**Introduction to Cognitive Psychology**
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**Lecture – 29**
**Prospect Theory of Decision Making**

Welcome back friends, we are now into the second lecture on Decision Making and as you know decision making is a complex process compressed quality process. So, it follows from reasoning and judgment. And so, in the last lecture on decision making what we saw is what is decision making. And so, the definition that I provided you there is that this is an making is basically a process of may making a choice among a number of alternatives which have been given by the judgment process.

Now, when we make this choice in decision making, this generally happens in terms of or in the presence of some kind of a risk or some kind of a uncertainty. And the reason that people make or the reason for these uncertainties that people make decision into is the fact that people are humans, that humans do not have all the information which is necessary for calculating a choice, for calculating the effectiveness of a choice and.

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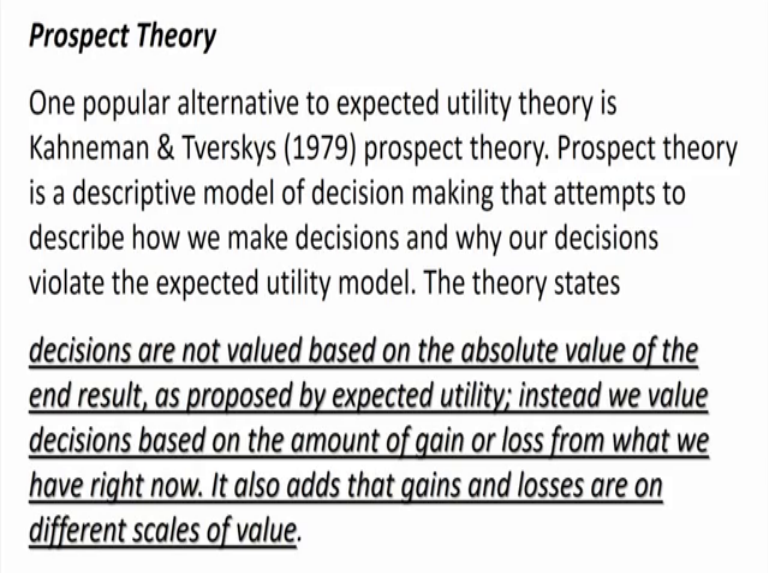


So, they tend to run into irrationality or irrationality of choices. Beside that we also discussed the idea of something called the expected utility theory. And this expected utility theory which has been borrowed from economics basically suggests that people's

choice which are which should be rational or ideal is basically dependent on the utility of a particular option and the probability of happening of this option.

Now, what do I mean by this? Now, generally this is in making models that we tend to study at this level are 2 in nature. The first kind of decision making model are called the normative models or the prescriptive models and the prescriptive models are those models of decision making which are supposed to be followed or which are supposed to be utilized in making a decision; so given the fact that judgment has given us 4 or 5 different choices which are in front of us. The normative model provides us certain guidelines which needs to be followed for making choices and if we follow and it is a guarantee that if we follow these guidelines, the choice all will always be rational.

Now, what is a rational choice? A rational choice is the one which give bridge guarantees that tenement of a final goal and it gives us the maximum gain or it maximizes our gain and also minimizes our losses. So, it is a choice in which the gain the chances of gains are there, but then the chances of losses are very minimum and. So, rational choices are those choices which provide maximum utility in the presence of maximum probability of occurrence of an even.

Now, an expected utility theory, the idea of expected utility theory says that those choices which provide us the maximum utility then for a particular option and with the availability the highest probability of that option happening is the most rational choice. What do I mean by this? Given the fact that there are 4 or 5 different choices, which come out of a particular cognition, now what we tend to do is rate the utility of each choices, each choices present a certain goodness or present a certain benefits and certain downside of it.

So, what we tend to do is look at the benefit of each choice and the downside of it and equate them. This is called utility or the use of a particular choice. With that each of this option will also have a probability of occurrence. For example, some of these choices tend to occur more frequently than the other number of choices or the other kind of choices. So, and the irrational choice are according to the expected utility theory the rational choice will be a choice which has maximum occurrences, the highest probability of occurrences and also the highest expected utility. Now, given the fact that some choices have very high utility and very low probability we should not make this choices.

We should only make those choices which has a decent amount of probability of occurring and also give us a decent amount of utility.

So, if a choice has highest probability of occurring, but it gives us the very low utility we should not chose this choice. On the other hand if a choice has highest utility and lowest occurrence we should not make that choice. A rational decision maker will make a choice which gives them a certain level of utility and also a very good level of probability of occurrence and so, this is what the expected utility theory really works. Now, the problem is these expected utility theories are always violated by humans. The reason being that humans do not have enough information, are not calculators, not statisticians to calculate all the options on which to be the choices to be made and.

So, they go under or they violate these principles of expected utility and they create violations of them. And one of the violations that we discussed in the last class is called preference reversal. It basically means that if people tend to prefer choice a in certain situation, they reverse their choice in certain situation b or c.

Now, the reference reversal theory says that if somebody likes choice a or somebody likes option a better than b, then no matter how the situation changes it should stick with a. But, then as humans we do not stick to that which keep on changing our preference from situation to situation and so, this is a violation of the expected utility theory.

Now, why does this happen? The reason I have given before, this happens because humans do not have all the information which is necessary for making the computations and neither even if they have the information, they are lazy or they have some kind of a deficiency in organizing all this information and coming up with the best choices. And so, humans then do not follow the normative or the prescriptive model of generally do not follow the prescriptive model of decision making.

So, then what do they follow? They follow a model of descriptive model of decision making. What is the descriptive model? The descriptive model of decision making is a model which generally humans follow while making decisions and it has it at times tends to give irrationality or choices of irrationality. So, people then tend to make choices which are of low yield and tend to then suffer and. So, this kind of people's choice is making or people decision making are not always rational, they are irrational. And under this irrationality is not too much of a harm to people and so one of the theories which has

been proposed by the Nobel Prize winner Tverskys and Kahneman in 1979 what is called a prospect theory.

This is a descriptive model of decision making and it takes into account of the fact that humans are different from computers and they do not generally have these expected utilities and probabilities combining and making decisions onto it. So, then let us look at what is prospect theory.

Now, one of the popular alternate is to the expected utility theory is provided by a Nobel Prize winner Daniel Kahneman with his colleague and Amos Tversky in 1979 and which is called the prospect theory. What is the prospect theory? Say the prospect theory it is a descriptive model of decision making that attempts to describe how we make decisions and why our decisions violate the expected utility model and.

So, what is the statement of this theory? The statement of this theory says that decisions are not valued based on an absolute value of the end result. The way we make decisions generally are not valued, it is utility is not valued as in terms of what the end result would be or what the final value attained after the decision choices should be. but, this theory has proposed by expected theory instead we value decisions based on the amount of gain or loss from what we have right now.

