

**Indian Institute of Technology Kanpur**

**National Programme on Technology Enhanced Learning (NPTEL)**

**Course Title  
Cognition, Transformation & Lives**

**Lecture – 13  
Can We Transform?**

**by  
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So, welcome again to this next lecture of this course on cognition, emotion and transformation. Till now if you have followed the talks, you would have noticed that we were talking about placing the self in the society and how the biological influences and the neurophysiological influences affect behavior, how the brain works at both unconscious and conscious level.

And how the cognition, emotion interplay to create behavior which is the ultimate reflection of the thought process, how the concepts of normalcy and abnormalcy have evolved over time and how the societal rules and societal are bringing including the mythology, religion and everything that goes into the head makes an experiential world out of which the conscious mind has to create a meaning and a sort of story to keep you pushing.

So the mind may suddenly get very harsh and looking at the so many imports and so much activity going on even in a single head what to talk off seven billion people. And the people all the time as the time flows, all this is routed in the larger universe and larger space and time. And we ended up with a prototype not a case study, but sort of discussion on of a curious situation of what is morally right or wrong.

And extending it to the situation of addiction where the actual cause is still ambiguous and the expectations are also ambiguous. In the sense that when you talk of addiction and I am just recapitulating from the last lecture. The people are expected to transform, people are expected

to change and that brings in the question that they have a control over the change that means they have will, they have an intent, and they have the capacity to alter their reactivity.

On the other hand what neuroscience is talking about and most of the neuroscientist believe that there is no will whatever happens to the conscious mind is just a projection of what the unconscious mind is already decided. So, what is the trick then, is there a possibility of somebody applying his will or the intent to change it, and that brings in the big question of well obviously will operates at a very, very conscious level, unconscious will does not mean anything.

The will may not be free as the neuroscientific studies provide a model for understanding. But still it is there will or it is all deterministic decided from the unconscious, the unconscious is deciding from the experience which is having through the sensory organs whatever the input goes. So ultimately the big circle where the man is just moving according to the circumstances and the whole information which is processed in a very, very hidden none of way away.

So let us look at this and because this is the most crucial question. In fact if you ask me next two lectures we will depend whether we are able to sort it or not. Because when are taking about the 3<sup>rd</sup> part, we have talked about cognition we have talked about emotion their interplay if we have talked we have placed diamond to the circumstances but we have not talked of transformation because transformation hinges on this link between what we have understood how the brain function and what we can do and that link is will and will exists in a conscious mind so the big question is, is the mind trainable?

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Because it has larger ramifications as if you remember I told that psychiatry may believe that people who have addiction or ill but they do not believe with full heartedness so that they we do not have affective drugs till now. So, what we do is we also tell people to keep changing and that is the state of affrays with most illness that even we talk of rehabilitation where does rehabilitation, it cannot be done by a medicine, medicine can cure symptoms but when the symptoms improve one has to push oneself to readjust into the ministry.

That again require cretin amount will. Whether it is a collective will or a will of family member or will of patient even if you are recovering from depression. And if you remember I talked about help and treatment so you can isolated people treat and send them back to, but even sending them back and getting back to normal life requires certain amount of will. And so his help whether the help can be done in isolation or it should be in the ministry where the person is living is a question which.

So let us look at this whole issue of whether there is a will and see whether we can link it to what we are going to talk about that is transformation. And whether the conscious mind can do it. So the big question is whether the mind is trainable as I said or can consciousness. So let us have a

brief look at the understanding of what consciousness is understood as. This is from a paper which is mentioned here.

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the power of the brain would not be to generate consciousness *ex nihilo*, but only to bind, focus, accumulate, and bring to self-reflection the all-pervasively *given* experience within a coherent situated knowledge. *These* latter functions are in principle accessible to science ; they are part of the so-called “easy problems”. In particular, one may adduce very interesting evolutionary arguments in order to explain the emergence of crucial features of our human consciousness, such as *self-reflection*

**Bitbol, M.; Luisi, P. L. Science and the self-referentiality of consciousness. Journal of Cosmology 2011, 14, 438-454.**

The power of the brain would not be to generate consciousness *ex nihilo* not out of anything, nothing but only to bind focus, accumulate and bring to self reflection the all pervasive given expression right within a coherent situated knowledge, so there has to be a coherence and binding of all that is going on into your head and these are accessible to the brain. But we can, as it says we can have very interesting argumenst in order to explain, the parts human consciousness such as self reflection. Obviously the consciousness is not a unitary thing.

