

Literature and Coping Skills
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Lecture 34
The Culture of Escape: Elusion or Illusion? - II


Hello, everybody, I am Ajit K Mishra, your course instructor for Literature and Coping Skills. As I told you in my last lecture that I will be back with another lecture on the idea of the Culture of Escape: Elusion or Illusion? So, as you all know, I am currently talking about taming substance abuse. In my last lecture, I introduced you to the idea of substance abuse by talking about substance, different types of substances, substance use, misuse and abuse, the indicators of substance use disorder.

And I also talked about why people use substances, what might be the reasons that people feel like using substances. When I was talking about substance abuse, I tried to focus on the idea of the influence the potential impact, or devastating impact that substance abuse can cause to us, our societies, our generations and the world at large, it is very important that we wake up to the problem, the challenge, and do something to overcome this particular problem.

Since this is a major problem, as we all might know and we need to do something about it, the best possible option that we all have is to tame substance abuse, because it has turned out to be a wild beast, which is not going to go until and unless we tame it. So, taming the substance abuse is in fact, a major strategy that we can adopt in order to overcome this problem of substance abuse.

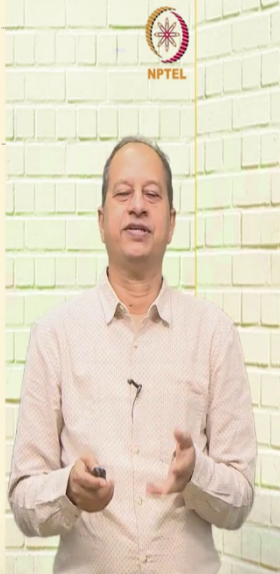

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Taming Substance Abuse



- The Culture of Escape: Elusion or Illusion? -I
- The Culture of Escape: Elusion or Illusion? -II
- Charles Baudelaire, "Be Drunk"
- Charles Bukowski, "The Suicide Kid"


Image Source: Thenounproject





So, today I am going to talk about substance abuse from this particular perspective, that is an extension of the first lecture on the same idea that is; The Culture of Escape: Elusion or Illusion. Because every time we give our reasons for the substance use, we are actually trying to give reasons for escape. So, whether this Escape is an elusion, is an actual one or an illusion, needs to be seen by us. So, let us start with each of these elements.

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Pleasure-Pain Hierarchy



Pain and pleasure are powerful motivators of behaviour and have historically been considered opposites.
—Leknes & Tracey (2008)



So, in this lecture, I am going to introduce you to the idea of the pleasure and pain hierarchy. The moment you come across this particular set, that is pleasure and pain, you suddenly begin to value one side effect, while devaluing the other side, we generally value pleasure. By

devaluing pain, we generally recognize pleasure as our friend, and by recognizing pain as our enemy. So, we do not like pain, we do not want pain, if there is anything that we want is pleasure, not the pain. So, this particular attitude or approach towards pleasure-pain, binary or dichotomy is the result of this particular hierarchy.

So, the pleasure and pain hierarchy in which pleasure is given an advantage over pain, pleasure is recognized, and pain is not. So, pleasure is cherished and pain is shunned. Why is it so that we humans, who are born with certain basic emotions, like happiness, sadness, anger and fear, so when it comes to happiness, we have the pleasure element there.

When it comes to sadness, we have the pain element there, even though we know that we are born with basic emotions, so also our fellow humans, we still shun this particular thing that we call pain. Why is it so? Why is there a hierarchy in which pleasure is at an advantageous position while pain is not? Why is pain such an avoidable thing? Why is pain such an evil thing, so that we all want to avoid it at any expense? Why is it so? So, let us take a look at this dichotomous relationship.

So, that is pleasure, it always takes the upper part of this life in which we find pain relegated to the lower part, the darker realm. So, pain is associated generally, where the darker realm, to the darker recesses of the human experience or human psyche, while pleasure is associated with the brighter realm or the brighter side.

So, pleasure enjoys an advantageous position in comparison to pain. But why is it so, that pleasure is at an advantage over pain? Is it one of the reasons because of which the pleasure or pain hierarchy exists? Pain and pleasure are powerful motivators of behaviour and have historically been considered opposites.