So, people do not look at decisions or people do not look at the utility of a decision or the desirability of a decision in terms of the end value, in terms of the final value that you are going to get. But, people make decisions in terms of the value that they are going to get from where they are, from the reference point of where they are. So, people make these value decisions in terms of the amount of gain or loss that they are going to have from the point of time or from the point where people are right now.

So, let us take that take the fact that if playing a gamble gives you 10 rupees and if you lose that or if you do not if you win that gamble you get 10 rupees, if you lose the gamble you get you lose 10 rupees. Then in terms of expected utility theory the 10 rupees is the final value and. So, that is what the decision criteria should be followed on to that.

But, then we as humans we decide this 10 rupees the value 10 rupees is not the same value on which you make decisions. What we tend to do is even the fact that if you have

5 rupees in your pocket, what you tend to do is that the expected value or the expected value of this outcome then becomes 5 rupees. Because, this is because if you have if you lose still you will have 5 rupees which is with you and so, it does not matter too much. So, from where you are standing from there you look at the final price.

So, winning 10 rupees when you have 5 rupees is not that lucrative in terms or the fact that if you lose the 10 rupees right and so, that is the difference which is there. So, in terms of prospect theory what people tend to do is make these evaluations of final value of an outcome not based on the final value from the starting point, but from the reference point from the point of how much they have at the point of making a decisions.

So, when you are making a decision at that point of time how much good that you have or how much backup that you have, from there we make the assessment of gains and losses on to any gamble. It also adds that gains and losses are on different scales of value. So, one thing that the that the prospect theory says is that people do not make evaluations of gains and losses right from the beginning to the end value of a gamble of a n value of a decision. But what they tend to do is these decisions are based or based on the fact that how much people have previously are people how much good people have before they make a decision.

So, somebody who has money and whose gambling, he will gamble more or less depending on how much money he has, but somebody who has no money in he is choices we will be different. So, people do not make this kind of calculations in absolute terms, but rather from a reference point.

The second prediction of the prospect theory is that the gains and losses are on different skills or value for example, the scale of value the in terms of gains people perceive gains as lower value, but losses has higher value. So, losing 10 rupees note gives you more losses or let us you feel that you have lost more than in terms of gaining 10 rupees. Given the fact that if today morning you get a 10 rupees note from somewhere, you the amount of happiness that you get will not be equivalent to the fact that if you lose 10 rupees and at some point of time.

So, the amount of feeling, the amount of happiness, the amount of happiness, the gain will not be equivalent to the sadness that you get out of losing that value and. So, this is

the kind of things or this is the kind of predictions in the prospect theory actually goes ahead and predicts. Now the value of your attached to gain increases.

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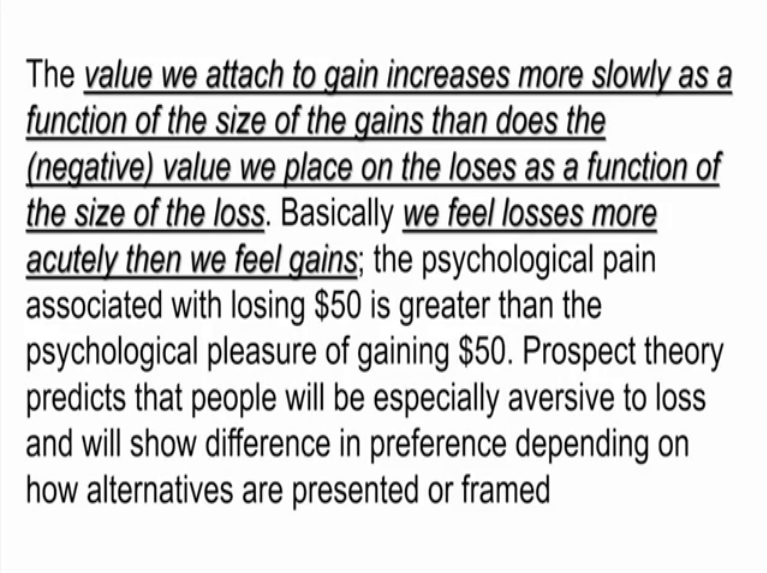


More slowly as a function of the size of the gains than does the negative value we place on the loses as a function of the size of the loss and. So, what it basically says is that the gain as the amount of gain increases the function of gain increases very slowly. So, larger gains will slow, will show you smaller increase in happiness whereas, even smaller losses we show larger increase in sadness. So, if even so, if you gain 50 rupees, the amount of happiness that you get and if you gain 100 rupees the change in happiness from gaining 50 rupees and 100 rupees will be sloppily in contrast to the fact that if you lose 10 rupees and if you lose 5 rupees.

In terms of the drop in terms of the sadness that you get in losing 10 rupees then in 5 rupees the drop is very sharp that then in terms of gains. So, people will be more or less same happy when they gain 100 rupees in 50 rupees, but if they lose 5 rupees in 10 rupees the amount of different sadness that they feel will be more and that is what one of the predictions of this particular theory is. Now, basically what this theory says is that we feel losses more act acutely than we feel gain and.

So, as humans in terms of expected utility theory if we gain 10 rupees or if we lose 10 rupees the value of that money is still 10 rupees, but then and so, we should feel the same amount of happiness and sadness. But as humans you know that we losing money gives

us more pain and so, losses are more dramatic or gives us more sadness than if you gain 10 rupees and that is one of the more prediction. So, we feel more losses acutely so, the losses are felt more accurately then we feel guess.

Now, the psychological pain associated by losing a dollar 50 is greater than psychological pleasure of gaining a 50 dollar and that is the basic concept or that is the basic standpoint of the prospect theory. As against the expected utility theory which says that gains and losses and in terms of value, say 50 rupees is lost a 50 rupee is gained in both of them the expected utility that we get or the rational choice rational decision maker will not be hindered by his preferences.

But a prospect theory says that if 50 rupees is lost we feel more sad and we do not want to spend more money out of it. But, if we gain 50 rupees, we are not that much happy and so, this is the invariance which is there or this is the kind of difference which is there. Now, prospect theory predicts that people will be especially aversive to losses and will show differences in preference depending on how alternatives are presented or framed. So, basically another interesting feature of this prospect theory is the fact that people do not like losses; they are averse into loss so, people do not like losses at all.

And so, given the fact that if 2 options, if a particular option is framed differently, is worded it differently, people will change their preferences. So, if an option has a gain frame which means that it talks about everything with certainty, people will have a different kind of a response or people will choose a different kind of an option. Whereas, if something is framed in a negative sense or something talks about losing some statement talks or some options talk about losing people will have an entirely option to choose from.