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## Consciousness as a 'light' (Thomson)

Access consciousness	Experience consciousness
• Sensory/reflexive	• Experiential
• Soft .	• Hard problems
• Emergent	• primary
• NCC	• Self

But this is a very interesting concept, what is consciousness if you remember one of the pictures which I showed you from one of the cognitive psychology books, I will show it to you again, the two parts consciousness is the light there is a access consciousness which is sensory and reflexive you do your reflex action which is the soft problem, we know the physicality of it, somebody touches you with a pen and you withdraw.

That is a different type of consciousness, you can know that it goes to the brain is a sensory thing, what emerges out of it is awareness of that pain, and these are defined by the neural correlates of consciousness. But this is this all, because even if there is a pain which is a feeling of pain which has emerged from this pen getting into your skin David Chalmers calls into the soft problem and hard problem is the experience of pain same that experiential consciousness which is a part of self that is difficult to explain and that probably makes everybody unique and all though even if you define certain qualities of pain or touch or a smell still people will have different experience and that is the hard problem of consciousness.

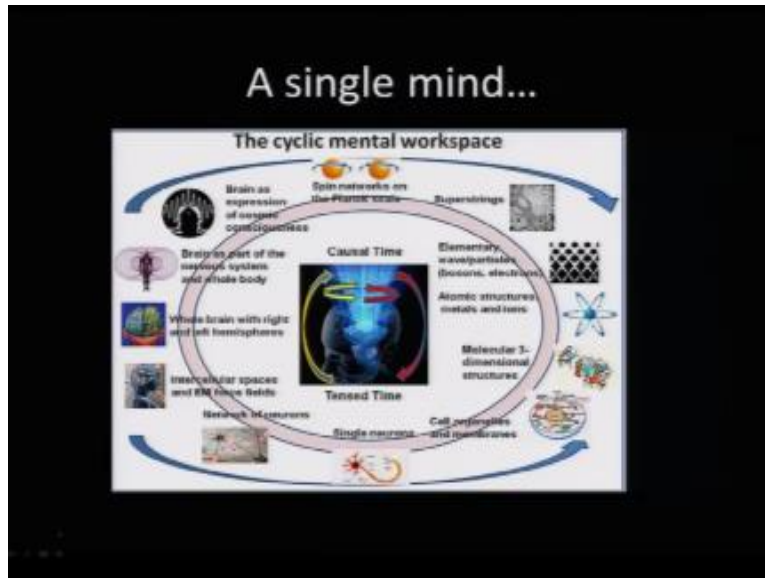
Whether it is a primary thing or secondary to this we are still debating and obviously as I said that forms the self what is the uniqueness in your personality.

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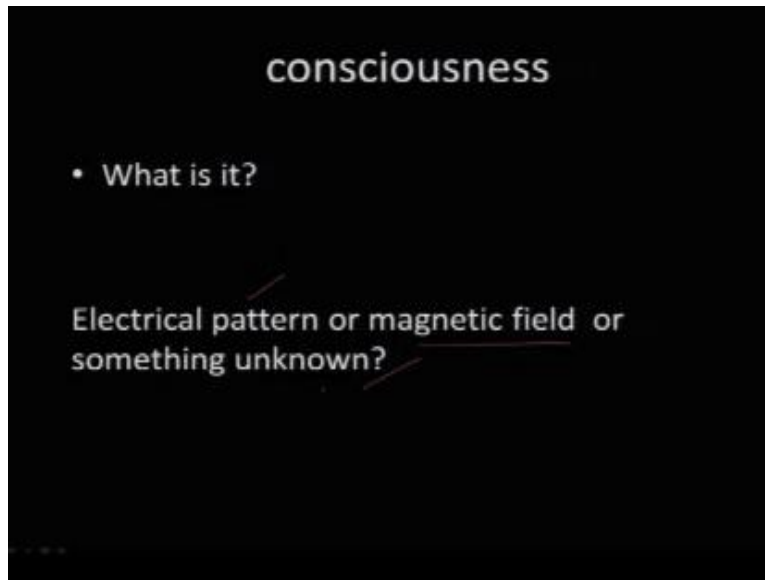
So I mean this is just by the way whether there is a huge one single consciousness.