So, therefore, they are treated as binaries. Therefore, they share a dichotomous relationship or a dialectical relationship between them. They are historically treated as the opposites and natural opposites of each other, in which pleasure is at an advantage and pain is not, in which pleasure is a sought-after experience, feeling while pain is not. Pain is a type of feeling or experience that needs to be avoided at any expense.

That is how we all have grown up. By appreciating or glorifying pleasure and shunning pain, this particular statement issued by Leknes and Tracey, in one of their research articles, certainly brings some face to face with this particular question of the relationship between

pain and pleasure, because both of them are powerful motivators of behaviour. They are powerful motivators of behaviour.

But at the same time, they have been historically considered to be deposits. So, I will walk you through these ideas, so that we get to know this relationship between pleasure and pain, and we get to understand people's approach towards drug use better, so that we can also understand drug abuse better.

So, rewards and punishments are defined as something that an animal will work to achieve or avoid, respectively. So, when it comes to the pleasure and pain dichotomy or binary, we generally focus on these two things, they are also dichotomous rewards and punishment. So, rewards and punishment are actually defined as something that an animal will work to achieve or avoid.

So, if I want to achieve something, it has to be a reward, not punishment. So, nobody works to get pain. We get pain because of accidents. They come to us accidentally and we do not want them. We want them on certain occasions or certain special occasions. I will be coming to those issues after a while, but generally we do not want pain, all we want is pleasure, not pain. So, if an animal is motivated to achieve something, it is pleasure, not pain.

Similarly, if an animal is motivated to avoid something, it is pain, not pleasure, animals do not get motivated to avoid pleasure and achieve pain. So, that is an interesting proposition. Pleasure represents the subjective hedonic value of rewards. For example, how I perceive a certain reward.


So, it is actually a subjective experience. The subjective hedonic value of rewards is represented by pleasure, that means if a person is extremely happy by getting something very small, it has to be a subjective experience, because the person is treating the hedonic value of that reward in a very different way than how somebody else might have treated that.

So, therefore, it is the subjective hedonic value of rewards. That is represented by pleasure. The term pain encompasses, both the hedonic that is suffering and motivational, avoidance aspects of painful experience. So, it is not that pain does not have any hedonic value at all. It has a hedonic value, so that is suffering and which is not an enjoyable experience, which is not a sought-after experience.

So, the term pain encompasses both of them, therefore, pain is much more complex in comparison to pleasure. So, pain encompasses, those the hedonic and the motivational aspects of a painful experience, the hedonic aspect that is suffering, and the motivational aspect, avoidance to avoid. So, therefore, pain is more complex than pleasure.

Then in seeking pleasure and avoiding pain, which is extremely important for our survival. These two motivations actually compete for preference in the brain. That is an interesting relationship between pleasure and pain, because on one hand, we are seeking pleasure on the other, we are trying to avoid pain, because it is very, very important for our survival. Therefore, there is some kind of competition between pain and pleasure in the brain.


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Pleasure vs Pain

- In his *Rhetoric*, Aristotle remarks, “we may lay it down that pleasure is a movement, a movement by which the soul as a whole is consciously brought into its normal state of being; and that pain is the opposite”
- Freud’s pleasure-pain principle emphasizes the instinctive seeking of pleasure and avoiding pain to gratify biological and psychological needs
- Pleasure and pain are basic to conditioning in terms of reward and punishment

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So, that brings us to the question of pleasure versus pain, so that we can understand whether they are actual binaries, they are actual opposites or they have something in common, they have a common meeting ground where they interact and they inform each other. But before that, we need to understand this dichotomous relationship which is grounded biologically, psychologically and even culturally, so that we can understand the pleasure and pain hierarchy better.

So, I will start with a very famous saying, by Aristotle, the great Greek philosopher, who in his *Rhetoric* has remarked that, “we may lay it down, that pleasure is a movement, or movement by which the soul as a whole is consciously brought into its normal state of being; and that pain is the opposite.” So, if the soul as a whole is consciously brought into the


normal state of being, by pleasure, not by pain, that means pleasure is more important than pain. So, Aristotle was one of those early thinkers, who began by valuing pleasure over pain, so preferring pleasure to pain as we all do today.

Then, if we come to Freud, who is very, very popular for his pleasure pain principle. Freud emphasises the instinctive seeking of pleasure and avoiding pain to gratify biological and psychological needs. So, the pleasure pain principle tells us that there are few biological and psychological needs, for pleasure not for pain, therefore, we seek pleasure, not pain, we avoid pain.

