World Building: Science Fiction Worlds

by Alan Vincent Michaels, R-SPEC Program Officer

Presentation Panel Members

Frank Glover, Alan Vincent Michaels, Lynn Spitz (moderator), and Hugh Sullivan

About the Presentation

In Fantasy Worlds, the first presentation in our World Building series, we explored how to create believable worlds for your fantasy stories. Many of the ideas for building fantasy worlds also apply to the worlds in your science fiction stories, including the world’s physical characteristics, the beings and creatures that inhabit your world, and the components of your world’s societies. The link to the February 2018 presentation handout is included in the Selected Resources section later in this handout.

In Science Fiction Worlds, we discuss specific elements for creating fictional worlds and story settings that are typically grounded in known science with certain aspects extrapolated when necessary. Your successful science fiction settings need to present an overriding sense of place for your characters and your readers – worlds your readers feel they could journey to and possibly inhabit.

You are invited to share with the panelists and audience your world-building ideas and discuss topics ranging from avoiding worn out clichés and tropes to using hard physics and engineering in shaping your worlds. Then, take it to next level by extrapolating from the latest theories and discoveries that might not, yet, be found in school textbooks.

Later, use your notes from the presentation and review the resources listed in this handout to help you develop your imaginary science fiction worlds and settings into places your readers will want to visit again and again.

Building Realistic Science Fiction Settings

As with fantasy worlds, your science fiction worlds are limited only by your imagination. You do not need to be a geologist or a botanist, but make sure to do your research to ensure your story elements are grounded in the rules of known science. Science can often be stranger than science fiction, so begin with established scientific understanding, then see where your story goes from there.

Another element that is often different from fantasy world building is your science fiction story can ask the bigger “What if…?” questions by holding up metaphorical mirrors for your reader to gaze into and for them to ponder what it means to be human.

Building a believable science fiction world sets the stage for everything that comes after, so it is important to create a solid foundation. Let’s get started!
Selected Science Fiction World Scenarios

Since the Golden Age of science fiction and even further back into antiquity, we have encountered worlds from the imaginations of sages, futurists, and speculative fiction authors, poets, and screenwriters too numerous to list or to pay homage to.

Suffice it to say, if you can imagine a world, it is likely to have been portrayed in a poem, short story, novel, television series, or movie before, but the difference will be that it will be your world – borne from your imagination. You will set the stage and consider the myriad possible situations and outcomes, which will differ from anything that has come before.

Consider …

… a small moon circling around a gas giant planet as the setting for your story. Determine its composition and physical characteristics, atmosphere and climate, and the effects of its own gravity and the tidal forces and radiation from the parent planet.

What kind of creatures would inhabit your world and what limits on population size would be needed, if any, as they compete for resources?

… a hollowed-out, fifty-kilometer-long asteroid that you have populated with beings fleeing the demise of their home world. The initial level of civilization need not be that much more advanced than our own, which may be a testament to the ingenuity of a species facing ecological disaster or a climatological change that could not be averted.

What kind of society would evolve as they traverse the gulf of space between the stars, searching for a new planet to call their home?

… a ringed world where the rings are made of satellite and space station debris, exploded rockets and low planetary orbit warheads, and carelessly abandoned garbage, instead of the usual rocks and ice found around most ringed planets.

What kind of civilization would allow a situation like this to happen, and what possible outcomes might there be if such conditions continued?

… the first world being terraformed by a civilization with a long history of moving into new lands and eventually laying waste to the places they invaded.

What possibly could go wrong with such a demanding scientific endeavor that could take centuries or even millennia to complete?

… a highly evolved, space-faring civilization with its planets connected to each other by a multitude of stable wormholes, each providing instantaneous and continuous access to other planets separated by light years of space but without time dilation.

What meaning does a “world” have if its denizens can step from one planet to another as easily as stepping through a door?

Turn the page to see if you guessed which novel or movie was the basis for these scenarios.
Selected Science Fiction Scenarios – Sources

Here are the sources for the scenarios on the previous page. Can you name another source?

