

Fiction as Simulation

By Bradley Jarvis

Stories are means by which people can share experiences through the creation of representative memories, and they have at least two uses: education and entertainment. Education provides a basis for appreciating and changing our physical reality, while entertainment is a way to modify our experience without appreciably changing physical reality. Arguably, the most enduring stories both educate *and* entertain, enabling us to alter the world so it provides the experiences we want.

Physical and social scientists use abstractions such as mathematics to explain how parts of the world work and what we can observe. These abstractions are embodied in theories, which include things that we may not currently be able to observe, and suggest ways reality can change (or might have changed) along with details about the results.

The process of exploring the different versions of reality embodied by a theory is called “simulation.” Simulation can take many forms; in engineering and science, for example, simulations often use computers to generate numbers and graphs. When simulation is encoded in stories, the result is fiction.

Fictional stories, of course, often share experiences that reside purely in an author's mind. These experiences define an imaginary reality that, if fully developed, has its own consistent elements and rules which can be used to create other experiences, much as a theory is used to predict observations. Whether the author draws on personal knowledge or on the predictions of a theory, the outcome is still a work of fiction, but the latter will have an educational component that can yield benefits far beyond the initial exposure to the story.

The author could alternatively choose a theory that itself is fictional, but the process of creating a fictional story using simulation would still be the same. It begins with defining “initial conditions” such as the setting, characters, and rules that govern behavior in the story's artificial “environment” (the theoretical structure that determines observations). The simulation then occurs, with the author acting as a reporter of what unfolds afterwards and focusing on specific characteristics of interest, which requires selecting one or more points of view and using an understanding of the audience to effectively communicate what happens.

For example, my novel “Lights Out” describes a special case of a theory I created to project how the world's population might behave as resources become scarce. The theory consists of a set of mathematical formulae based on key variables I identified in studying the world's consumption of energy and ecological resources, along with a personality-based model of people's pursuit of quality of life.

I had written a short story, which I later included in the novel, that used a much more simplistic model to describe how people on a cruise ship might fare following an event called an electromagnetic pulse (EMP). A reviewer wanted to know what happened to the protagonist after a nasty cliffhanger, and I decided to meld the answer to that question to another nagging question: What happened to his wife, who happened to be stuck on an island in Hawaii?

It turns out an island, like a cruise ship, can be effectively isolated by an EMP, so I mathematically simulated what might happen to the population using various assumptions of

remaining resources, current consumption rates, and other effects of the EMP. Several common themes emerged from the numbers which I decided to focus on in the book, chief among them that most of the casualties would occur very early, and the situation would stabilize with a very low population within a few weeks. The simulation also highlighted a key cause of death: lack of knowledge about what had happened.

I chose characters whose experiences would convey the basic trends I saw in the simulation, shifting from reaction to enlightenment and solutions. The main character, the wife of the protagonist on the cruise ship, was one of a fraction of my simulated population who understood the big picture from the start and could thrive in the crisis while helping others do the same.

As often happens in fiction, the characters took a life of their own in my imagination and the story evolved in a direction I didn't anticipate at the beginning – especially in the second half of the book – making it both entertaining and educational.

For details about my theoretical model, see:

<http://www.bigpicexplorer.com>

For information about “Lights Out,” including how to order a copy, see:

<http://www.bigpicexplorer.com/LightsOut>