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Like Buddhist belief, Buddhist belief that there is one single consciousness which separated a lot of religious people and spiritual philosopher belief that there is a single consciousness are waiting the whole universe and brain is just an expression of cosmic consciousness and whereas the elementary particles and all they all gone to and the time and space is actually connects. So, the flow of the time actually creates the cause and effect that is what is create past and present and future. But there are lot debates in that also till we come out with the conclusive model.

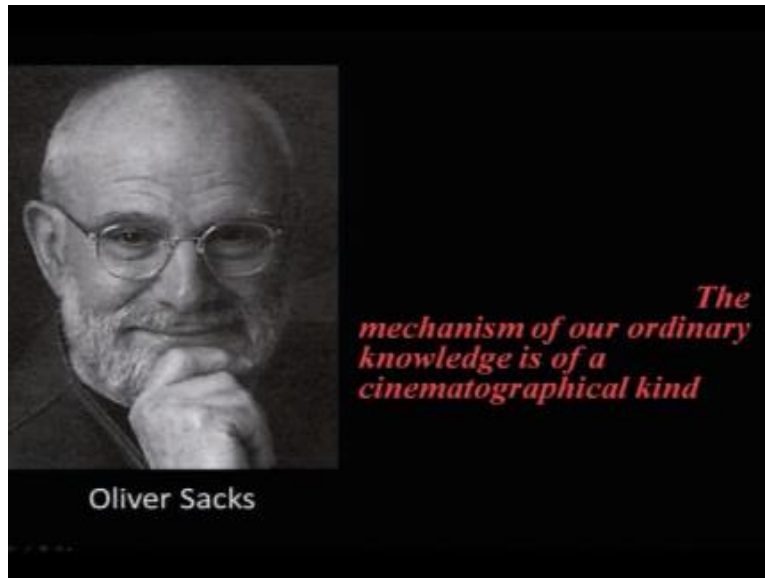
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Before we talk of putting in some conscious effort to transform and change to have will. We have to know, what is it all about? it is, is it electrical pattern because we know about the electrochemical firing or it is a magnetic field around it we know there is a electricity there is a magnetism also or it is something unknown.

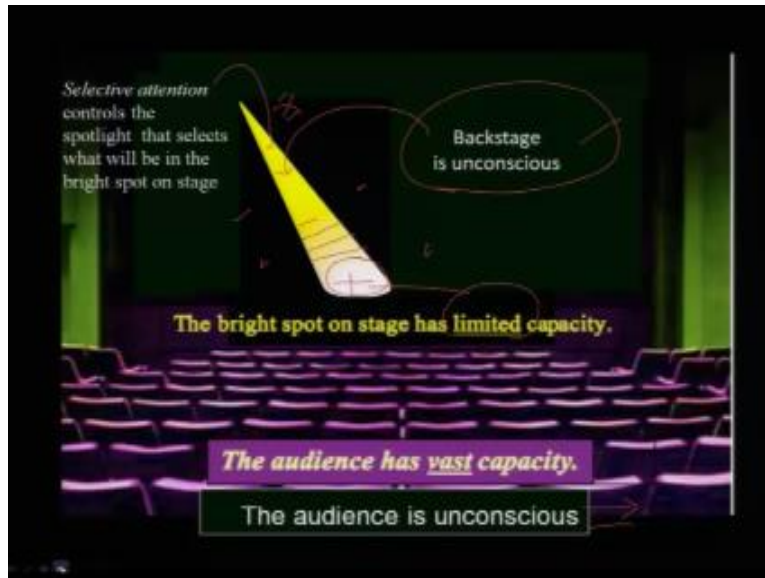
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The mechanism of our ordinary knowledge the first cinematographical kind Oliver Sacks a very famous writer and what is cinematography.

