

**The Science of Happiness and Wellbeing**  
**Prof. Manas Kumar Mandal**  
**Rekhi Centre of the Science of Happiness**  
**Indian Institute of Technology, Kharagpur**

**Lecture - 10**  
**Belief and Gene**

Welcome to this unit of understanding regarding science of happiness and well-being and the precise title and topic that we are going to discuss about belief and happiness. Now we know that we have been taking decisions probably every 10 minutes what to do, what not to do, whether I will drink a glass of water or not is also a part of the session at certain situations. Now with every decision that we take we try to evaluate whether we have taken a right decision or not.

And most of these decisions are driven by your belief system, that if I am in a hot summer environment and coming from somewhere with lot of excitement in our body we do not take instantly water. And if we do not take it and take it after some time, we believe that probably it is good for our biological system. It does not create a crash and clash of our two antagonizing and opposing biological activity.

We will not go into the biology of it but we are talking about the belief about it that whether I have done the right thing or I have not done the right thing. We have talked about morality but this is not about morality this is how our belief is driven and by certain forms of our decision making and how it creates happiness for us.

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The slide features a header with the text 'Concepts covered' in a stylized font, where the 'C' is large and black with a yellow outline. To the right of the header is an orange horizontal line. In the top right corner, there are two circular logos: one for a university and another for NPTEL. The main content of the slide is centered and includes the following text:

How does belief affect our happiness?

- What does in belief mean?
- How far faith & health are related?
- Is there a biology that regulate belief?

The slide has a white background with a blue and black decorative element in the bottom left corner and a large black arch shape in the bottom right corner.

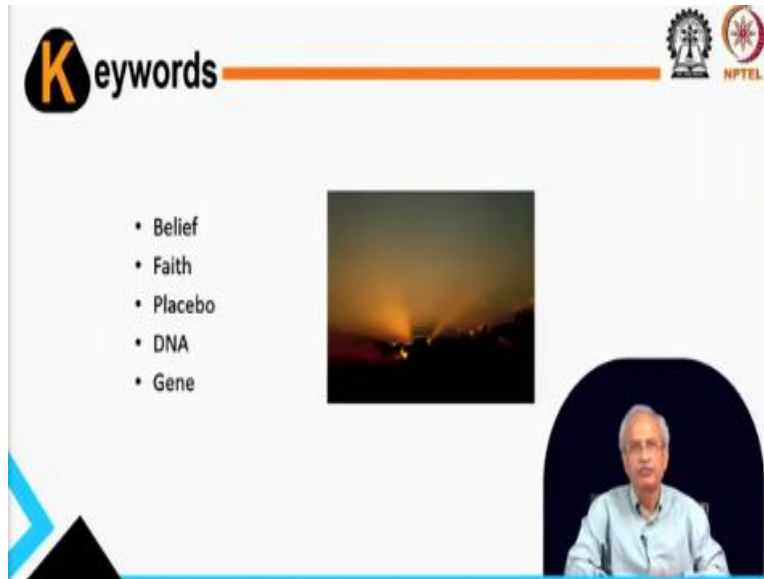
So, the fundamental question is how does belief affect our happiness as I said we have been taking decisions every time. And if our belief system does not bring happiness then probably, we are not doing something which is according to our belief. Therefore, the relationship between belief and happiness is fundamental to be understood. But as we do it, we have to first understand what do we mean by belief.

In fact, it is a state of mind where we feel that certain acts or decisions are true. So, we accordingly take a decision and then move forward. So, we will understand what do we mean by belief and whether belief is driven by acquired knowledge or not that is also not probably known correctly. Then we have got a concept of faith probably strong belief is called faith where we trust and have certain convictions about the outcome that if I do this particular activity probably, I will win or I will do a better job.

So, our faith in God for example how does it relate to happiness whether it at all impacts our health system or not. We will try to evaluate it with certain experimental evidence and then finally we would also like to know whether our belief system is also driven by our genetic potentials or not. So, is there a biology that regulate our belief that is also a very important question.

