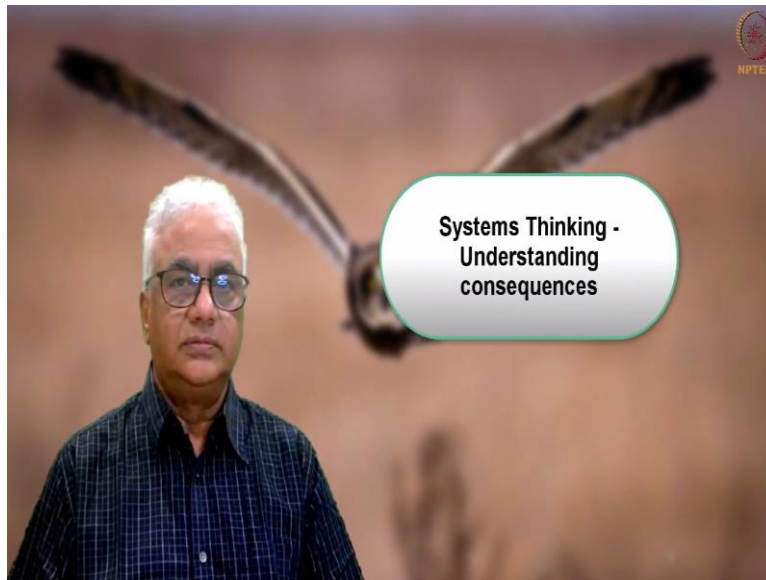


Introduction to Biomimicry
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Lecture – 29
Systems Thinking: Understanding Consequences Week 6 Part 1

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So, what is your reflection on systems thinking, did you notice the connection when the delivery boy came and handed over the food to you, did you think of all the connections behind the delivery of the food, did you think of him connected to the two-wheeler, the two-wheeler is connected to the manufacturing industry, the manufacturing industry is connected to making vehicles that are connected to getting fuel out of the earth, that is connected to pollution.

So, every time you order food there is pollution, did you connect him to the hotels that are making the food, the restaurants that are making the food, the grain that is being distributed in the restaurants, the farmers who are making the grain who are farming the grain and the connection to the rain without which you cannot have grain and if we pollute the earth too much then there is no rain, if there is no rain there is no farming.

If there is no farming there is no grain, if there is no grain there is no food, if there is no food there is no restaurant and there is no delivery. See how beautifully it fits in. I may have been smiling right through, but I was smiling more from the chain of events that is unfolding rather

than smiling at the thought itself. A simple act like delivering food has got so many connections and that is the beauty of systems thinking.

Personally, for me in my life, systems thinking has worked to understand problems like I maintain. It always helps me to understand my problems. If the water does not come to my house one day instead of getting angry and throwing things around, I know that there is a reason. Try and find out if I can improve. That is vision, finding out the reason for the water not coming on a particular day.

And we know that every one of our actions has a particular cause, and effect so many things in the systems and I am hoping that many of you have started to get interested in this fascinating subject. Before the end of the course, I will also tell you lots of books on systems thinking, a lot of authors who have written on systems thinking. I think I already told you the name of the book Fifth Discipline by Peter Senge.

So, therefore let us see if we can discuss more and more of systems thinking together. I am also wondering whether you read any more about the big picture. One of the suggestions is to sit down, take a personal calendar and write down the next three years, three years, three years go on up to the next 15 years, have that calendar right in front of you, and chart your life over the next 15 years in three-year divisions.

And find out whether there is any change or anything that you can control in those 15 years and find out if there is any new intervention you want to have, connect it to what you want to achieve in the next 15 years. The more important thing is if something untoward happened, something that makes you sad happens go back to this picture and look at this picture and say yes, I know something terrible has happened today, but my big picture still tells me there is a reason for hope.

Remember the one vehicle that all of us own is the helicopter. Whatever we own by way of car, cycle does not matter, the helicopter is the vehicle for us to look at the big picture from 10,000 feet up. So, big picture systems thinking and also the design principles I do not know how many of you have been fascinated by the design principles, but the design principles are rules.

Apparently, there are four types of fear. One fear is the fear of death all of us know. Second is the fear of loneliness, being alone. I am always afraid that I will be alone. The third is the fear of leading a meaningless life completely meaningless life, what if my life is totally without meaning. The fourth, strangely is the fear of freedom. You must be wondering what is this, why am I talking about the fear of freedom that is fear of having complete freedom without any rules at all.