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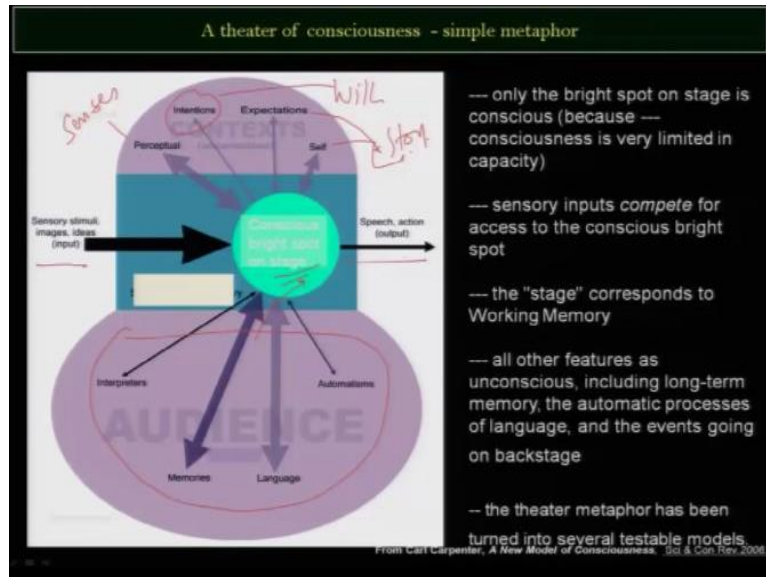


The back stage is unconscious, the selective attention we talked about camera like attention where which you can focus on. So, even if to focus that attentional mechanism or that camera within on to something of your choice still requires some amount of will. So, selective attention controls the spot light that selects what will be open in the bright spot this is consciousness, and this has a limited capacity.

So consciousness is like a light which can at a given point of time within a time frame has limited capacity to pay attention to it, and what it is happening is so the back stage is unconscious and the audience is in unconscious, what you know is the limited capacity through the attentional mechanism of conscious mind which obviously has to give meaning to whatever is coming as we talked in one of the previous lectures and whole concept of awareness and choosing because it has a limited capacity.

So it if you go back to one of the initial lecture where said that the human mind actually cannot multi task and this is the reason why it cannot multi task, because of the limited capacity of this attentional mechanism. So, you may be actually doing many things here and here but at a given instance it will be this where is it coming from whether it is coming from this or a decision something which is still not clear or maybe it is clear we do not know the mechanisms for it.

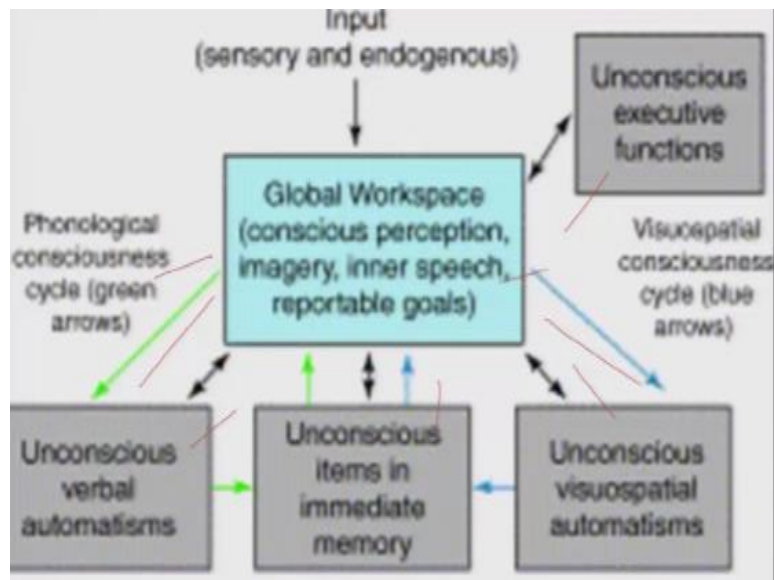
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The reduction is more this picture you have seen, so this is a conscious bright spot on the stage intentions, equated to will whether it is free or not when I am saying it is free or not it means that possibly the unconscious mechanisms created it. It is a creation of the unconscious again so if it is a creation of unconscious it is still not free perceptual all that goes through the senses, expectations is actually what your story has made.

And self is also story which your mind tell so all this goes in all this is interpreted here composite picture is made thrown to this within the 200 → 500 ms of rather snap short and then this is a behavior so this is like a theater model.