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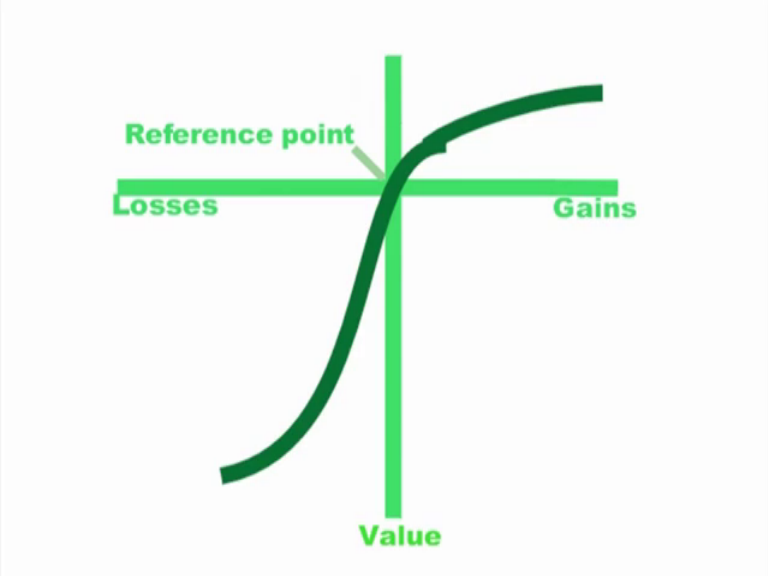


And this basic fact is called framing. So, look at this graph this graph basically says that this is the reference point and in terms of these are the losses and these are the gains and this is the value. So, in terms of value if you see that for higher values as the value goes high, the gains are very less. But, then even for very smaller values the loss drop is very high. So, people in general they do not like losses and losses are perceived as bad, losses of perceived as ever see people want to avoid losses and people. But, on the other hand gains even if a very high amount of money is given to you gain a high amount of money you will not become happy. So, the amount of happiness that comes with gains is not equivalent to the amount of sadness which comes with losses.

So, a couple of facts to be remembered one is this, the other the fact to remember is that people hate avoiding going into losses and. So, there are different scales of it and the third thing is that if framed differently, if the same option is framed differently people are presented differently people reverse their choices.

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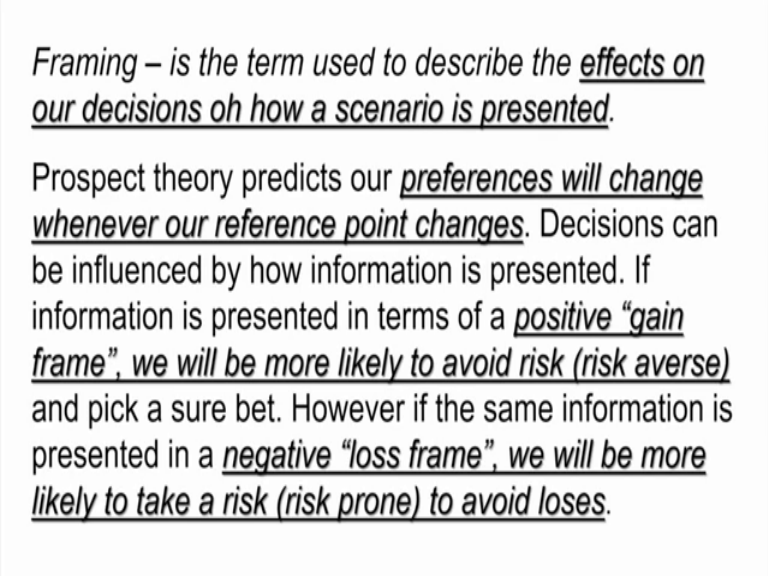


So, then let us look at something called framing. What is framing? Framing is the term which is used to describe the effects on our decisions of how our scenario is presented. Let us say an option is given to you and the presentation is the option is reworded. One so, something and let us say the option of winning of 50 rupees or winner or let us say that there is a particular decision that has to be made and out of this is a certain kind of choices are certain kind of alternatives come up.

Now these alternatives can be framed in a gain frame which means that everything is positive or it can be or everything that the alternate is talk about is certain or it could be in a loss frame in the sense that everything that the alternate talk about is uncertain in nature. And in those cases people tend to reverse their preference.

So, prospect theory it predicts that our preferences will change whenever our reference point changes. If we are in a gain frame, if they are doing evaluations, if we are choosing alternatives and options in a gain frame, then in those cases the kind of decisions that we make. And if we are doing evaluations, we are choosing options in a lost frame, those 2 decisions will be different. The reason being that gains are taken in a different in different way than losses, gains are not that pleasant as losses are too more sadness.

So, decisions can be influenced bow how information is presented and this is what is framing. Framing is basically using a say statement or basically reframing, rewording a particular option. Now, information is presented in terms of a positive or a gain frame,

we will be more likely to avoid risk, we will be risk aversive and pick up a sure bet. So, if something is given to our some option is given to us in a gain frame in a positive frame or in with certainty that something is going to happen, we are we become risk aversive.

So, in terms of the fact that if certain options are given to us which show certain amount of certainty, which have a gain frame, which has some positive outcome out of it we tend to avoid losses in those cases. As against those so; however, if the same information is presented in a negative frame, in a loss frame a certain amount of information is given to you or certain information which is available in a particular option is an loss frame. Which means that certainty as certain level of certainty is not provided to you we will be taking more risk.

So, people take more risk when a loss frame is there, when people know that something is negative, when people know that they are losing they take more risk. But when people know that they are gaining maybe people know that there is no loss to it, people always select sure bets. So, this is what framing is all about.

So, it is all about how do we go ahead and make this kind of a choices or this kind of a thing. So, in a gain frame people avoid risks right and they become risk aversive. In a loss frame in a frame where people know that certain kind of losses are there, people take more risk. So, people become a more risk flown, people take more risk in terms of negative in terms of negative situations, in terms of positive situations people always prefer a sure bet.