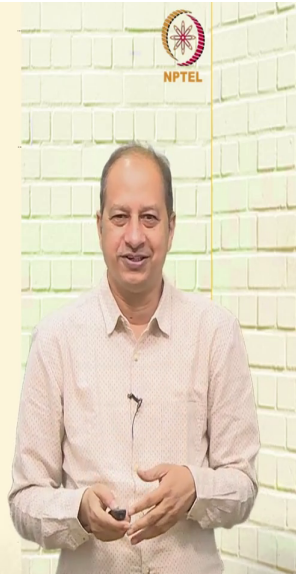
So, Freud extended this particular idea that pleasure is something that motivates us to seek it, and pain is something that demotivates us to avoid it, it motivates us in a way, so as to demotivate us, so that we can avoid pain. And then, we come to this particular thing that says pleasure and pain are basic to conditioning in terms of reward and punishment. So, whenever we receive a reward, the pleasure mechanism in the brain gets activated, it seeks more and more pleasure.

Therefore, it becomes basic to our conditioning. If we go by Pavlov's or Thorndike's theories, especially of conditioning and learning, we can understand this well, that if we continue to get reward, we will become addicted or used to rewards not punishments, and then reward is something that, in fact, gives us pleasure, not punishment. So, therefore this pleasure-seeking mind or brain or the body will continue to receive rewards not punishment.

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- Jeremy Bentham's concept of utilitarianism is based on 'felicific calculus' for the calculation of the degree of pleasure
- We are evolutionarily designed for survival, and pleasure inducing chemicals (dopamine, endorphin) restore homeostasis in the body
- The 21st-century world we live in can be characterised as an 'analgesic culture', one in which we work to avoid pain and distress (Christopher Eccleston)
- The urge to avoid pain is much more immediate than to seek pleasure



Then we come to Jeremy Bentham, known for his utilitarianism, who developed this felicific calculus, with the help of which he wanted to try to measure the degree or amount of pleasure a specific action causes, so that the degree and the amount of pleasure can be calculated not pain is a felicific calculus, again, reaffirms our preoccupation with pleasure, not pain.

Then, as we come to this particular thing, we all know that we are evolutionarily designed for survival and pleasure inducing chemicals like dopamine and endorphin restore homeostasis in the body. So, homeostasis is a balanced condition in which a person is not experiencing any challenge to the being.

So, the balance, the homeostatic balance needs to be restored and maintained in the body so that we continue to feel good, and our pleasure experiences not only enhance but also restore the homeostatic balance in the body through the pleasure inducing chemicals like dopamine and endorphin.

So, therefore, for our survival, it is important that we continue to get pleasure so that we continue to survive because we are evolutionarily designed to survive. And in order to survive, we need more and more pleasure rather than pain. The 21st century world we live in, can be characterised as an analgesic culture, painkiller culture, one in which we work to avoid pain and distress; so that tells us about our contemporary condition which is nothing but an extension of the age old preoccupation with pleasure. The age-old pleasure-seeking motivational behaviour and pain avoiding motivational behaviour. So, the analgesic culture that we all live in. Christopher Eccleston has talked about this particular culture.

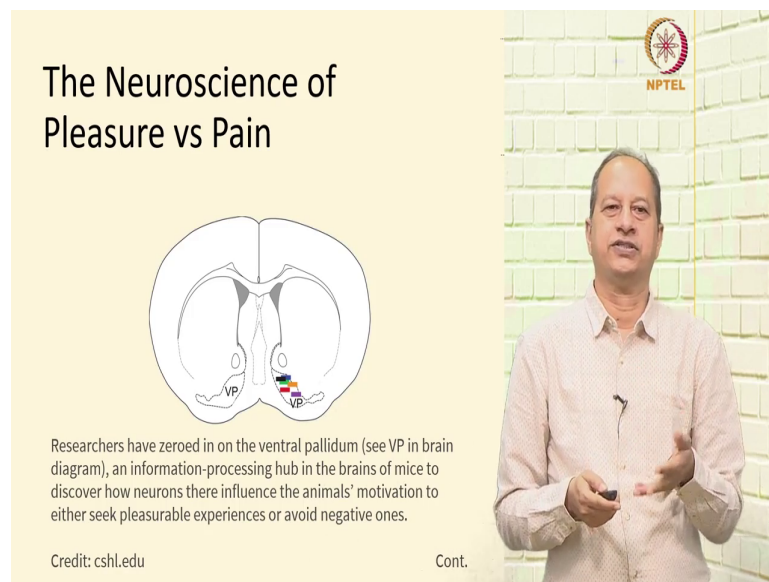
As the director of Pain Research Centre at the University of Bath UK, Eccleston has, on the basis of his research findings, been able to establish the fact that we are excessively preoccupied with pleasure to such an extent that we have promptly converted our culture into an analgesic culture. It is a painkiller culture that is out to kill pain at any expense, at any cost. Because we do not like pain, we hate pain, and suffering, we love pleasure.