Because if our belief system affects our body and if we are always negatively charged your belief system is always negative. Then does it affect our body as well or not. So, we will try to find answer for all of this but as we often do, we will try to first understand the key concepts.

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Of course, the key concept of belief is the central focus and theme of this talk therefore will try to understand in a bigger way and as I said faith is probably more about your convictions and probably more about your religious convictions that something is true or something is false. We will also have a notion called placebo in order to experimentally study the understanding of belief. Placebo is a term which is used more often in medical sciences.

Where we believe that if a patient is given a medicine for which there is no therapeutic value and if the patient still believes that he is becoming okay we call it as placebo. Placebo is suggested potency for a particular act or a particular agent. Then we have a concept of DNA and gene. Now DNA and gene are materials which help us sustain the inheritance over the generations. Now we are going to discuss whether our belief system is affected.

Or our genetic potentials get affected by our belief system or not through a theoretical position by a molecular biologist named Bruce Lipton. So, DNA is de ribonucleic acid and the genes are inherited materials that we get it from our parents.

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Belief: A state in which someone holds a premise to be true

- often unaware about the influence
- breeds mindset
- offers meaning to our action

- ✓ Perceptions: beliefs about how the world seems to be
- ✓ Opinions: beliefs about how I should interpret reality
- ✓ Predictions: beliefs about how I think things will end up
- ✓ Meta: beliefs about beliefs

Now before we go to the biology part of it, we would like to understand what do we mean by belief as I said we would first understand the state of belief. It is a state where someone holds a premise to be true. If I take an action, I take an action because I believe that I am going to be successful. I do not take an action where I believe that I will be failure. So, whenever I face a target whenever I take a decision whenever I initiate a process, I have some belief within my thought process.

And this belief actually affects our daily behaviour as I said every few minutes, we are taking a decision and our decisions are backed up by belief system because if we try to understand the reality through its logical processing by analysing and experimenting what would be the outcome probably, we would be inundated with lot of I mean activities. Our brain would not be able to capture all such events based on which we can do this logical processing.

So, belief is a process through which we can shortcut this experimental manipulation of the situation before we actually take a decision and based on that we take a decision. But problem is that we are taking a decision we do not know why we have taken a decision. We are really unaware of it. And because our belief system creates a template for our decision making it becomes a mindset problem not a problem, I would call it as it is a mindset issue.

So, we need to understand the difference between mind and mindset. Mind is something which is basically the processor based on which you perform your daily activity. But while you do this

activity you have to take a direction and that direction is probably given by this belief system so, it breeds believe breathes your mind mindset. And it offers meaning to any action so anybody asks this question why you have taken this decision.

You can meaningfully tell because I believe that this is what is going to happen. Now this belief is based generally on your information processing system we also call your cognitive system and then based on that you actually take a decision. There are four kinds of beliefs we are going to talk about it, the perception, the opinion, the predictions and meta-belief.

When we interact with the people each one of them give certain ideas about the outcome of a possible activity. Now some people give these ideas based on their perception. They believe that this is going to happen this is my perception the world is like this and I am going to take a decision accordingly, this is my perception. But some people have the belief they do not really take an action they actually develop certain opinions.

So, they have to interpret a situation if they see that something has happened for example well while I was travelling across the road, I find there is an accident. And I believe that probably the person was unmindful of his own issues or I can develop a belief that well the accident has taken place due to somebody else's fault. Whatever be the issue I generally do not differentially try to understand everything and go by a belief so that becomes my opinion.

So, perception and opinion are different thing and based on that opinion we make predictions that in future things will happen as well in this manner. So, if I believe that traffic accidents are taking place more often and my opinions are that the people are not taking care about themselves or the traffic becomes very chaotic you make a prediction that more and more such accidents are going to take place.

Based on all these perceptions opinions and predictions you develop a meta-belief. Meta belief is a belief where you actually accumulate people's belief and there from you develop your own belief. So, it is a higher order belief that you develop based on the belief system of several people. So, that is what the belief system is all about there are four different kinds as I just mentioned to you.