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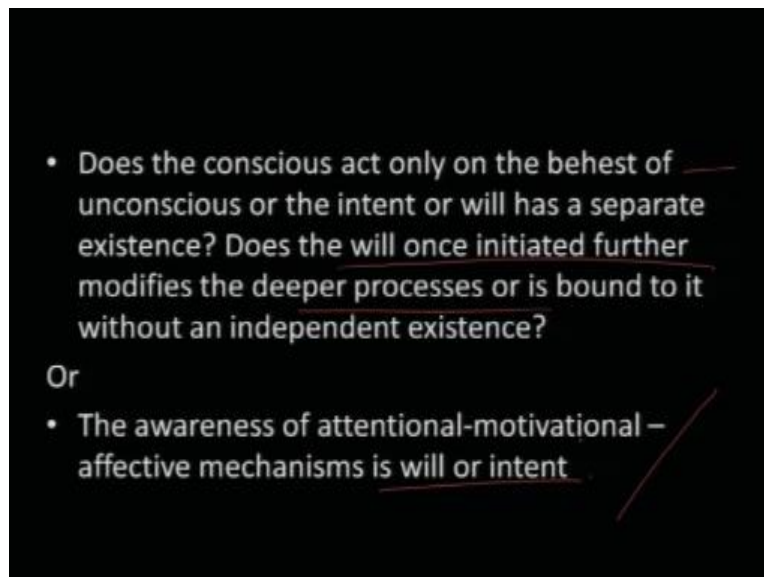
Again the same thing to explain there is a unconscious executive function there is a works space and there is a unconscious visual special things happening memory verbal, phonological, consciousness, visual special so when you are actually speaking are try this small experiment and you have to pull you put your intended into that, if you speak any word the two things happening in the brain.

Say I say pen now one when I am saying pen there is one process which was going on at the phonological level, two again start from the beginning why did I choose pen, because this was my immediate contact I could have chosen a rose or a duster or a mouse but out of these thing the mind had choice but I did not put deliberately into choosing something and when I said word I said okay fine you choose a word and then I said pen.

Because this was the immediate thing whether this was intendful or willful, at this point of time it was not because it did not give it a thought but now if I say again I have to choose something else not now I am putting my intended to choosing a glass, glass of water and when I am saying a glass of water two things are happening, there is alike of visual sketch pad this pattern of glass is being sketched in my mind.

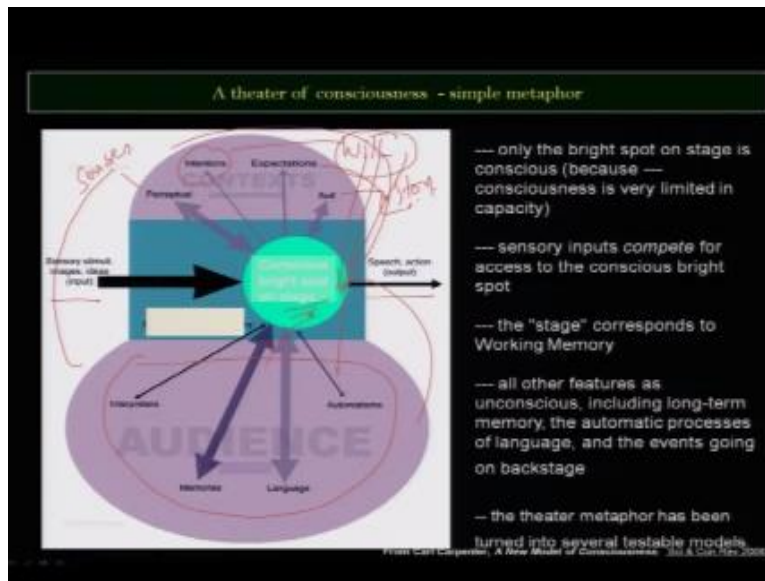
In a visual sketch pad and at the same time the brain has formed this word and already transmitted to we spoken. So, you can split any spoken word into its visual counterpart also but normally we do not have to pay attention to all this because brain has evolved that intelligently the brain has really evolved to keep all this things under wrapped because if so much data has to be analyzed every second.

