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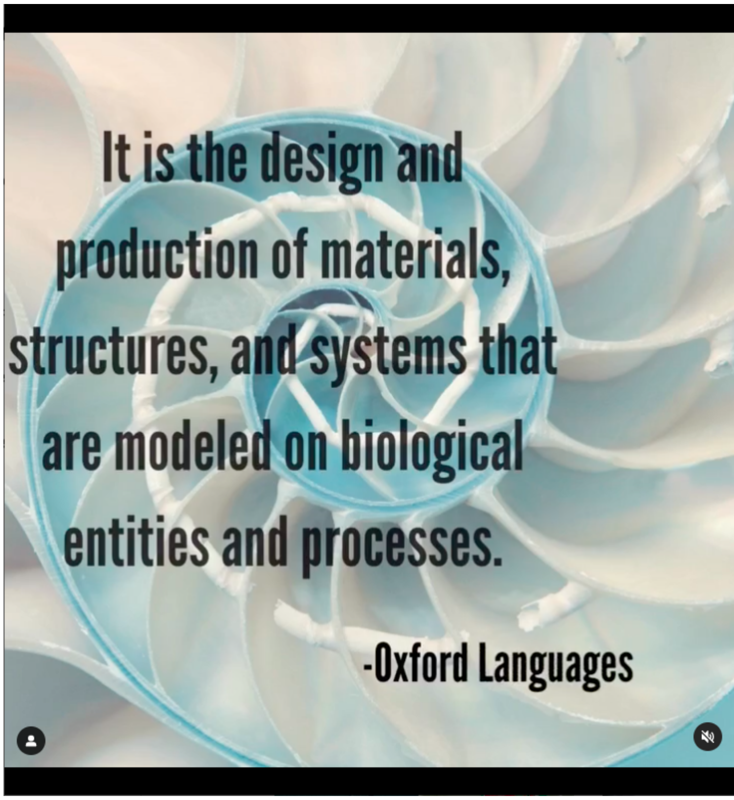
Time to get inspired. Explore the Biomimicry Institute's AskNature online library of over 1,800 natural phenomena and bio-inspired applications. Explore the Inspired Ideas, Biological Strategies, and Collections tabs at the bottom of the page.
Select one design or biological mechanism that is particularly interesting. Write a reflection (about 300 words) on why this strategy or system that mimics nature inspires you, as well as other thoughts on biomimicry as a concept.

A biological mechanism that I find particularly interesting is that of the slime mould that was used to reorganize the metro system in Japan. In this specific experiment, a group of Japanese scientists used an amoeba-like blob to swallow Japan, not literally of course. Japan was represented by a series of Oat flakes that were set in very specific places. Each oat flake represented a metro station in Japan. One of humanity's needs is that have efficient transportation networks, however, it's not easy to know which paths are more efficient at first sight. Through this experiment, the scientist sought to use nature's natural distribution of resources in order to reorganize their metro system in a more organized and efficient manner. This amazing mould is an example of self-optimization that is much simpler than other methods we use today. Instead of relying on multiple computer programs or complex chains of thought, it uses the mechanism of a mould. The mould isn't complex, it doesn't plan out the way it's going to distribute its resources, instead, it reaches out in all directions. It attempts to reach the oat flakes from multiple different paths, then it realizes what works and what doesn't, this makes the mould make certain decisions such as cutting back on certain paths.

One of the scientists even ended up making a computer program that mimicked the actions of the mould. The program consisted of a set of mesh tubes that would have protoplasm flowing through it. If the tube had a faster flow rate it would become thicker, if it was slower it would eventually thin and disappear. Optimization is something that has always truly fascinated me. I recently began to learn Calculus I and I have been enthralled by it. Optimization shows me the possibilities of a world where all systems are optimized and we waste nothing. I remember very vividly the first time I learned about optimization through derivatives, how you could calculate the exact height, width, and length of a box to make it have the maximum volume possible. However, I have to admit, as much as it interests me it seems very complex. This project is specifically interesting to me as it showed me biomimicry can also play a role in optimization, it can even make it simpler. I found out about biomimicry last year, and I truly do not understand why it is not used more frequently. The truth is that planet earth, plants and animals have been on earth for a far longer time than we have. They have spent millions of years evolving, making themselves better, so why not just copy them? Before researching biomimicry I never really thought about it as complex, I didn't comprehend the benefits of copying it. After all, a very naive part of me thought that if they were truly better than us they would rule the world. However, the truth is that these animals live in synchrony with nature. They use everything efficiently and they don't pollute the earth. The only species that ruins that which they need most is human beings. Now, the only thing I can think of is what other things we can copy from nature. How could these systems be applied to my own life? Could I try to reorganize the public transportation system in Colombia through this mould? Could I develop a paint whose structure is similar to that of a lotus leaf so that the car cleans itself? Can I design a building that controls its temperature without the need for AC? Truly, the possibilities are endless.



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