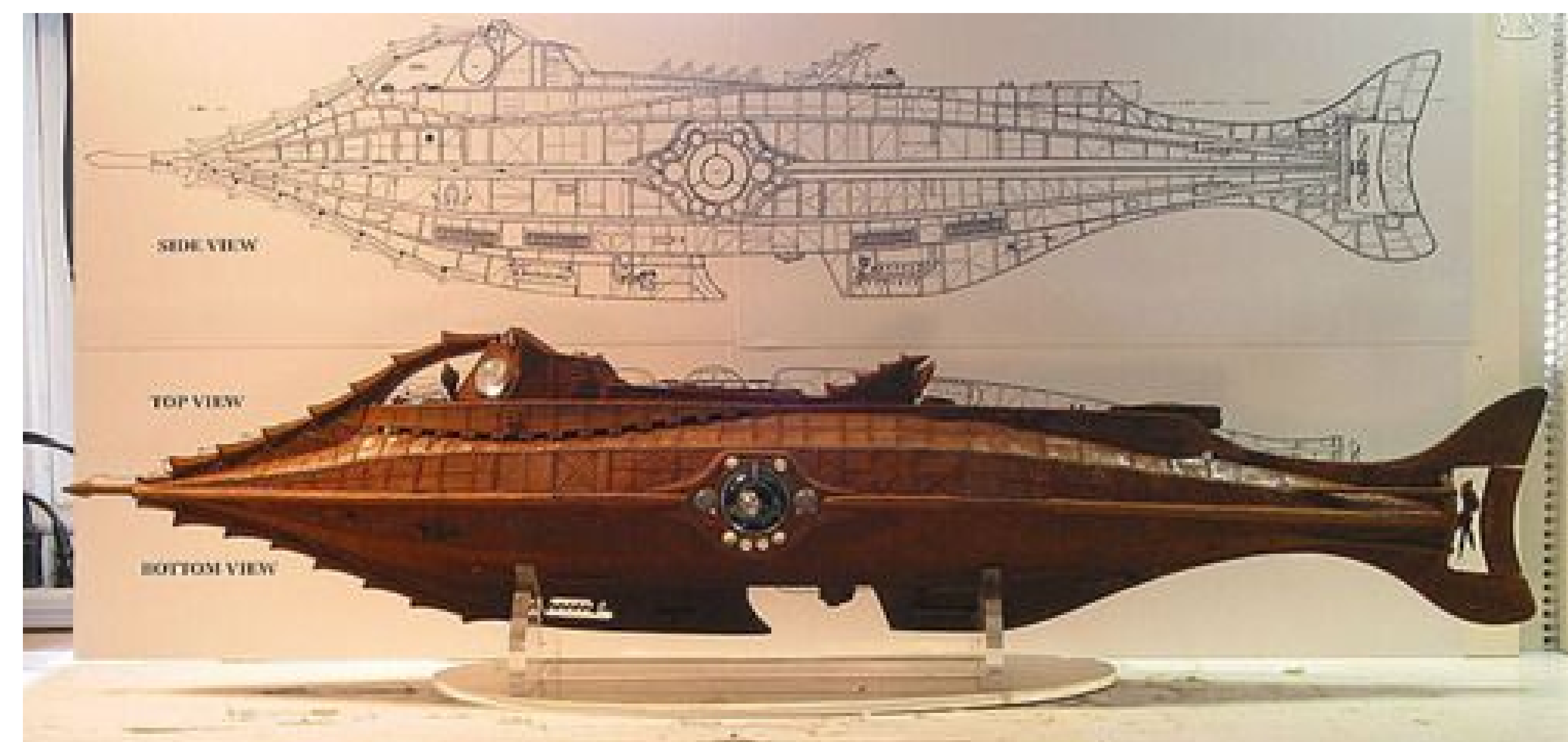


Figure 1. A schematic drawing of the *Nautilus*, Verne's submarine as imagined in *Twenty Thousand Leagues Under the Sea*. Verne's writing was detailed and rigorous enough that a semi-workable submarine is designable from his in-text description.



Figure 2. *Interstellar* was a both a commercial and critical success, owing in part to its scientific realism.

The creative team behind *Interstellar* had input from a team of physicist with the most famous one being Kip Thorne, who is expected to receive a Nobel Prize for his discovery of gravitational waves.

What Are Thought Experiments?

- **Thought Experiments** are **hypotheticals** for the purpose of critically examining a theory.
- **Thought Experiments** are **not empirical**.
- **Thought Experiments** encourage **abstract thinking** by assuming a given truth and then examining the consequences of that assumption.