So, therefore we will do, we can go to any extent, we will do everything to ensure pleasure for us. And we can do anything, we can go to any extent to kill pain, so that we can derive and continue to derive pleasure. So, this may sound valid or as a valid proposition, because for our survival, it is very, very important that we continue to derive pleasurable experiences, so that the homeostatic balance is maintained in our bodies.

But this has turned out to be not only a preoccupation, but an obsession. So, now from that preoccupation with pleasure, it has come to be an obsession. So, the urge to avoid pain is much more immediate than to seek pleasure; so, that is the impact of this analgesic culture that we are out to avoid pain at any expense, so that we can seek pleasure.

So, if there is a choice before me to avoid pain and seek pleasure, I will first avoid pain and then seek pleasure, because I know that as long as I am unable to overcome the pain, I will not be able to seek pleasure properly. So, therefore that is an urge and it has become an obsession now.

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Now, brings us to another dimension of this relationship, pleasure, pain relationship or dichotomy. If we have to understand this phenomenon better, we need to focus on the neuroscience of pleasure versus pain, so that we go deeper into this particular dichotomy. So, on the basis of some current research findings of a study that was conducted at this particular lab, the Cold Spring Harbor Lab, in which a group of researchers studied the pleasure seeking and pain avoiding behaviour of animals by studying such behaviors in mice.

And while studying such behaviour in mice they zeroed in on the ventral pallidum, popularly called the VP, in the brain diagram you can clearly see that, this has been marked VP in the brains of mice to discover how neurons there influence the animal's motivation to either seek pleasurable experiences or avoid negative ones.


So, until now, we have moved or past through the phases of history to know that Aristotle was preoccupied with pleasure and then Freud was also preoccupied with pleasure, Bentham, and Pavlov, they all were preoccupied with pleasure that brings us to the Eccleston's assumptions that we have become an analgesic culture, we are preoccupied with pleasure and we all want to avoid pain at any expense. This particular study was conducted in order to find out what kind of neurons actually influenced this particular motivation. This motivation to seek pleasure and avoid pain, this motivation in animals including humans.

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- In the research findings of Stephenson-Jones et al., 2019 published in the journal *Neuron* in 2019, It was reported that a specific brain region called the ventral pallidum (VP) appears to drive an animal's motivation to seek pleasure or avoid pain
- These CSHL Lab researchers discovered that GABAergic "reward neurons" and glutamatergic "punishment neurons" in the VP influence an animal's motivational drive to seek pleasure or avoid pain

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So, on the basis of the findings of this study, the researchers reported that, and the findings of their research was reported in an article, which appeared in the *Neuron* Journal in 2019. So, in 2019, these researchers published their findings, and they said that the specific brain region called the VP the ventral pallidum appears to drive an animal's motivation to seek pleasure or avoid pain.


So, that is exactly the region which drives our motivation to either seek pleasure or avoid pain, that means both the activities, both the actions are in fact are driven by the same brain mechanism, the same brain region that is the ventral pallidum, we either seek pleasure or avoid pain, they mean the same and therefore, they are in fact determined by the same brain region, the VP region.

So, the Cold Spring Harbor Lab researchers discovered that GABAergic neurons which are otherwise called reward neurons, and then glutamatergic neurons, that are called punishment neurons in the ventral pallidum influence an animal's some motivational drive to seek pleasure or avoid pain. So, the reward neurons, the GABAergic neurons, they generally motivate us to seek pleasure and the glutamatergic neurons, the punishment neurons, they generally motivate us to avoid pain. So, these neurons, the GABAergic and a Glutamatergic neuron in fact, motivates us to seek pleasure or avoid pain.