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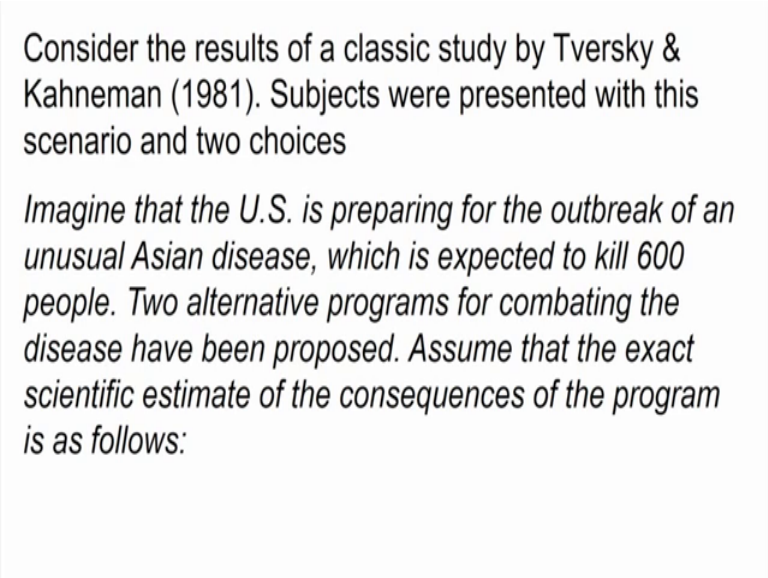


Consider or so, I am presenting a study by a very famous study by Tversky and Kahneman 1981 and this is this is available everywhere. And this study what it does it is a sample study to show that framing has this effect or framing can lead to this is reversal of preferences among people and so, what is this subject?

In this particular study subjects they are shown 2 different kind of options which was there. So, 2 different kind of options are presented 2 or 2 different scenarios represented to people. Let us look at the option so, the optional scenario says that imagine that the United States is preparing an odd break for an unusual Asian disease. So, basically this is what it is; now which is expected to kill 600 people.

So, the situation says that United States is basically preparing situation or preparing themselves for an Asian outbreak of disease, where they have all already calculated the 600 people are going to die. Now, 2 alternative programs for combating the disease have proposed so, there are 2 options for combating these disease are there. So, 600 people are going to die no matter what this is the certainty with it. Now, assume that the exact scientific estimate of the consequence of the program is as follows.

So, there are 2 scientific options, there are 2 or scientific estimates that there are 2 options to look at and then you have to choose which are the option you would like to go with.

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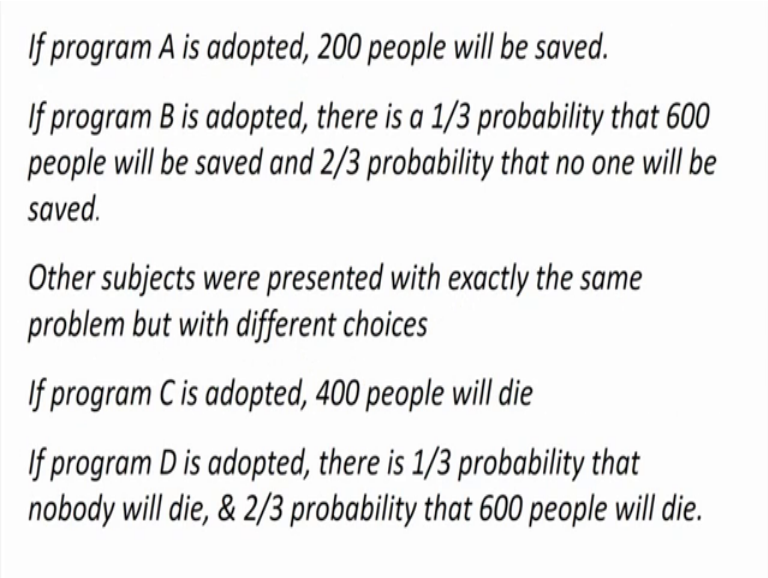


Now, if you adopt program A, 200 people will be saved. If program B is adopted, there is one-third probability that 600 people will be saved and two-third probability that no one will be saved, this is one way, one thing to be looked at. So, 600 people were going to die out of it and. So, 2 programs induced to save more number of people in option A. In using the option A what happens is that there is your sort fact that 200 people are going to be saved if program A is adapted, but if program B is adapted then there is one-third of a probability that 600 people will be saved and two-third of probability that no one will be saved.

This is one option so, one group of subjects were present this kind of an option. Another group of subjects represented a similar option and they were asked to make the choice whether they will go with program A or program B. Now, in the other group of subjects were presented a similar kind of situation in which a it was stated that program C is adopted 400 people are going to die, but if program D is adopted one-third probability that nobody will die and two-third probability there 600 people will die.

Now, look at these 2 options which I think. So, basically the situation is that there is a scenario which has been presented the US suffering from some kind of an attack, 600 people expected to be die dead and. So, they create a hypothetical set programs 2 hypothetical situations for combating with these diseases and so, these are the options.

So, as you look into it the first option the first 2 options program A and B we went to first kind of subjects as in a in a game frame and in the C and D are in the lost frame. What do you expect to happen? It will happen is that when things are presented in the gain frame most people select option A, which is 200 people will be saved rather than selecting program B which says that one-third probability that 600 people will be saved, in two-third probability that no one will be saved.

But, look at this, look at the C and D option it is presented in a loss frame and here it says that if C is adopted 400 people are going to die and where D is adopted one-third probability that nobody will die and two-third probably that 600 people will die. If you look into it, there is no change from A to B right it is the same, but if provided in a gain frame people select option A whereas, if provided in the lost frame people adopt D as the answer. And this happens this shift or reversal of choosing D over C or choosing A over B is from the fact that it is framed in a different way, it is presented in different a positive or negative frames.

So, in a positive frame people select those option which presents certainty so, 200 people save certain thing I will go with it. But the fact that if it is a lost frame, if 400 people are going to die on own, why not go with the rescue option which says that one-third property that nobody will die. So, one-third probably that nobody will die is going to be the same thing, it is not going to be different in any way. 200 people is what is the one-third probability that is there and so, people select D option.

Whereas, in the first case people select A option and this basic demonstration shows that people show this kind of a preference reversal or reversal of choices or reversal of which options to go with depending on which frame it is being presented to. Remember the invariance theorem which comes in expected theorem, it says that if people select A in first case, they should select C in the second case. Although they are the same, but that is not what happens, people reverse their choices and this is happens because these options have been presented in different frames or in different wordings in a gloss frame and in a gain frame.

So, in a gain frame in the first case what happens is people become more risk aversue. They do not want to take risk so, they go with a certainty option, they go with option where 200 people are going to be dead. But, in case where is the last frame people go

with a more risky option, they take more risk. So, although even if we calculate is going to be the same so, take a more risky option.

And in this case they take the D option which is more risky, but it is going to they think that it is going to say more people, but it is almost the same. And that is not very interesting finding of this prospect theory which says that gains and losses are valued differently or they are seen of perceive differently by people.

Now, another interesting phenomena or another interesting output of the prospect theory is something called Psychological Accounting.

