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The effectiveness of biomimicry stems from evolution. Natural selection has spent hundreds of millions of years optimizing life. Diverse species emerged with unique characteristics. I liked a concept from "The Selfish Gene" by Richard Dawkins that describes a simple mechanism of evolution that produced the complex life forms we see today: selection occurs on the smallest scale which is the gene. In general, more excess energy can be directed towards increased reproduction or gives individuals with more energy a competitive advantage. Genes for efficiency are selected for. Humans have some unprecedented attributes in regards to energy use. We are the only species to escape the limit of only using energy that we can produce and/or process in our bodies though we should take notes from nature on the matter of efficiency. The example of biomimicry I chose is one I have some existing knowledge on and one that is centered around the idea of efficiency. Inspired by the hexagonal honeycomb, honeycomb core is a new technology that's typically used with a composite sheet on either side to make extremely strong and light panels and designs. I actually met someone who uses this to make 30 ft long RC planes. I'm hoping to use this technology as part of a challenge to make parts of a human powered vehicle. The reason that the hexagonal pattern is significant is because it allows for the highest area to perimeter ratio and can be used in a repeated pattern. This reduces unnecessary weight in the honeycomb sandwich panels. For bees, the high area to perimeter is optimal for storage. Also, hexagons provide an advantage in that it is more difficult for a section to cleave off of the beehive. In our world, using a honeycomb pattern would be a way to reduce packaging. I think in the future biomimicry will be an even more powerful tool. As of now, it is extremely hard to simulate proteins on a computer and much of the unique and potentially useful properties of nature could be found that way. For now we are more confined to mechanical aspects for biomimicry or must do a lot of research and testing for simple chemical solutions. One day (hopefully) we will be able to use biomimicry easily with chemical properties and use useful proteins from nature and that to me is really exciting. From looking at this, I've really begun to appreciate the complexity and wisdom nature possesses!