1. **Avatar** (movie directed by James Cameron, 2009)

2. **Rendezvous with Rama** (loosely based on the novel by Arthur C. Clarke, 1973)

3. **2001: A Space Odyssey** (novel by Arthur C. Clarke, 1968; a passage in the novel (but not the movie) speculates about Earth having a ring consisting of nuts, bolts, and tools lost during the orbital construction of space vehicles)


5. **Hyperion** (the farcaster devices from the novel by Dan Simmons, 1989)

Building Your Science Fiction World

One way to build your science fiction world is to start with a list of world attributes, such as:

- **Fantasy Worldbuilding Questions: The World**

  Patricia Wrede’s website is a good starting point for your imaginary science fiction world. By working through a group of topics in a methodical manner, the myriad possibilities can be winnowed down to a set of logical topics that become the foundation for your story or novel.

- **Fiction Writing: How to Create a Believable World for Your Characters**
  https://thewritelife.com/worldbuilding

  Tim Hillebrant’s website is another good collection of ideas and topics. In the section “Worldbuilding, step by step,” he outlines seven strategies for creating a world:

  1. **Read about other authors’ worlds.** The tiniest element of another writer’s creating could inspire your world. Take note of how the writer shows, rather than tells, elements of her world.

  2. **Watch and analyze movies.** Worldbuilding isn’t just for books. Try Tombstone, Blade Runner, Waterworld, or How to Train Your Dragon. What did the moviemakers do to make the world come alive? Pay attention to the details that add life and depth to the story.

  3. **Mix and match.** Take two ideas from different places, put them together and add your own twist to create a whole new world.

  4. **Draw a map of your story’s world.** It doesn’t have to be fancy; a quick sketch will do. Add more detail to flesh it out.

  5. **Think about the history of the world.** What kinds of people live there? Are they like you and me? What makes them different?

  6. **Consider what kinds of flora and fauna live in your world.** Are there tame animals? Are there wild, unexplored forests or other landscapes?

  7. **Outline your world’s background.** What kind of technology does your world have? What is the government like – or is there one? What is the culture like? Do its inhabitants have fads and styles?

Certainly, you do not have to imagine every aspect of your world, but you should consider and design enough elements to ensure you have a sturdy framework upon which to hang your story.
Selected Resources

R-SPEC Website

- World Building: Fantasy Worlds (February 2018 meeting handout) by Alan Vincent Michaels

Internet Resources (by Author)

- The Ultimate Guide To World-Building: How To Write Fantasy, Sci-Fi And Real-Life Worlds

- Four Ways to Bring Settings to Life by Moira Allen

- 7 Deadly Sins of Worldbuilding by Charlie Jane Anders

- Setting: The Key to Science Fiction by Bruce Boston
  [http://www.writing-world.com/sf/setting.shtml]

- Location, Location, Location by Jim C. Hines
  [http://www.writing-world.com/fiction/location.shtml]

- Fiction Writing: How to Create a Believable World for Your Characters by Tim Hillebrant
  [https://thewritelife.com/worldbuilding/]

- The Art of Description: Eight Tips to Help You Bring Your Settings to Life by Anne Marble

- Writing Tips: How To Create Immersive Worlds For Science Fiction And Fantasy by Joanna Penn
  [https://www.thecreativepenn.com/2017/06/28/world-building-science-fiction-fantasy/]

- 7 Worldbuilding Tropes Science Fiction and Fantasy needs to Stop using by James Whitbrook
  [https://gizmodo.com/7-worldbuilding-tropes-science-fiction-and-fantasy-need-1659804610]

- Fantasy Worldbuilding Questions by Patricia C. Wrede
  [https://www.sfwa.org/2009/08/fantasy-worldbuilding-questions/]

Writer’s Guides (by Author)


- Space Travel: A writer’s guide to the science of interplanetary and interstellar travel by Ben Bova with Anthony R. Lewis, Writer’s Digest Books (03-01-1997)

- World-Building: A writer’s guide to constructing star systems and life-supporting planets by Stephen L. Gillett (author) and Ben Bova (editor), F+W Media, Inc. (12-01-1996)


- The Planet Construction Kit by Mark Rosenfelder, Yonagu Books (10-09-2010)