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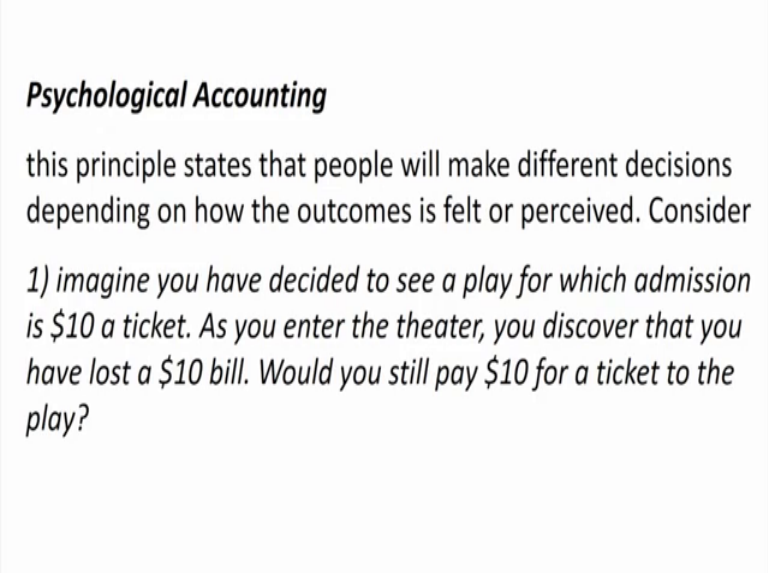


It is another interesting output of the prospect theory or one of those features or one of those ways in which people make decisions and what does it says. So, this principle says that people will make different choices depending on how the outcome is felt or perceive basically how people feel. So, it is about feeling, it is about emotion, it is about how people like a particular option.

So, the way they feel about an option that decides how people are going to make the decisions and so, people feel feelings about a particular option makes the final choice of the decision and not the utility. So, people do not go ahead and make statistical calculations of probability in utility in making decisions rather what they do is they use a heuristic approach of how they feel about a particular choice. And based on that they

make the decision and actually make the choices of what to do with and they consider that to be rational.

Now, look at there are 2 situations which I have presented to you to explain psychological accounting, first of all let us look at the first case. Now, imagine that you decided to see a play for which dollar 10 a ticket and you enter the theatre you discovered that you have lost dollar 10 bill. Would you pay 10 dollar for the ticket to the plane?

Now so, the first option is that you have lost a 10 dollar bill which means that you have lost the money and. So, you enter into a theatre, you want to go see a movie, you enter a theatre and then in after entering a theatre you lost a 10 dollar thing which is the also the cost of the ticket. So, are you going to pay for the ticket? Are you going to buy the ticket?

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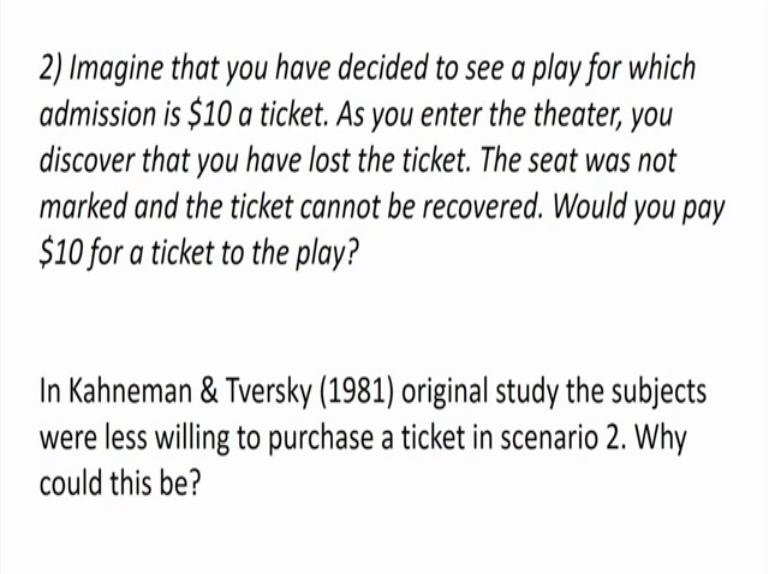


And there is a second situation in which decided do you decide to see a play for which admission is 10 dollar. As you enter the theatre, you discover that you have lost the ticket. So, you bought the ticket and now the ticket is lost. The seat was not marked and the ticket cannot be recovered. There is no the since you bought the ticket the seat and unfortunately the seat are not marked and there is no way to recover the ticket. Would you pay 10 dollar for a ticket for the play?

So, in which of these chances and which of these cases are you more happier or are you more likeable to buy a second ticket? What is the answer? What do you think is going to happen? Now, given the fact that if these are the choices which have been presented it has been found that choice 2 in choice 2, people are more reluctant people do not want to buy a new ticket. The reason being that they believe that 10 dollar the value 10 dollar although the ticket has 10 the value and tell you 10 dollar has been already assigned to the ticket and.

So, is the as the ticket is lost there is no point in buying a ticket because, the 10 dollar from the psychological money account that they have that has which was assigned to the ticket has been lost. But in the first case the idea that 10 dollar bill the 10 dollar rupees or the 10 rupees for which the ticket is worth that got lost and. So, that the probability of losing a 10 rupees is far greater than the probability of losing a ticket to a particular play which is of 10 dollar and.

So, the fact that in case 1: in the first option you are more likely to go ahead and buy the ticket then in the second case. Because here the value of 10 has been assigned to the ticket and the ticket has been lost and. So, the value 10 has been assigned to the ticket and in your psychological accounting says that I do not want to pay more money to this particular ticket.

And so, this is what Daniel Kahneman and Tversky also found out. In Kahneman and Tversky in 1981 original study the subjects were less willing to purchase a ticket in scenario 2. Now, why could this be this could be because of the fact that the 10 dollar that the spend in option 2 will be from the ticket option from the psychological account which is assigned to the ticket, where in the first case the probability of losing a 10 dollar is very high. So, even if you lose a 10 dollar bill it could have been lost anywhere and.

So, you will buy a ticket, but in the second case the ticket which was further 10 dollar the ticket was lost and. So, the value was assigned to the ticket and so, since you have lost the ticket you are not going to put any more money onto it and so, this is called the psychological accounting. Another interesting fact or another interesting phenomena which is a follow up of psychological accounting or prospect theory is something called Sunk Cost.

