

Introduction to Biomimicry
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Lecture - 03
Why is Biomimicry Important?

You know, whenever you start learning something, it is nice to learn about what is biomimicry, what is not biomimicry and everything, but at some point of time, every one of you is going to say, why biomimicry? I sort of hinted about that in the introduction to biomimicry, where I was very short.

It is something that, you know, for me also, when I started learning biomimicry, at the end of two or three days someone said, why are you learning this? And I did not have an answer at that time. But I thought, I will get the answer as I started going deeper and deeper into the subject. But I do not want you to take the trouble. I want to introduce the topic of why biomimicry right away.

The only request is that each of you reflect on this and ask yourself what could be the reasons to learn biomimicry other than why I think biomimicry is important, right? Apart from the emotion attached to learning anything new, nature is very attractive to learn from.

Apart from all that, I think there is also some solid reasons as to why we must learn biomimicry, especially if we are not only in love with nature, but we are also in love with the environment. How we can hand over a safe world for our future generations etc. With that context in mind, I have some reasons as to why we are learning biomimicry.

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Why Biomimicry?

- We can develop new products, processes, and systems, or improve existing designs.
- It can help us to shift our perspective, see design problems and objectives differently, and uncover "new" solutions to difficult problems.
- Socio-economic and ecological pressure
- Transformative innovation
- We need a mentor/teacher: A teacher with 3.8 billion years of wisdom!
- Do we have a choice?



Here are my reasons, right? So as usual, I think each of us will have some reason. But here for me biomimicry is about these, about the first one being we can develop new products, processes. Now, you know, I do not want to just read that line. But what is the import of that line? The import of that line is that right now if I have, if I can make paint, then can I make paint in a different way?

Can I make paint by looking at the lotus leaf? If I make paint inspired by the technology of the lotus leaf, I have a new paint, right? If I can filter water using nature's technology, I have a new process, right? So therefore we can, the possibility of developing new products, processes, and systems is why we learn biomimicry.

The other thing is, I do not know how many of you were struck by the sentence learning from nature. Now that is a completely new perspective, right? It is a completely new perspective. It changes everything that you have learnt about technology. So learning, it shifts your perspectives. You start to look at new solutions, the difficult problems are now, there are, the difficult problems are always going to be there but now you start to say how can I look at these problems in a different way. And you will learn as we go along that biomimicry could be a solution for the ecological pressure that we are in, that the socioeconomic pressure that we are in. We have to do something quickly. The United Nations Sustainable Development Goals are a way forward towards that.

Every one of us who is concerned about the earth understands that the earth is going through a crisis, that there must be something that we can do. And there is no way in

which we cannot try out certain new possibilities. And biomimicry happens to be one of those possibilities. The next one is my favorite which is called transformative innovation.

Now transformative innovation, the meaning of transformative innovation is there in the word transformative, which means change completely. So transformative innovation is that innovation that will transform the way we live, right? It cannot happen immediately. It will not happen right away. But we can start our journey towards that. Transformative innovation is having processes and products that transform the way we live.

For instance, right now I have an air conditioner at home. It is run you know the air conditioners become more and more and more efficient as we go along. But at some point of time, the efficiency of the air conditioner will, you will not be able to increase the efficiency anymore, while the air conditioner is still causing distress to the environment.

At that point of time, can I look for something, can I look for something to. So this is my favorite, which is transformative innovation. What is transformative innovation? Transformative innovation is, the word transformative holds the key to the meaning of transformative innovation. Transformative innovation is that which will transform the way we live.

But the important thing to remember in transformative innovation is that it will not happen right away, it will not happen immediately, it will take some time to happen. But unless you start now, unless, for instance, let us assume that it will take about 40 years for us to build an air conditioner that mimics the termites and their technology of how they build how they regulate temperature in their mounds.

Let us assume that this is what we want to do, that we understand that the termites do not have, do not harm the environment and all that. So all of us let us sit down and say that is what we want to do, which means that we are going to completely transform the way we regulate temperature at home, which is going to be environmentally friendly and all that. But can it happen immediately? It cannot.

Can we stop the present air conditioning system completely? We cannot. So transformative innovation is that innovation that will be required, will be very important 30, 40, 50 years from now. At the same time, we cannot stop what we have right now. So a fine balance between what we have now and what we desire to have in the future is where transformative innovation comes in.

So biomimicry, why biomimicry is because biomimicry will lead us to transformative innovation, because it will help us to change the way we make things in a completely new way. And therefore the word transformative innovation and biomimicry. Biomimicry because it will lead us to transformative innovation. I am sure your eyes are already wandering to the next one, which is we need a mentor teacher.

This is something that all of us know. But the minute we hear it, some of us are shocked, some of us are surprised. In my case, I was completely taken aback saying I did not even realize that the nature that I am learning from is actually 3.8 billion years old. That there is so much of wisdom contained in that particular technology that nature is showing me.

And therefore when we look at our teachers in schools and colleges, we respect them because they are elder to us or because they have much more knowledge than us. Now the question is, if you are looking at nature and learning from nature, is it not right for us to be proud of learning from a teacher who is 3.8 billion years old?

And also put our trust in that teacher and say, that teacher is wise and therefore it is a good thing that you are learning from them. Finally, I am going to ask you, I am going to leave you with a question. It is always nice to leave each other with a question because you know, questions will evoke curiosity, will help us find the answers. The question is, do we have a choice?