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- GABA appears to drive pleasure-seeking behavior, while glutamate reinforces avoidance learning designed to avoid pain
- GABAergic VP neurons appear to drive physical movements that result in a reward, and glutamatergic VP neurons appear to drive movements (or lack thereof) associated with fight-flight-or-freeze behaviors to avoid pain or punishment.

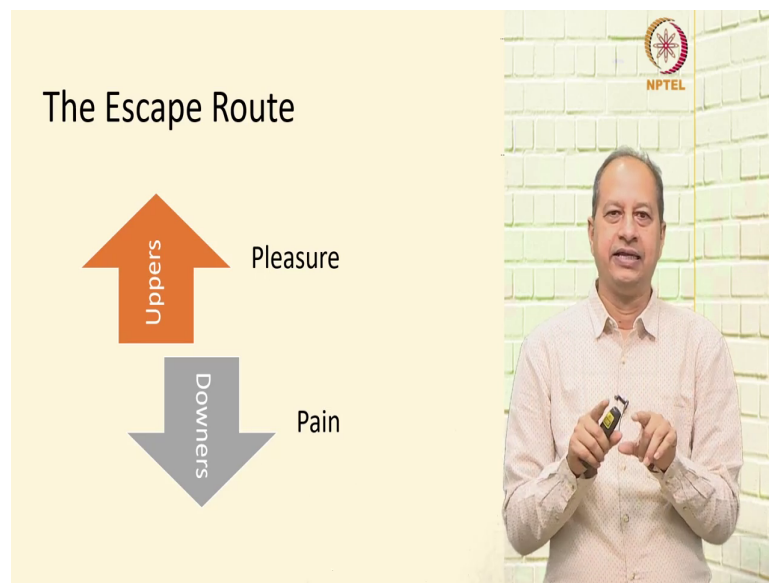


Moving on. According to these researchers, GABA appears to drive pleasure seeking behaviour as I told you, while glutamate reinforces avoidance learning designed to avoid pain. So, GABA neurons help us seek pleasure and glutamate neurons help us reinforce our avoidance behaviour so that we can continue to avoid pain. And then there are GABAergic VP neurons that appear to drive physical movements that result in a reward.

And a glutamatergic VP neuron appears to drive movements or in the lack of such movements that are associated with fight flight or freeze behaviors to avoid pain or punishment. Now, with the help of this study, we can understand our flight, fight freezing behaviour. Well, we also understand the motivations that drive us to seek pleasure and avoid pain.

So, now we have new scientific evidence to coincide with what Aristotle said or what Bentham believed in or what Pavlov also believed in and Thorndike insisted upon. So, this particular research helps us understand this particular phenomenon, the pleasure or pain hierarchy better.

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So, that brings us to the question of the escape route. If you remember, we talked about why people use drugs, because of this particular thing that I call the escape route. We all want to escape, escape from what and escape into what. So, there are two kinds of escapes that I am going to talk about, the first kind of escape is focused on escape into. And the second kind of escape is escape from.

So, the first kind of escape is, in fact, an escape into the pleasure domain or the pleasure realm, because we want to derive more and more pleasure, as you all know, we want to derive pleasure because it is important for our survival. And this gradually turns out to be an addiction. And that is one big reason why we have become obsessed with pleasure and we have become, you know, uncomfortable with pain.

And that is one big reason why we have fallen in love with this analgesic culture, because we want to avoid pain at any expense. So, we want to escape into more and more pleasure. As I told you that once the impact of some experience, whether it is a pleasurable experience, or a pleasurable experience induced by drugs, once that particular period is over, that moment is over, we will begin to experience withdrawal symptoms, we will try to derive more and more pleasure so that we can keep our pleasure journey alive.

So, this pleasure-seeking behaviour will create a cycle. And that will force us to seek more and more pleasure. And that is one big reason why most people who have fallen into the enticement of pleasure will continue to seek more and more pleasure and when there is no

pleasure, it is not coming from any source, such people will depend on substances to create artificial conditions from where they can derive pleasure.