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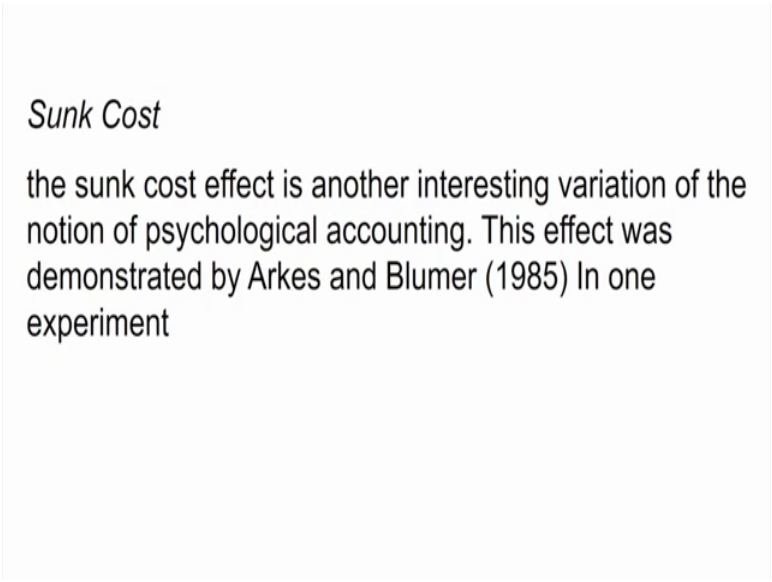


It is another feature or rather phenomena which shows how people show irrationality in making decisions they are not rational decision maker and so, what is sunk cost?

Now, in the sunk cost effect is another interesting variation of the notion of psychological accounting. What does this say? This effect was demonstrated by Arkes and Blumer in 1985 in one of the experiment and.

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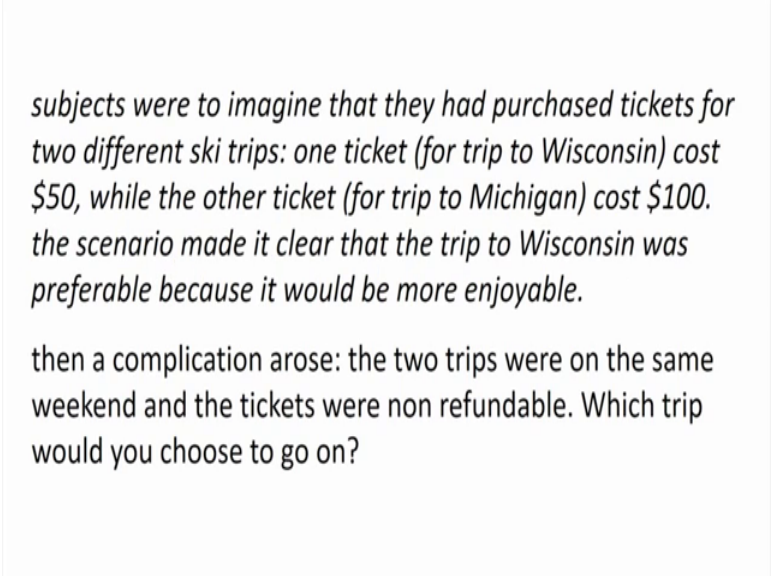


So, let us look at the experiment so, in this experiment what happened is subjects were to imagine that they purchase tickets for 2 different ski trips. So, basically 2 different ski

trips were then subject they actually brought ticket for both these trips. Now, one ticket a trip for Wisconsin costed 50 dollar, while the other ticket was a trip to Michigan which costed 100 dollars. Now, the scenario made it clear that the trip to Wisconsin was preferable because it would be more enjoyable.

So, basically then there are 2 trips that you buy a ticket to a ski trip, one is to Wisconsin and the other is to Michigan. The Wisconsin cost of the Wisconsin is ticket is 50 dollars, the cost of the Michigan ticket is 100 dollars. Both are ski trips that are there, but then this information is provided to you that the Wisconsin trip is more desirable it is more fun and so, it is both preferable.

So, now, you have decided to go to both the places. Now comes a complication, where is the complication? A complication arises where the 2 trips are fall on the same weekend. Now unfortunately both the trips tend to come on the same weekend or the same dates and the tickets are nonrefundable. You cannot go ahead and they find the particular ticket. My question is which other tickets are you preferring to go to? Or which of the trips are you going to go to? And which is the trip that you are going to avoid?

Now, rationality suggest that this constant trip is more exciting although it is of lower value. So, people should go for this one and leave the trip to Michigan which is expensive 100 dollars. But is that what happens? No, this is exactly the opposite of it. People actually prefer the non enjoyable trip because it is expensive and so, people actually go to the Michigan trip and. So, this is what the result of Emerson Tverskys or Arkansas main study is that they found out that people take the Michigan the Michigan trip although it is not enjoyable, but it is expensive and. So, p this is this is the phenomena which is also seen in everyday well maybe what we see is that people throw in money after bad money.

So, if people lose money they tend to throw in more money. So, if there is something that you have which is not working and. So, when you see that this thing is not working and you put more money into it for it being repaired and it does not get repaired you tend to put more money on to it, people do not get into it.

So, some you buy a particular product it gets defective, you give it to someone for repair. Now, after repair it is still not working you tend to put more money into it to getting repaired rather than buying a new thing because, it has already costing you more and so,

you tend to make some more money on to it. And this is the exact same phenomena here happens people tend to put more on to the expensive option.

Then the expensive option rather than choosing an option which is a more enjoyable, but lesser value. So, these are what is this is to do with what is prospect theory and how does prospect theory really works. Another interesting theory or another interesting fact in decision making is the role of Affect in Decision Making or the role of emotion in decision making.

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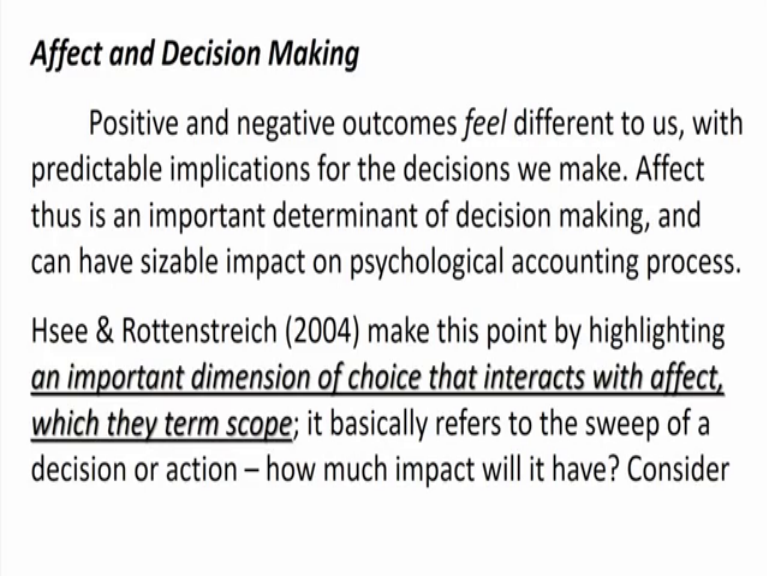


So, positive and negative outcome a positive and negative effect which comes with an outcome is a feeling of goodness or badness which comes with an outcome, they give us different feelings with us and with predictable implications on disease and we make. So, our decisions are not just in terms of factual information, it is also related to the kind of feeling that we get after taking a particular decision. After taking a decision or after choosing a particular alternative how do we feel about that alternative also plays a large role or plays a major role in how people make decisions or how decision making it done.