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The slide is titled "Primal belief" and features the following content:

- ...an individual's most basic belief about the general character of the world (Clifton, 2021)
- Unidentified beliefs shape our behavior – often dramatically via ambiguity interpretation (McNamara, et al., 2006)
- The view that the world is a safe, good place may alter ambiguity interpretation towards seeing situations as happier, meaningful

On the right side of the slide, there is a portrait of a man with glasses and a beard, wearing a dark suit. Below the portrait is a URL: <https://ses.as.uscm.edu/sites/default/files/primalworldbeliefsclifton.pdf>. In the bottom right corner, there is a video inset showing a man in a light blue shirt speaking.

Logos for a university and "HPTCL" are visible in the top right corner of the slide.

Now we will try to first understand the origin of such belief that is primal belief. We have thus far understood the concept of evolution in our earlier talks. Now we would like to understand that is there a belief which we develop right at the outset of our development in the system through our knowledge and experience. Primal belief is a concept a theoretical concept developed by a person called Clifton Jeremy Clifton 2021.

He believes that individual's most basic belief is something in terms of primary belief, secondary belief and tertiary belief we will discuss about it in the next point. But he believes that what kind of world it is your primal belief determines it. Some people believe that the world is a hostile place basically they believe that whatever you is your experience is the hostile place. Some people believe now the world is a very safe place there may be stray incidences of hostilities.

But it is a very safe place likewise some people believe that the world is good people in general are good. Some people believe that people in general are bad there may be occasional variations but in general people are bad. So, primal belief is a concept which anchors all our belief system so, that is what Clifton suggests about it and he says that this belief system has a very great impact in our daily behaviour.

Wherever there is a conflicting situation. Wherever there is an ambiguity instead of trying to understand differentially the situation we try to take a position which is ambiguity interpretation. So, in any ambiguous situation in any conflicting situation it can be your belief that gives a direction and there are a lot of ambiguous situations in life. Whether I should develop stability in life or I should go for flexibility in life is ambiguous situation and based on my belief.

If I think that now, I should go for a stable position so I will take stability into account and the vice versa. Likewise, people may believe there is better to argue some people believe it is better to agree. Some people believe that we should be passion oriented some people believe that we should be purpose oriented. Some people believe that we should go by a content of a material some people believe that no you should go by a context of a material.

Some people believe that career is more important than life some people believe that no life is much bigger than career. So, we should give more emphasis on life. So, wherever there is a ambiguous situation, conflicting situation your belief system gives you a direction. So, if you believe that the world is a safe good place then your ambiguity interpretation will move towards a happier and a meaningful orientation.

So, belief actually adds meaning to whatever action you have been taking in your daily day-to-day activity. So, as I said Clifton has mentioned about three different kinds of belief.

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**Primary Primal:**

- **Good (vs. Bad):** it is belief that the world is a delightful place that is beautiful, safe, fascinating, abundant & full of meaning

**Secondary Primal:**

- **Safe (vs dangerous):** that the world is typically safe, comfortable, stable, fair; there is rarely a cause for alarm
- **Enticing (vs dull):** that the world is brimming with opportunities, worth exploring; little room for boredom
- **Alive (vs mechanistic):** that is world is animated by intentionality, that interacts with you & needs your help; there is a cause to listen what the world is saying



I will only mention about the primary belief and the secondary belief or the secondary primal because tertiary beliefs are too many. So, the primary belief is that whether this world is a good place or a bad place. Now people who believe that the world is a delightful place, beautiful, safe, fascinating, abundant, full of meaning this is one set of people. But there is a reverse set of people who believe that the world is a bad place is unsafe.

It is not at all fascinating it is very constricted and it is meaningless, dull and it has got no value. So, these primary belief probably directs all our action that we take in a day-to-day activity. This is the anchor of our belief system then Clifton talked about the secondary primals. The secondary primal are three he mentioned about it whether the world is a safe place or a dangerous place. Now somebody who believes that the word is a safe place they believe that it is safe comfortable stable and fair.