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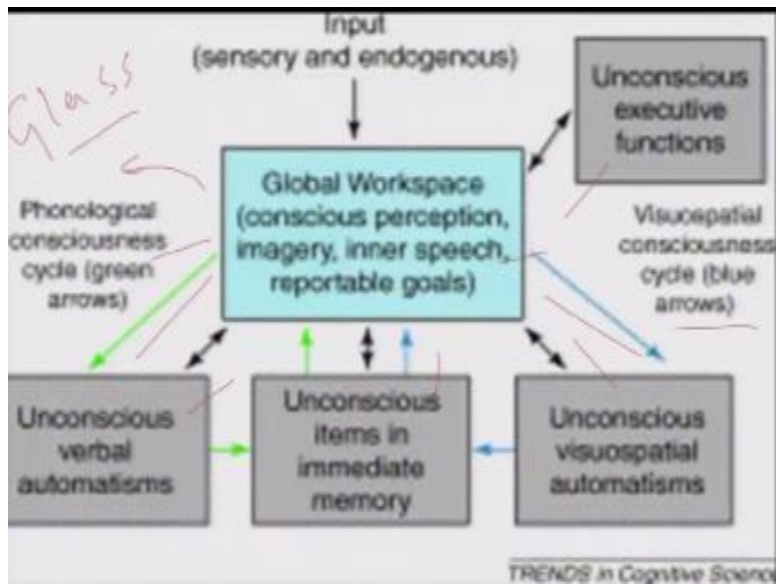
And it will become well now impossible for one to live, so again the same question we come to, does the conscience act only on the behest of unconscious or the intent of will has a separate existence, does the will once initiated further modifies the deeper processes or is bound to it without an independent existence, the awareness of attention, motivational, affective mechanism is will or intent. So if we go back to this slide.

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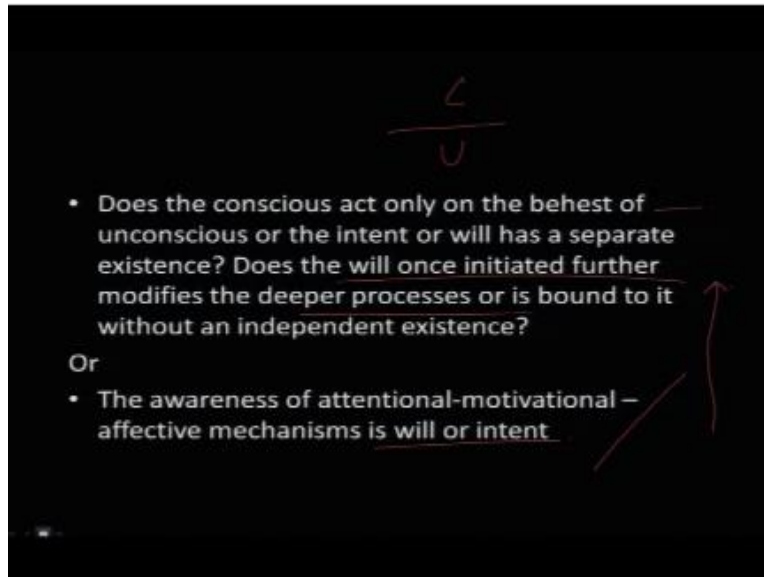


Is this will a product of all this unconscious which it goes back to becomes conscious and then comes back in a feedback or is it independent, independently can it alter this or alter the unconscious this is something which is still undecided.

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Because if it look at the philosophical angle and what people believe there also there is will obviously a man can change himself. But the neuro scientist would not say like this he would say even the desire intent to change comes from the man himself from the unconscious processing and from the unconscious binding of the experiences which have gone in, so again those experiences are coming from external circumstances so it is all linked so and they would say that will does not have a independent existence.

And it is all related and whatever the unconscious mind is trying and the man has no will but that rises the very, very peculiar situation. If there is no will and if people have no control over what they are doing unconsciously or if they are intent also is arising like an involuntary wave from within. So, this is conscious this is unconscious mind and so if the whole thing is like this then where is the word called responsibility

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## Need

- Harmony between varied & diverse

Affective and Cognitive states.

Because then the obviously the justice system will fail and it will fail simply because an everybody will say that neuro science has proven and that I have do not have an independent will, I do not have a intent and I can think only what my unconscious mind is throwing at me and so it so be it so whom will you punish and then everything will crumble because why are we teaching the kids what we are teaching, are we teach then anybody can question that what your teaching the kids in the school in a given system.

Is not the ultimate truth then, there may be in an alternative which you can condition in their mind so then if you keep their different kids and different environment which is a fact also and they grow up well have a different value system their right and wrong will be different from somebody else and they would have no will over what they want to do and what they want to transform and then whatever they do will be ultimately blamed on to the culture.