So, with the help of uppers such people derive pleasure. So, this is an escape into pleasure into the land, into the realm of pleasure because we all want to be there to derive more and more pleasure. On the other hand, when we come to the other side of it, the other type of escape, we come to pain. Now, this is not an escape into, this is an escape from, because this is something that we do not like, this is a condition in which we do not want to see ourselves in.

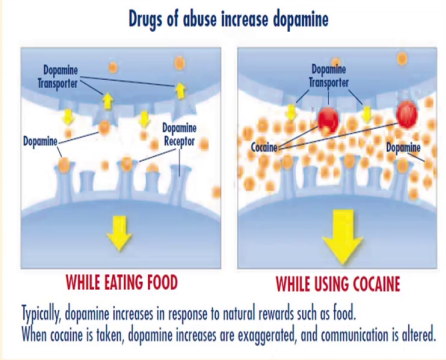
Therefore, we promptly want to leave this condition and switch into something else. We want to escape from this particular state, the pain state and that is exactly what we have learned through the annals of history, that we have gradually become preoccupied and obsessed with pleasure and we have come to shun pain at any expense.

So, we escape from pain again by taking substances, because they are very popularly called downers. So, we have the uppers, the stimulants and the downers the depressants. So, when there is excessive pain, and people who do not know how to emotionally regulate, emotionally manage this particular experience, they promptly find ways that will give them immediate relief in the face of unbearable or unmanageable pain. That is the reason why most people also take substances or drugs.

So, this also offers an escape route, through the downers, they down your experiences of pain and suffering. So, that is a very interesting proposition. It is an escape either way, it is an escape for the sake of pleasure, it is an escape for the sake of pain, in one we escape into pleasure, the other we escape from pain. But ultimately, it is the grand escape that we all are struggling with. So, at least a large number of the population in the world is struggling with it.

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The Escape Route



Drugs of abuse increase dopamine

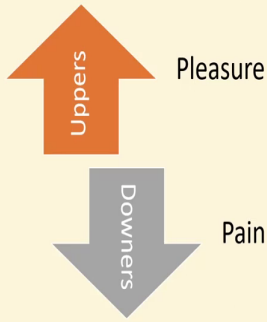
WHILE EATING FOOD

WHILE USING COCAINE

Typically, dopamine increases in response to natural rewards such as food. When cocaine is taken, dopamine increases are exaggerated, and communication is altered.

The diagram illustrates the dopamine pathway. On the left, 'WHILE EATING FOOD', dopamine (orange dots) is released from a neuron and binds to dopamine receptors (blue Y-shapes) on a postsynaptic neuron. On the right, 'WHILE USING COCAINE', cocaine (red dots) blocks the dopamine transporter (blue Y-shapes) that normally reabsorbs dopamine, leading to a much higher concentration of dopamine in the synapse and exaggerated receptor activation. Labels include 'Dopamine Transporter', 'Dopamine Receptor', 'Dopamine', and 'Cocaine'.

The Escape Route



Uppers → Pleasure

Downers → Pain

The diagram shows two arrows. An orange arrow pointing upwards is labeled 'Uppers' and 'Pleasure'. A grey arrow pointing downwards is labeled 'Downers' and 'Pain'.

So, when we look at this particular image that is taken from an NIDANIH, the National Institute of Drug Abuse, so we derive pleasure and we after a certain period we become resistant to pleasure, because we derive, we develop some kind of tolerance towards pleasure; so that the amount of pleasure that used to please us, gratify us earlier, will not be sufficient.

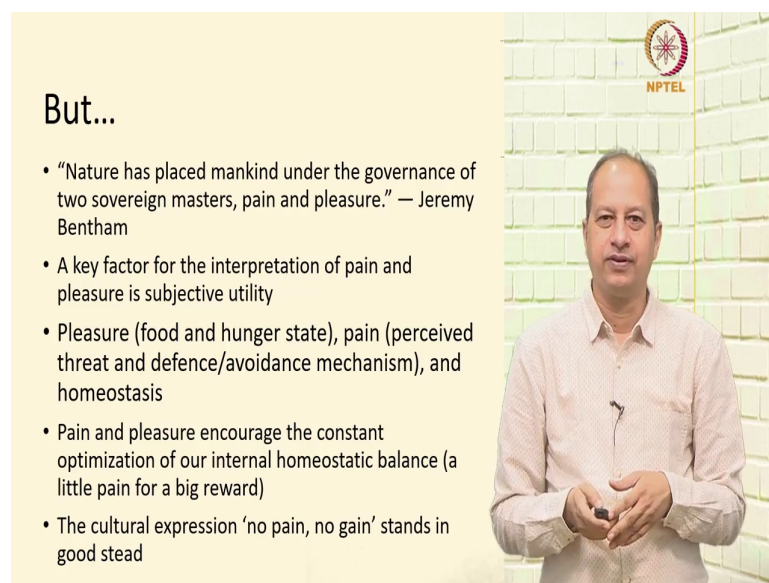
Because we have developed some kind of tolerance for that, that amount of pleasure will not help us anymore. So, we need to increase the level of that pleasure. And in order to do that, we need to do things that will artificially induce that particular experience. And that is the reason why most people depend or most people take to substances or drugs. So, on your left,