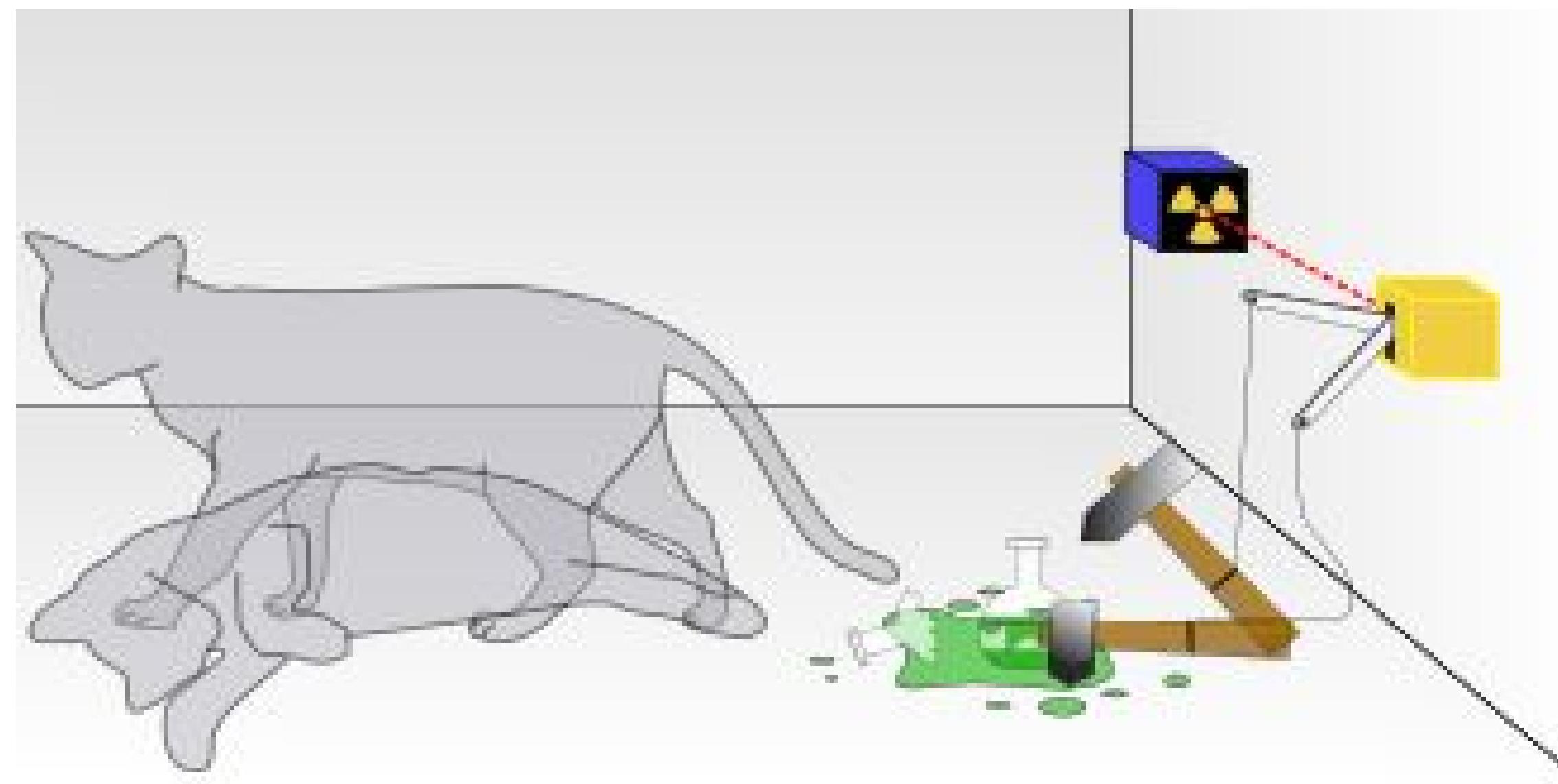


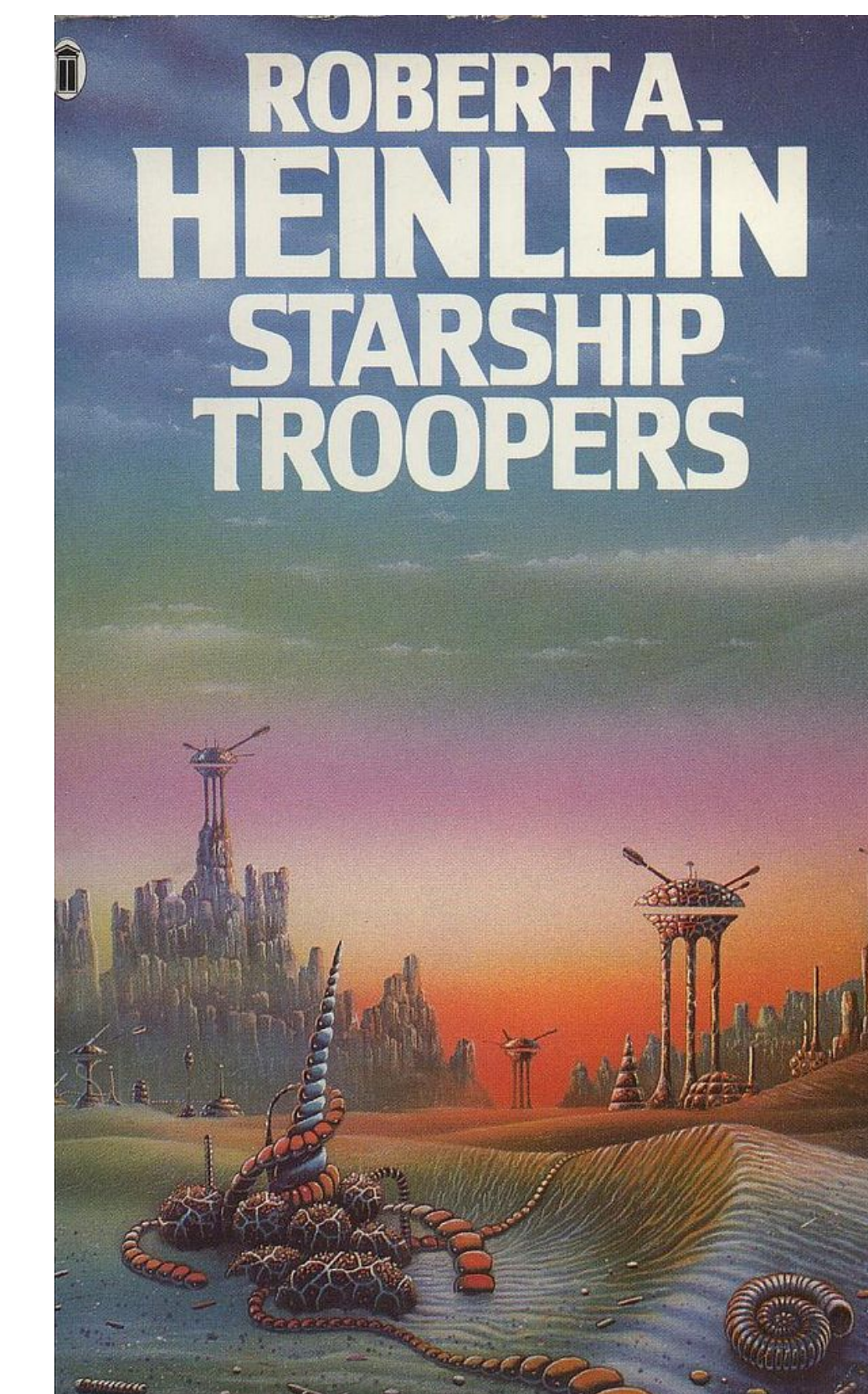
Figure 3. Schrodinger's Cat is one of the most famous thought experiments of all time. It also one of the most misunderstood. It is meant to *disprove* the Copenhagen Interpretation.



Figure 4. *Gattaca* (1997) is a classic science fiction film that functions as a thought experiment about the the possible consequences of genetic engineering.

- **Hypothetical**: Suppose genetic engineering was possible and commercialized.
- **Non-Empirical**: A fictional story centered on imagined characters set in world similar but different from our own.
- **Abstraction**: Uses genetic engineering to tackle ideas like eugenics and social stratification, challenging our notion of universal human equality.

Hard Vs. Soft Science Fiction



Figures 5 and 6. *Stars Wars* and *Starship Troopers* have a lot of aesthetic similarities but differ in their scientific rigour and consistency.

Hard Science Fiction

- Grounded in modern theory and **scientific rigour**.
- Set in a **plausible, logically consistent** world.
- Features a hypothetical technology, called a novum, and dedicates resources to developing that novum.