And culture obviously cannot be punished so there is a fault of the human being, although they are some universals which biology is brought till, till the human being share this common genetic pool and common genetic and folding of mind and brain till that time obviously there will be common right and wrong not the sense of morality but what is beneficial for survival but beyond

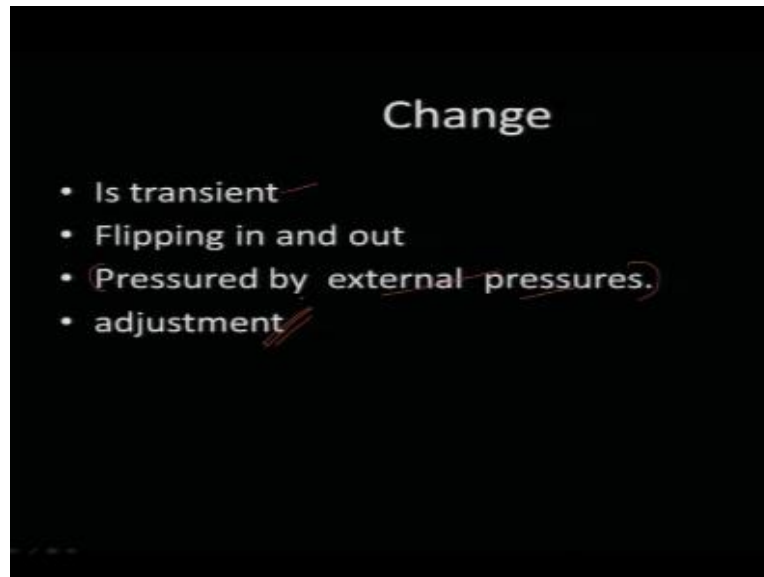
that is all hazy then something what is crime somewhere may not be a crime somewhere else depending that we haven't been taught.

Or a mind does not been condition all education is after all making layers of knowledge which as ultimately layers of conditioning. So, who is going to answer this question so however imaging and other neuro scientific explorations bring out this debate still has not ended like the debit of artificial intelligent and the risk intelligent machine was posing to existing homo sapience. So, let us exam in this just leave this debit for the time being and assume that to transform we need a certain intent and a certain will, this you will understand if we are able to see these two slides.

What is the difference between change and transformation if you understand this then probably we will be able to answer this question of where is whether conscious will intents to involve whether there is or it is just all in the hand of a cyclical unconscious where there is no responsibility well obviously when you decide to do something you have to own responsibility and you have to have accountability about it.

Where is if all at a deterministic system where the unconscious mind is deciding and is a conscious will are intent is a emergent product of the unconscious then obviously there is no accountability a justice system, education clashes. So we do not agree this but we do not agree the other either, so where is the gap? The gap is probably in between understandings the difference between what is change? And what is transformation? Change normally is sort of involuntary.

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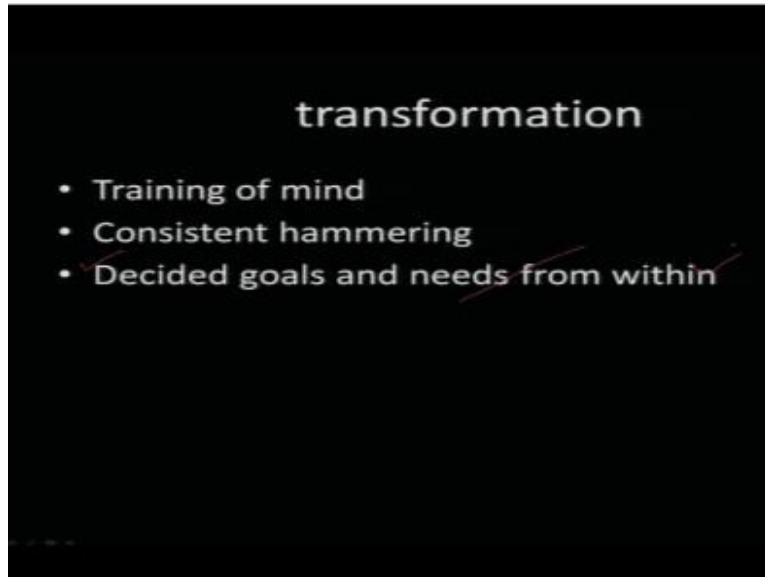
It is largely pressured by this external thing, external circumstances is change, all the time we are changing our mind is changing our neurons are changing environment is changing and so much change is going on, no two moments are same, no two people are same no the same person in two moments is not the same so that but you do not put your real brain to it and you don't want to control every change which is happening we just flow in life this is sort of involuntary and by the external pressures.