you can see while eating food, the dopamine mechanism gets activated. That is the reward system. So, the dopamine mechanism is activated.

But on the right while using cocaine, the dopamine system is exaggerated. And communication is also altered, so that gives us more and more pleasure. Something that we cannot derive from those pleasurable activities like eating food and drinking and doing a variety of other things that once used to give us pleasure, will not be sufficient enough to give us pleasure anymore.

So, we want more and more pleasure. So, this pleasure obsession is one big reason why most people take to substances, so, that brings us back to the escape route again. So, pleasure and pain turn out to be our escape routes. So, in either ways, we are escaping, we are not living, we are escaping.

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But...

- “Nature has placed mankind under the governance of two sovereign masters, pain and pleasure.” — Jeremy Bentham
- A key factor for the interpretation of pain and pleasure is subjective utility
- Pleasure (food and hunger state), pain (perceived threat and defence/avoidance mechanism), and homeostasis
- Pain and pleasure encourage the constant optimization of our internal homeostatic balance (a little pain for a big reward)
- The cultural expression ‘no pain, no gain’ stands in good stead

So, but then we need to think about these aspects as well. For example, when we take a look at this famous quote issued by Bentham, the philosopher popular for his utilitarianism, philosophy, nature has placed mankind under the governance of two sovereign masters: pain and pleasure. Now, that is a wonderful saying, because it brings us face to face with the reality that pain and pleasure are not dichotomous, they are complementary.

Until now, I was talking about how we have grown up with the idea that pain and pleasure are dichotomous, they are antithetical to each other. They are binaries, they are opposites to each other. And that is exactly how we have grown up biologically, psychologically, and culturally.

And we will have come to believe that particular thing, and with the help of the CSHL lab research, we also got to know how there are certain neurons in the brain that motivate us to either seek pleasure or avoid pain.

But when it comes to the relationship between pleasure and pain, we need to acknowledge the fact that they are our natural governor's, they govern us, they are the sovereign masters; so, that is how we can begin to take a different approach or we can begin to adopt a different approach to the whole issue, the whole controversy, the whole debate, surrounding the relationship between pleasure and pain.

So, our key factor for the interpretation of pain and pleasure is subjective utility. For example, if I have a bigger goal right in front of me, which requires me to take smaller pains, I will do that, because if I go by those past research that suggests that there is on your logical basis through our pleasure seeking and pain avoiding behaviors, of course.

If I can see the bigger goal as a reward, then I will not mind taking some pain on my way to achieving that bigger goal; so that way, pleasure also turns out to be something of subjective utility. And then pleasure, food and hunger state, pain, perceived threat and defence or avoidance mechanism or state and homeostasis, they are interrelated, they are so closely related to each other that we cannot try to understand them by isolating each one of them.

For example, when somebody is extremely hungry, the hunger state can be overcome by taking food. The moment somebody takes food, the homeostasis in the body is restored and the person will feel better. Similarly, when somebody is perceiving some threat, the threat mechanism is also activated.


The threat mechanism helps the person to either defend, fight, or avoid flight so that the person's survival existence can be ensured, that is also a form of homeostasis. And that tells us that pleasure and pain in fact, to a great extent perform the same functions. It is not that pleasure gives us, helps us restore the homeostatic state in our bodies and pain does not, that is not the case.

So, which we can derive from this particular assumption. Pain and pleasure encouraged the constant optimization of our internal homeostatic balance. That is why pleasure and pain are not adversaries. They are not opposite to each other. They are, in fact, complementary to each other. So, whenever I am ready, I am prepared to take a little pain, because I can see a big

reward right in front of me, that really tells me that it is a combination of pain and pleasure. I am taking pain because I want pleasure.