And there is no cause for an alarm rarely a cause for there may be some issues on alarm but there is rarely a cause for that. So, whether you believe that the world is a safe place or a dangerous place is part of your secondary primal. Then comes enticing and dull the whether the world is full of opportunities full of light worth exploring and if you believe that the world would be very enticing. You believe that there is little scope for boredom.



But some people believe the other way around that the world is dull full of boredom not worth exploring there are lack of opportunities. People fight against each other so the world is considered to be dull for them. What kind of belief you are actually gearing up to and then finally the second secondary primal is also on whether the world is alive or a mechanistic that is it animated by intentionality.

That is people like to interact with each other they like social bonding they like to help each other and if the world is very alive then your belief system whenever you meet someone would be accordingly. But if you believe that there is; the world is mechanistic, everything follows a certain procedure and there is no cause why I should listen to someone. So, somebody who believes that the world is alive will continue to listen to what the world has been saying.

So, based on this belief system as I said our daily actions, interactions, decision making all are governed.

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The slide features a white background with a blue border at the bottom. On the left, the text 'Some research findings...' is followed by a bulleted list of four items. On the right, there is a small image of a woman with her hands clasped in prayer, a URL, and the NPTEL logo. A small video inset at the bottom right shows a man speaking.

Some research findings...

- Faith & longevity have relation: 2-3yrs of additional life with religious faith
- HIV patients who pray have higher immunity cells
- People who believe in loving God fare better after an illness than people who believe in punitive God
- The brain is in a different state during short-term religious fast

<http://content.time.com/time/ver.../0,10641,10090211,00.html>

NPTEL

Now when we go for some research findings experimental findings, we find that faith and longevity has got relation. And a lot of studies have been done by Templeton foundation and these studies are reported in a special issue of time which I have portrayed before you. They found through long term longitudinal research that if you have got faith and believe in God then you get two to three years of additional life.

Now these are challengeable notions but this is what the experimental finding these are not my theoretical position. The research also found that HIV patients who are immunocompromised I mean if they have got faith then their immunity becomes stronger. People who believe that God is very loving and then I mean as compared to a punitive God. Let me explain this concept. Some people believe that we should worship God because God may give us punishment if we do not do that, is called punitive God.

And the other way we believe that well God is always forgiving type whatever be your case God is ultimately going to support your cause. So, people who believe in loving God they actually do much better than people who believe that God is punitive and if I do not worship God if I do not pray for God then I may be punished or penalized. It has also been found that those who are in religious fast based on their faith and convictions to a religious system.

They their brain becomes different when you are having a strong religious faith and these studies were done as I said on functional magnetic resonance imaging. So, a lot of research findings were done and these research findings are generally done in survey type of research. It is a social survey type of research. Where lot of people have been given questionnaire to understand their belief system and then also simultaneously verified what is their living potentials.

How long they are surviving? Whether they have got better longevity or not? Whether their immunity system is getting stronger or not these are all survey based researches done. But some studies were also done which are experimentally done.

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▪ Believing in a cure leads to real bodily changes  
 ▪ Pain reducing chemicals are released after a placebo is given

In fact, in this slide will tell you about the experimental researches. So, these researches have found that believing in cure is actually give you a real bodily changes. We brought the concept of placebo in this particular experimental condition. You see that there are three different images were given which are taken out of MRI, the magnetic resonance imaging. The first one is the opiate treatment.

It means that if you have got headache and if you are getting that headache there would be an activation in the brain that if you are getting that headache. And if you are given medicine then the medicine works in those areas and your headache goes. But in the second brain image you will find that the patients were given patients were also getting headache and they were given some placebo. That is a drug which has got no therapeutic value.

But once they take it the neurotransmitters in the brain starts releasing. In a similar fashion as the drug original drug is supposed to have. Therefore, we can convincingly say that even if your belief even if you are not given the right kind of drug which has got therapeutic value. If you believe that you are going to be okay you are actually going to be okay. And the placebo non-responders are the people the third group where there is no placebo given.