So, affect us is an important determinant of decision making and can have a sizable impact on psychological accounting process. So, it is basically the feeling that you have the kind of pleasure or pain that you get out of taking a decision that depends or that decides a lot about how you take diseases.

Now, Hsee and Rottenstreich 2004 they made this point by highlighting an important dimension of choice that interacts with affect which they term as scope. They basically came up with this dimension or choice which interacted affect and we they call this is the scope. Which refers to the sweep of a decision or action how much impact will it have. So, basically Hsee and Rott and Rottenstreich 2004, they invented or they came up with the whole this is a whole new dimension which is called scope which refers to the sweep of a decision.

How do sometimes diseases are made in terms sometimes of positivity or negativity or sweep and this is what they discovered. So, consider these particular 2 things.

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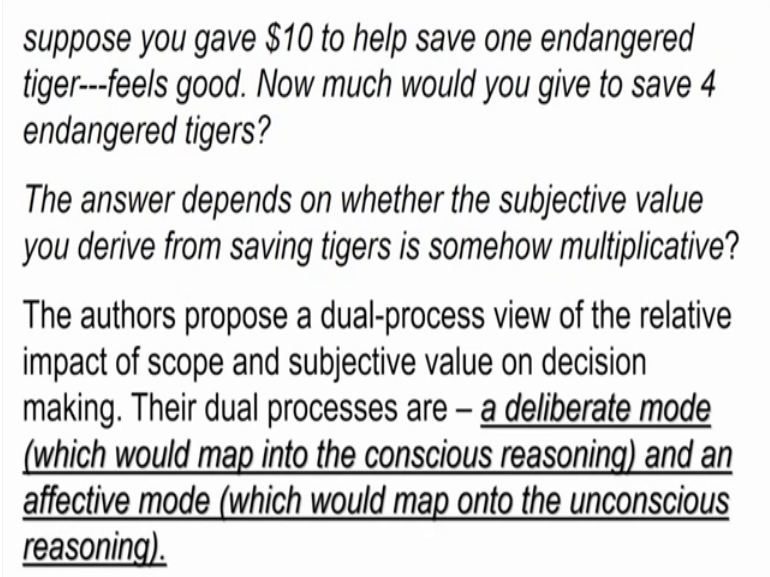


Suppose you give 10 dollars to save one endangered tiger, it feels good. Now how much would you give to save forces in endangered tigers? Given the fact that you often see people coming to you saying that see these kind of animals are endangered, they have to be saved in some way and so, we need some kind of a money from you to save these.

So, if they then they show you some basic thing give us 10 dollars and we are going to save some endangered animal out of it. Let us say panda tiger or whatever it is and so, you give some kind of money into it. The fact that for one it is ok, but then he says that you are going to save 4 tigers, are you going to pay more? That is the question. Now, how much are you going to shell out for and saving for endangered tigers? Or what is the way in which your decision process really works? The answer to this question.

So, if you are giving 10 dollars for saving one tiger whether you are going to give 40 dollars for saving 4 tigers is the question and so, the answer to this depend on whether the subjective value derived from saving tigers is somewhat multiplicative. So, basically the kind of value that you derive that or the kind of utility that you derive by saving tigers how much that is? So, is it multiplicative or not. So, saving one tiger if you are and so, this basic the decision depends on 2 different modes of decision making.

So, basically if one tiger requires 10 dollars for saving and if somebody asked you to save 4 tigers are you giving 40 dollars for saving the tiger and that depends upon how much utility or how much subjective value derive from saving these 4 tigers. Now the author proposes a dual process view of the relative impact of scope and subjective value or decision making. They say that people make these kinds of decisions under 2 different modes of decision making and what is this mode? There is a particular mode which is called the deliberative mode in which map onto the conscious reasoning.

So, when you are into a deliberative mode or when you are into a conscious mode of reasoning then if somebody says that saving one tiger is 10 dollars, saving 4 tigers 40 dollars, then you would provide 40 dollars. Because you reason that one tiger will require 10 dollars of saving, then 4 tigers will be 10 into 4 which is 40. But, if you are functioning onto an effective mode, if you are functioning into one of those in a way that you feel good about saving tigers, then saving one tiger is enough for you and.

So, if you are functioning into an effective mode we should map on to an unconscious reasoning. In this case you say that I do not care, I have saved tiger that is the answer and. So, one time beat 1 tiger or 4 tigers I have saved an endangered species and so, 10 dollars is more than enough and in those cases you do not shell out more money.

So, in a deliberative mode you are more prone to giving more money because you do more calculations and it maps or from the conscious part of the brain and. So, you tend to shell out more money because you do a calculation. But if it is the feeling which comes with the decision of saving tiger, if you feel good by just saving tiger if that is the underlying meaning out of it, then whether it is one or 4 it does not matter and. So, in those cases you are take a different kind of decision altogether.

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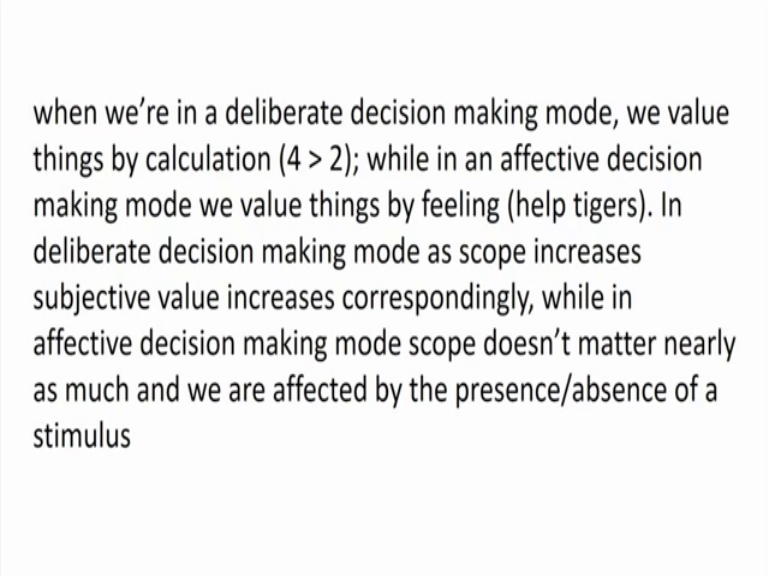


So, when we are in a deliberate decision making more we value things by calculating 4 is greater than 2 and so, saving 4 is much better than 2. While when we are in an effective decision making mode we value things by feeling help tigers. So, saving 1 tiger is helping tiger and saving 4 tiger is helping tiger. So, whether I say 1 or 4 is basically the feeling which is out of it. It is not that some when you say 4 tigers the feeling will be greater, it is not multiplicative. But, when we are in a deliberative mode we understand they are saving one tiger and saving 4 tigers or saving 2 tigers and 4 tigers 4 tigers is more than 2 tigers so, let us give more money.

