

**Part 1: The Scientific Method, continued**

“The scientific method is a complex variable, human process, which differs in detail from scientist to scientist, and from discovery to discovery. The method can be idealized as a cycle of observation, synthesis, hypothesis, and prediction.” From *Joy of science* lecture series by Prof. Robert M. Hazen, Carnegie Institution of Washington.

Read pages 225-236 “*The Scientific Method*” of Chapter 8 (*The Natural Sciences*) from Richard van de Lagemaat’s Theory of Knowledge for the IB Diploma (Cambridge: Cambridge University Press, 2005) and answer the questions below:

1. Do you agree with the idea that new scientific paradigms become accepted only after older, more conservative scientists have died? What does this say about the **scientific method**?
2. Have the truths discovered with the scientific method yielded more important impacts to the world than other ways of knowing? Why or why not?
3. How important is scientific literacy to society?

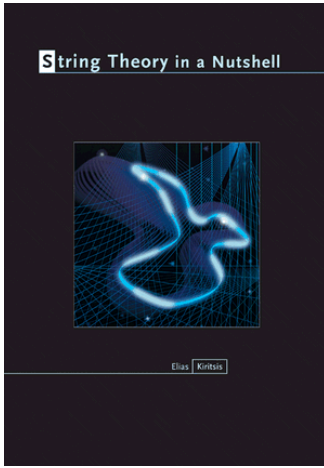


**Part 2: Watch** the NOVA series: *Elegant Universe, part 3*.

=====**Class Discussion of video**=====

**Reflections:** Read from the page of quotes from the video series *Elegant Universe* and answer these questions:

1. If science were defined as a **method** rather than a **body of knowledge**, could we classify string theory as science according to this definition? If string theory is not science, what is it?



2. Consider the 5 steps of the **scientific method** (observation; hypothesis; experiment; law; theory), and assess the extent to which string theory follows the scientific method. Are there some steps it follows and others it does not follow?
3. Does string theory seem to follow the **rationalist strand** or the **empiricist strand** in scientific thinking? Should the two strands be equal for “good” science to happen?
4. Which is your favorite quote and why?

### Theory of everything:

