

Alternate Realities and Other Worlds



Austrian scientist Erwin Schrödinger (1887-1961)

Cats in Boxes

Erwin Schrödinger was a famous Austrian-born scientist who spent many years living in Dublin. He was a refugee from Nazi Germany and came to Ireland in order to continue his scientific work. One of the many things he did while living in Dublin was found the Dublin Institute for Advanced Studies, which still exists today.

Probably his most famous thought-experiment is one known as **Schrödinger's Cat** – perhaps you've even heard of it! The experiment asks you to imagine a sealed box, with a cat inside it. Also inside the box is a tiny amount of **radioactive** material which, if it's released, will kill the cat. There's no way of knowing for sure whether the radioactive material is being, or has been, released. Therefore, so long as a human observer has no way of looking inside the box, in scientific terms the cat inside it **exists as both a living and a dead animal at the same time** – simply because we have no way of knowing, at any given moment, whether or not it is alive or dead.

The moment we observe the cat (in other words, we open the box), we can see straight away whether it is alive or dead, and the uncertainty **collapses**, which means one of the two possibilities **ceases to exist**; either the cat is alive, or it is not. The situation whereby it can exist, theoretically, in both states at once is no longer possible.

Alternate Worlds

Schrödinger was a physicist, a person who studies the nature of things and how they are made. A lot of his work was in the area of **quantum mechanics**, which studies things on the tiniest scale, looking at atoms and sub-atomic particles. Thinking about these things sometimes brings people to ask: what is reality? What is it made of? How is it put together? Is there one reality, or are there many? One of the branches of quantum mechanics is called the **many-worlds interpretation**, which postulates that all possible outcomes in any given scenario can and do exist somewhere – or, in other words:

...that everything which could exist, does exist somewhere... that every choice creates a 'branch' in effect, where both outcomes can come to independent fruition, each entirely

unknown to the other... It would mean an almost unimaginable abundance of universes, but who is to say such things cannot be true?

The Star-Spun Web, p 16

Imagine if, every time you made a choice to do one thing and not another, that a separate universe broke off from your own reality at the moment you made your decision. In one reality, you follow Choice A; in the other reality, you follow Choice B. Another word for this phenomenon is a **multiverse**, where every possible reality exists simultaneously, each in its own separate universe. Another branch of quantum mechanics theorises that these realities cannot interact, because if they did they'd collapse – a little bit like what happened when we looked into the box with the cat in it! If one of these alternate realities is 'observed', or interfered with from outside, it ceases to exist.

Can you imagine a new universe being created for every person on earth, a hundred times a day?

In *The Star-Spun Web*, the character of Tess has an unusual power – she is able to travel between her own reality and another reality, a place which looks quite similar to the world she's used to but which is subtly different in several ways.

Tess's country is called *The Hibernian Isles*. Her city is called *Hurdleford*. She goes to live in a place called *Fairwater Park*. **Do you know why these place-names were used in the book? Can you find out?** (Hint: for Hurdleford and Fairwater Park, check out the Irish-language names for Dublin and the Phoenix Park and how they're translated into English!)

Activities

Write a story from the point of view of Schrödinger's cat – imagine how it might feel to be shoved into a stuffy old box with something that might kill you at any moment, and how put out it might make you feel! What would you do to the first person who opened the box?

Brainstorm the concept of multiple realities and try to come up with as many alternate universes or worlds as you can. Alternate realities can look like they do in *The Star-Spun Web*, quite similar on the surface; you can also imagine worlds which are nothing like the one we live on. How imaginative can you get?

Draw some pictures of life in your favourite alternate reality.

Think about ways you might get from one reality to another. In *The Star-Spun Web* Tess manages it with the help of her Star-spinner. How might you travel from one dimension to an entirely different one? How might your dimensions fit together? Is it as easy as stepping through a hole in the world, or do you have to travel a long way? Can you bring others with you, or do you have to brave this new world alone?