And so, there decision will be based on that kind of an imperative or that kind of a system. But, when in an effective mode once you are in an effective mode it is the feeling which is of interest to you, it is the fact, it is the pleasure that get when you say what tigers is the kind of appreciation that you get, when you say about tiger and that is all it matters. So, it does not really matter whether you are saying 1 tiger or you are saving 4 tigers and so, it is saving tiger which is of importance to us.

So, in deliberately decision making mode as scope increases subjective value increases corresponding, while in affective decision making mode scope does not matter nearly as much as affected by the presence or absence of first stimulus. So, scope is basically the sweep of the decision. So, in the deliberative mode the scope has very less value than in the effective mode, it is all about the scope which is or there and. So, people's decision

making then vary in terms of whether they are in the deliberative mode or in the effective mode and their decisions are affected by the kind of feeling that they generate.

In the affective mode it is the feeling which basically decides what kind of decision that they are going to make or what kind of imperative that you are going to use or what kind of decision options that you are going to do. But in times of the deliberative mode it is quite different and. So, this is the last section onto a course on cognitive psychology and in terms of decision making. So, basically what we did in this particular class is that we saw a extension of one of the popular theories of decision making and this is the descriptive theory.

So, in the earlier class what we did in the earlier lecture what we did we looked at a class of theories which is called the normative of prescriptive theories which work in terms of reasoning and rational decision makers or ideal decision makers. And it is called expected utility theory or it is called the multi attribute utility theory. Both these theories work on the fact that decision making is basically done in terms of what is the utility of a particular option, choosing a particular option and what is the probability of that option coming in. And multiplying this gives us the final basis on which an option should be chosen. These are the prescriptive theories or these are the normative theories which are there.

We saw that human beings since they do not have a lot of information available to them and even if the information is available to them they cannot be working as calculators or mental computers. So, they make irrational choices or irrationality and this irrationality basically happens because human beings have certain limitations and. So, we as humans follow a descriptive theory are more worldly theory or decision making and one of these theories are the scene making which is descriptive in nature is something called the prospect theory.

So, what is the prospect theory? The prospect theory is a theory which basically goes ahead and says that gains and losses that people have different values. So, gains are higher gains I have lesser pleasure, lower losses have more pain into it. So, gains and losses come in different frames, they evaluated in different frames and gains and losses are thought of differently. Also prospect theory proposes the fact that losing and gaining are basically dependent on the frame in which a particular option is presented.

So, if a particular option is presented in a gain frame then people's choices will vary whereas, if a particular option is presented in a loss frame the people's choices will also vary according to it. So, reversals of preferences or reversals choices of option depending on which frame the information is presented. In gain frame people are more risk aversive, people do not want to take risk, people always select certain options whereas, when something is in a loss frame people are risk taking they like risk, they take risk.

So, once something is in a negative frame when in the last frame people want to take risk and put more risk into it and so, that is the kind of decision making that they tend to take. And then we discussed 2 other outputs out of it or 2 other phenomena related to the prospect theory, one is called psychological accounting. It says that how you feel about a particular situation, how you feel about a particular option makes you decide whether you like that option or not, in contrast to whether it is multiplicative or it is whether things are rational or not. So, it is the basic feeling that people get of our part of it.

The second option or the second output to it or the second theory to it was the sunk cost theory which says that people always what they tend to do is take the non desirable option, they always put more money after the bad option. So, if even if something cost more people tend to take the more unlikable or the more un enjoyable journey because people put more money on to sunk money that is the way that they like.

So, they do not do these calculations given the fact that if they calculate they will always go for the lesser enjoyable trip. But they tend to go to the more higher trip which has higher money do it because, they think that says larger money has been there let us go with this thing that is one of the things. Now, in the last section of this particular lecture we saw how effect of or basically how getting, pleasing or a non pleasing feeling out of an decision basically helps you into decision making or basically help you into making decisions.

So, we found out that when people have in a deliberative mode, people are in a conscious mode then they tend to do this calculating and they are more helping. It is not about feeling that they think about it is not about the effect which decides which help them decide a particular decision which they which does not rule the decision. But, when people in an affective mode the kind of decisions they tend to take is a entirely different,

but and they are affected by the sweep or the scope of the decision. So, basically affect then itself has a major role to play.

Now, in terms of brain physiology it has also been found that this risk options of framing has been proved or the affect of framing on decision making has also been proved in terms of certain brain studies. So, in certain brain studies it has been it was found that people who were presented options in a positive frame. So, if some option was given to them in a positive frame and people selected and went in the positive frame people selected those options which was certain the brain activity was very less.

So, in if things were in offer an option if an alternative was presented in a positive frame and people selected certain options, people selected those options which were not presenting risk people showed lesser brain activity. Then if they selected those options which presented some kind of a risk on non-certain options.

In contrast to this so, basically less activity was there when they selected certain options there, then if they selected those opt options which were non-certain in a positive frame. But in a loss frame it was quite the opposite; in a loss frame when people selected those options which were risk producing less brain activity was there then people when people selected those options which were certain.

So, in a lost frame risk taking led to lesser activity of the brain and more common activity of the brain which means that decisions are more thought through, this is answer more like through. Then in cases in the other case in the positive frame where certain option selections or selecting those options which was certain, which we get trying to which were very definite, which are very certain or which were sort of very fixed. Those in those cases the activity of the brain was less than the wind was much calmer then selecting those options in which it was not in this is the options were not certain.

So, in this way human beings make decisions and in this way human beings produce decisions or make decisions and they differ from calculative machines or economic decision making. So, basically using these processes of decision making either using the prospect theory or using the other things human beings come up with decisions. And then they make this is an and the uncertainty and under risk and based on that when a certain decision fails they reevaluate it, make another decision, make another choice and then keep on learning from it.

This is how the higher order cognitive function decision making really works. And this is the last lecture in the series on decision making or in this whole course which is of cognitive psychology. So, until we meet again.

Thank you.