And people continued to have headache without having any impact on them. So, the results suggests that the pain reducing chemical are released after a placebo is given which is the middle one in the slides. The middle slide is actually showing this. It means that even if you are not given

the drug original drug. If you believe that you are going to be okay then the chemicals get released and you get the relief out of it.

So, you see the strength of the belief system so, now since there is a biology behind it, we would like to know whether the biology is also governed not only our brain system is it governed by our genetic system as well does it affect our genetic system if our belief system is positive or negative.

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The biology of belief (Bruce Lipton, 2015)

Premise I: The cell is like a human body & it can function without DNA

- The nucleus which contains genes is viewed as the control center – the brain of the cell
- If the nucleus is removed, the cell continues to perform all its life functions

So, Bruce Lipton a person who has written a book and the whole set of slides hereafter will be talking based on his conjectures as only. The biology of belief is the book and at the end I will give you the reference of that book. He has made five premises he showed five premises and he is a molecular biologist working on the system of belief and how does belief affect our genetic system.

We generally believe that our genes affect our belief system that whatever we have inherited from our parents it affects our belief system. But he says no, it is the environmental signal and how you interpret them and how you develop your belief that affects your genetic system. So, he has got five different premises will go by understand try to understand this premises one after another. The first one is that the cell is like a human body and it can function without a DNA.

That is, we know that we have got thousands we have got billions of neurons in our body. And within each neuron there is a nucleus which is the control centre of the body and within the nucleus there is a cell body I mean where sorry within the cell body there is a nucleus and within the nucleus of course there are DNA and genetic systems will cover it into the next slide. But let us try to understand that if the nucleus of the neuron is removed the neuron is still surviving.

That means that if the genetic potential is taken out will still survive and will still continue to activate, how? That is this question.

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The slide features the logos of IIT Madras and NPTEL in the top right corner. The main text reads: "Premise II: DNA is controlled by the environment". Below this, there are two bullet points: "DNA is coated in a protective sleeve of protein, opens up with environmental signals" and "If there is no perception, DNA is inactive". A diagram titled "INSIDE THE CELL" shows a cross-section of a cell, with labels for "Cell", "Nucleus", "Chromosome", "DNA", and "Gene (segment of DNA)". A small URL is visible at the bottom left of the diagram: "https://www.civildaily.com/biotechnology/basics-of-cell-nucleus-chromosomes-and-genes-etc/". In the bottom right corner, there is a video inset of a man speaking. At the very bottom of the slide, it says "The biology of belief: Bruce Lipton".

He says that the DNA which is supposed to control our inherited potential is more controlled not by our inheritance more controlled by the environment. He says that if there is no perception the DNA is inactive. Let us first try to understand the genetic system first. Look as I said we have got billions of neurons and within each neuron we have got a cell body and within each cell body we have got nucleus.

And within each nucleus we have got 23 sets of chromosomes each derived from our parents and each chromosome has a long molecule called DNA that is de ribonucleic acid. And the portion of this DNA is actually called a gene. So, the genetic potential is driven as per the book of Bruce Lipton suggests that if there is no perception the DNA will remain inactive. So, unless I see what is happening outside my DNA will not be active.

So, if I see some good my DNA will start unfold in a good manner. If I see something bad in the outside my DNA the genetic potential will unfold in a altogether different manner.

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The slide features two logos in the top right corner: the Indian Institute of Space Science and Technology (IIST) logo and the HPTET logo. The main text on the slide is as follows:

Premise III: Perception of environment is not necessarily the reality

- Environmental signal is separate from organism's perception of signals
- Human perception acts as a filter in between

In the bottom right corner, there is a circular video inset showing a man with glasses speaking. At the bottom center of the slide, the text reads "The biology of belief: Bruce Lipton".

So, he says that perception of environment is not necessarily the reality. The environmental signal is different from organisms perception of signal. That is how, I perceive it and what I perceive it there is a difference between that and our belief acts as a filter in between. If I see a tiger in picture so the reality it is in picture and if I am afraid of that tiger. It means it is a signal which I am getting internally through our system.