Now it is largely transient because as I said the change is so fast and so much that it can, by the time I talk to you the next sentence some change would happen in the air, in me and in something. So it is like flipping in and out so there is a change you may feel you may not feel you keep moving on and it is largely a process of adjustment again if you remember we talked of the assimilation and accommodation in the theory of Piaget.

So adjustment is something which we need to do with change but then what is transformation, transformation is not really change it is a change, but it is not the transient flipping in and out change the seems to be the superficial dependent on the external thing it can come up go down

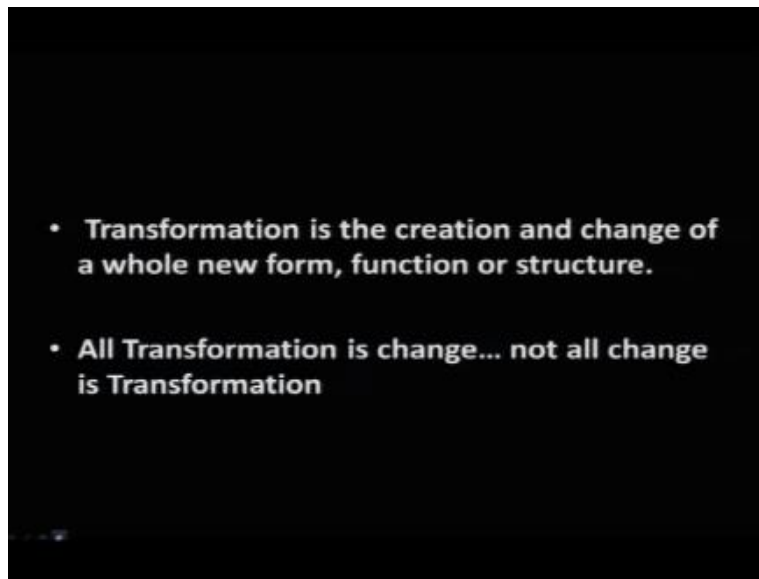
and same thing will be cycling again will transformation is more deep and enduring. It requires certain amount of assertion of will that means you have to decide goals.

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And needs from within from transformation has to come from within it may get triggered by external circumstances.

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But it has to be from within and it requires to considerable amount of training of mind you remember I showed you the first in the first lecture picture of few people all that was happening that the handicap person going up to the Mount Everest, the energy forces doing all that. So the transformation need not necessarily good are bad it can be both ways and it is not necessarily morally superior. It can be bad but let's focused to the one which is beneficial to the most people. The process may be the same after all the terrorist also trains in some mountains, dry mountains of Afghanistan leaving all the comfort, they would survive with small bread and the better.

But they would go and do, and create all the mischief so the end product of anything may be detrimental, destructive but the process may be the same. So, it require the considerable train of the mind the army people, police, sports man, doctors anybody who is decided to do something even if you decided to get selected to a good institute you have to train your mind so the training of the mind is the best line there will be a trigger which may be starting it after that if you require the consisting hammering into your the mind you just cannot say ok, I transform wonderful

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I have decided to transform from tomorrow I am different. Then, you go along with the trying, along with the way you living. If it is not nothing to happen you have to do consistent hammering of your brain.

So once you have decided the goal, you decide about the training mind and do the consistent hammering compared it with the transitory nature of and the flipping in the out of the change. Transformation is the creation

and the change of whole new form, function or the structure. transformation is not only it can be very physical in the engineering the construction in the people know how to transform the garbage can in to the beautiful flower vase people know how to convert and how to lay a beautiful spelling garden over the steam of the dirty water but the people are also know the devil in to the saint.

There are so many examples of it. Valmiki from our own culture was the dacoit. He went on to write Ramayana. We know lot of criminals who transform but we also know saints who transformed to the criminals just you pick up a newspaper you will know, so the devils converting to the saints we know, but we also the saints can converting to the devil and that is the

change and the changes transitory one of the thing we talked about the bright all that may be the change but it get in to the habit of it. So, it is the creation of the whole new form.

So all the transformation is change but not all the change is transformation because change as I said change are more transitory episodes of change of something different largely driven by the external pressure and they you keep changing in the largely involuntary, unconscious whereas transformation can be a change most sustained, requires the continuous hammering and training of the mind, above all you require an intend to it I will ended this and we will continue this in this in the next lecture looking in to the difference of change and the transformation thanks.

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