What is the connection between fear of having complete freedom and the designed principles of nature? Because when you say fear of freedom it means that I am afraid of living without any rules, but what do the designed principles of nature stipulate? They stipulate rules for making products and there the umbrella rules for making products. If you did not have the rules then you have complete freedom to do whatever you want.

And whenever you have complete freedom to do whatever you want look what happens to the world which is why the fear of freedom which is not having any rules, I am connecting it to having rules by way of those 10 design principles which say that before I make anything can I evaluate my design against those rules. Brilliant. Once you understand something you can draw connections from almost anywhere the way we saw it in intersections.

Look everything is getting connected now. So, systems thinking, big picture, design principles, intersections everything seems to be connected and this is what I am going to do over the next three classes constantly try and connect, connect, connect, connect, connect. So, at the end of about 8 classes all we have got to read is one line and that line will lead us to everything that we have learned up to now.

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Understanding Consequences – Systems Thinking



Systems thinkers look ahead and anticipate immediate results of actions - and effects that may occur later

 <https://youtu.be/17BP9n6g1F0>

- What are the long-term and short-term consequences?
- Can we tolerate short-term pain for long-term gain?



As far as now is concerned I am going to be talking about a very important aspect of systems thinking which helps you practice systems thinking which is understanding consequences. I think it is easy enough to understand what is the meaning of this. It is simply that understanding what will be the result of my actions. There are three types of consequences short-term consequences, long-term consequences, and anyone guessing the third type of consequence unintended consequence something that I do not intend to do.

I can talk about it all day long, but I am not going to speak about it because I am going to let you start thinking about consequences, and many times what happens in order to satisfy an immediate need, in order to not wait for something I go ahead let us say, for instance, not being lazy to exercise. It is a luxury not to exercise. So, most of us fall into the trap of not exercising.

The short-term consequence of not exercising is happiness nice fun nothing lots and lots of time. You do not have to worry about slogging it out, no sweat, no having to get up early in the morning and walk and all that, complete freedom to do what you want read the newspaper all day, long-term consequence, you know, what it is. Health. Diabetes, obesity all sorts of illnesses. What do we do we sacrifice the long-term consequence for short-term joy.

Now you take this principle and you connect it to almost everything that you do not study for the exams short-term, long-term, eating fast food short-term, long-term, getting angry with friends just like that short term, long term, road rage one favorite topic for me road rage. I

have been quite an angry driver on the road only now after learning the consequences of systems thinking I have started to stop getting angry.

It is so easy to get angry and get him to trouble on the road. So, well you must be wondering Shiva why are you not talking about unintended consequence. Yes of course what, for instance, is an unintended consequence of not exercising anyone, short-term we know, long-term we know what is the unintended consequence of not exercising, what happens if I get ill my family members suffer.

It is an unintended consequence I never wanted them to suffer, but they suffer because I did not exercise, and because I did not exercise I become obese and because I became obese they have to put the hospital bills look at that it is so beautiful and now for almost everything we can look at unintended consequences. So, the question that we look at when you look at consequences are, what are the short-term and long-term consequences.

So, this is what we do right can we go ahead in the morning, get up in the morning, and do that walking just tolerate that short-term pain for long-term gain. This is the link to a video it is called 'Cats in Borneo'. I want you to actually pause the video now and watch that. When you watch the video I do not want to spoil the fun for you, but when you watch the video you will be able to perfectly understand short-term, long term, and unintended consequences.

So, next time one of the ways just like the big picture calendar that I spoke to you about, one of the ways to help you understand unintended consequences is to write down something that you want to do like studying or exercise or binging on fast food something like that. Next column we say short-term and then long-term and then unintended. I am not saying do not have fun.

Eating fast food I also love fast food. All of us like it. I am only saying that when you are starting to become habituated to fast food then it is a good idea to pause and say what are the long-term, short-term, and unintended consequences. The other bonus for knowing this habit of unintended consequence is that you know why something happens to you. When you are obese instead of constantly looking at the mirror and shouting at yourself.

You know that it happened because you did not exercise so you understand. If you are diabetic like I am when you look in the mirror you know that the reason for diabetes is because you did not eat healthy food. So, therefore we understand things like medical things like obesity and diabetes and all that and that is why I think it is important to know short-term, long term, and unintended consequences.