So, belief if I believe that the tiger is always very threatful then probably I will be conditioned to some kind of threat potential. So, belief is a filter between what I see outside and what I see inside.

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Premise IV: Human beliefs, choosing to perceive a positive or negative environment

- Human senses are programmed in a way to determine which gene to be activated in a situation (growth or protection)
- Negative perception activate protection genes, triggering fight or flight response



The biology of belief: Bruce Lipton

It fourth premises therefore that human beliefs if you choose to perceive something positive there would be certain hormones which are released accordingly which is called growth. And if you think that something negative is going to happen your hormone would be released which is called a protection hormone. That is fight and flight these are the two mechanisms which are governed by protection gene.

If I want to protect myself if I see something outside negative and threatful I will try to protect myself through my genetic potentials. So, my protection hormone would be activated but if I see something positive is going to happen our genetic unfolding would be different. So, negative perception activate our genetic protection genes triggering fight or flight response. But if I see something positive the fight and flight response will not be triggered.

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The slide features the logos of the Indian Institute of Space Science and Technology (IIST) and NPTEL in the top right corner. The main text is as follows:

**Premise V: Fight or Flight**

- Negative thoughts boost reflexes, at the cost of higher order mental functions
- Beliefs act as a filter between real world & biology; therefore, our choosing of beliefs determine what genes are to be expressed

A video inset in the bottom right shows a man with glasses speaking. At the bottom of the slide, it reads "The biology of belief: Bruce Lipton".

And if fight and flight type responses are not triggered then what will happen; will have a different bodily state. So, negative thoughts if you are always having a negative belief then it will boost your reflex at the cost of higher order mental function. That is you will always try to activate your peripheral system of the body at the cost of your central thoughts process or nervous system. So, beliefs act as a filter between real world and biology.

And he says therefore our choosing of belief determine what kind of gene is to be expressed. The point I am trying to make here is that if you have a positive thought then your growth hormone will continue to release. And if growth hormones are released your genetic unfolding would be different. If your negative thought boost your reflexes at the cost of your higher order mental function then you will always be at the flight and fight condition.


And as a result of which you would be compromised after a given period of time which we call as a protection hormone. So, growth and protection hormone unfolds the genetic potential depends upon what kind of signal I am trying to perceive. And the perception of the signal depends upon your belief system it is the filter between what you see outside and what you feel inside.

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**CONCLUSION**

- The common idea is that gene determines our physical & mental characteristics
- A person's perception, not genetic programming determines our behavior
- Our beliefs select our genes, that determines our behavior



<https://www.bruce-lipton.com/about/>



So, based on this Bruce Lipton suggests that the conclusion he has given that the common idea is that the gene determines our physical and mental characteristics and he is a molecular biologist. And he says thereafter that is not true a person's perception and not the genetic programming determines our behaviour. Genetic programming probably does something but not exclusively. So, environmental signal has a lot of things to determine our belief system.

And based on our belief system we develop our orientation, interaction, decision making everything. So, our belief selects our gene that determines our behaviour. So, if you have a right notion a positive belief then the gene that is going to be unfolded at different set of genes. If you have got a negative belief the genes that is going to be unfolded are different. So, depending upon that your growth and protection hormone would be released and accordingly your biological system will develop.

So, the fundamental is that your belief not only governs your decision making it is also governed by your biological system and it affects your biological system as well.

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**REFERENCES**



<https://ppc.sas.upenn.edu/sites/default/files/primalworldbeliefsclifton.pdf>

<https://www.frontiersin.org/articles/10.3389/fpsyg.2020.01145/full>

[https://www.jstor.org/stable/1198728#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/1198728#metadata_info_tab_contents)



So, the biology of the belief is the book I would like to refer to all of you and there are certain websites which you can always consult in order to understand the two aspects of it. The biology of belief is on one side and how the psychological belief system helps us in developing a mental state which may ultimately govern you whether you are a happy person or a unhappy person. Thank you.