So, that is the reason why the cultural expression, no pain, no gain, stands in good condition. Now, we can in fact, assign a greater amount of meaning to this particular statement, which is very, very popular, which is popularly used in our everyday lives, everyday exchanges, no pain, no gain. So, pain and gain, pain and pleasure are very closely related things, experiences. So, therefore, there is absolutely no need for us to approach them in an isolated manner.

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But...

- To maintain homeostasis, animals must aim for what Aristotle referred to as the 'Golden Mean' — that is, the right balance between pleasure-seeking and pain-avoidance
- In neuroscience, prominent addiction researchers advocate a 'hedonic Calvinistic' approach to pleasure, in which the use of the reward system is restricted, as they believe that unregulated pleasure-seeking might lead to addiction
- Twisted dopamine: pain to pleasure via addiction
(Based on Jon-Kar Zubieta et. al. study on pain and pleasure)



And then again, a few other things that reaffirm our argument that pain and pleasure are complementary, they are not antithetical. So, to maintain homeostasis, animals must aim for what Aristotle referred to as the Golden Mean, that means for a person to be morally upright for a person to be extremely good at moral behaviour, according to Aristotle, one needs to create a Golden Mean, that means a balance between pain and pleasure.

So, Aristotle did not want us to shun pain in favour of pleasure. He in fact, wanted us to create a balance between pain and pleasure, so that the Golden Mean can be created or established, so that there is a balance between the pleasure of seeking, which is not very high behaviour and pain avoidance which is not a very rapid, a very strong behaviour. So, there needs to be a balance between these two types of behaviors.

And then we come to some other findings in neuroscience. Prominent addiction researchers advocate hedonic Calvinistic approach to pleasure, in which the use of the reward system is restricted as a belief that unregulated pleasure seeking might lead to addiction and that is a fact.

That is exactly what I meant when I showed you that that image of dopamine being released from the brain when somebody is taking food and when somebody is taking cocaine, because pleasure seeking behaviour will create a vicious cycle, which will force people to seek more and more pleasure by upping the level.

And that might lead to addiction. And that is one big reason why several people take to addiction or drug or substance abuse. So, then this twisted dopamine, pain to pleasure via addiction can happen if we do not take care of that particular thing that means pain to pleasure via addiction in which dopamine is twisted.

On the basis of the research by Zubieta and others, we come to know that pain and pleasure experiences lead to the secretion of dopamine. It is not that dopamine is only a pleasure inducing brain chemical. This particular research establishes the fact that the same brain chemical is also released when somebody experiences pain, that means when somebody is experiencing pain or pleasure, the same brain chemical dopamine is released.

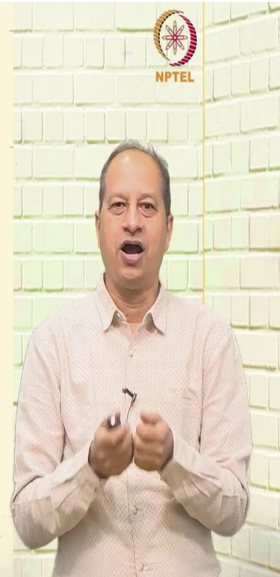
So, if dopamine can, in fact, give us pleasure, so if we twist the dopamine, then we can see from pain to pleasure via addiction, and that is one big reason why people in order to avoid pain use depressants. But if this study is taken and if we go by the findings of this study, we can very safely say that pain is relieved through drugs, that also give us a tremendous amount of pleasure.

So, the depressants, which otherwise are believed to numb the senses, actually give us a great amount of pleasure. So therefore, twisted dopamine, from pain to pleasure via addiction; so that is how we get to know about this particular aspect of the pleasure and pain relationships.

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That brings us to the end of this lecture. I hope it has helped you understand the ideas that are associated with substance abuse. And with these ideas in the backdrop, we can approach the other two sections in this module. In my next lecture, I am going to talk about Charles Baudelaire's "Be Drunk" and I am going to focus on some other dimensions of substance abuse. And I am also going to talk about how we can devise certain coping skills and strategies to deal with this particular hounding problem. Thank you for joining me.