Investment Management
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Lecture - 37
Behavioral Anomalies in Investments (Contd.)

Hello there. In this course Investment Management, we are discussing about Behavioral factors that might affect investment decisions. And in this session, we are going to talk about certain behavioral anomalies which are relevant for any investor while making investment decisions.

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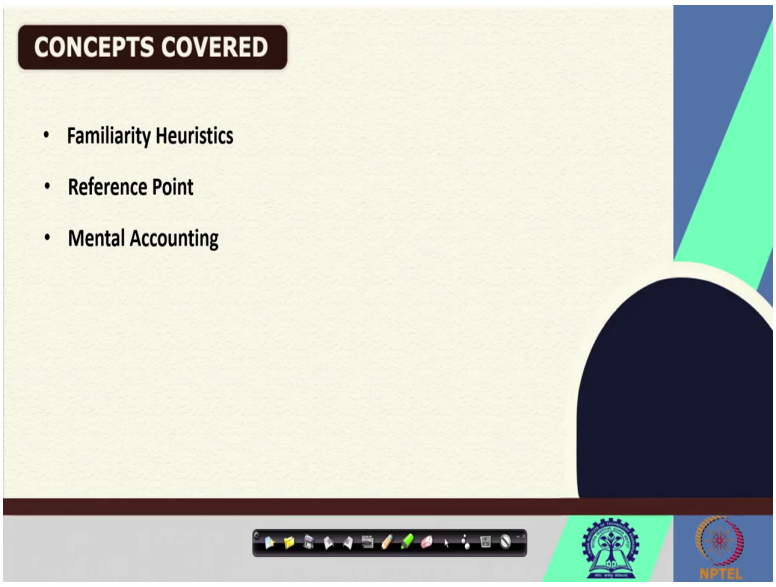

Particularly, we are going to talk about familiarity heuristics, reference point and mental accountings as behavioral anomalies seen in financial decisions and particularly investment management decisions.

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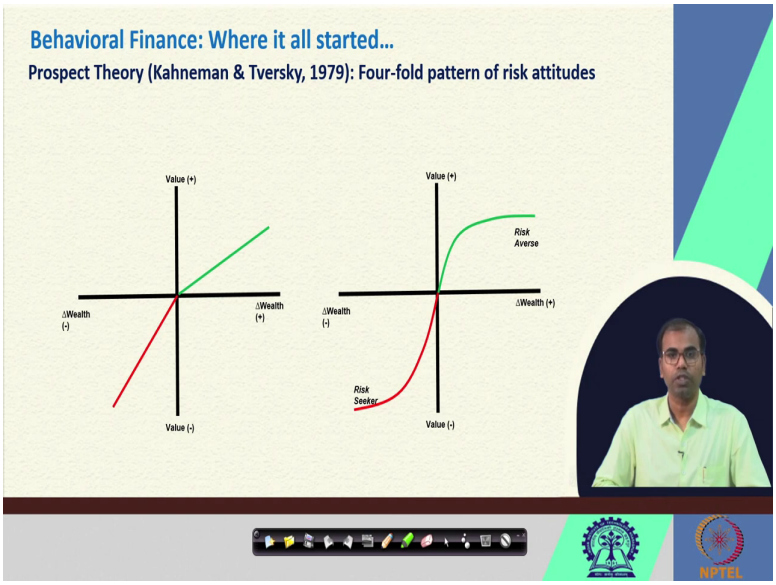

We have seen that individual behavior is not linear particularly when it comes to take decisions under certain circumstances. People take different type of decisions under risk and uncertainty whereas, their behavior change completely when it comes to certainty and assurance. In previous session, we have seen that people's behavior when faced with certainty and profits are different than the behaviors observed during uncertainty and risk.

And this was beautifully narrated in the Prospect Theory by Kahneman and Tversky. Now, the application of this prospect theory particularly with respect to investment decisions are manyfold. We have seen earlier about information dissemination particularly with respect to

endowment effect and the choices that we make in finance particularly with respect to investment decision in stock markets.

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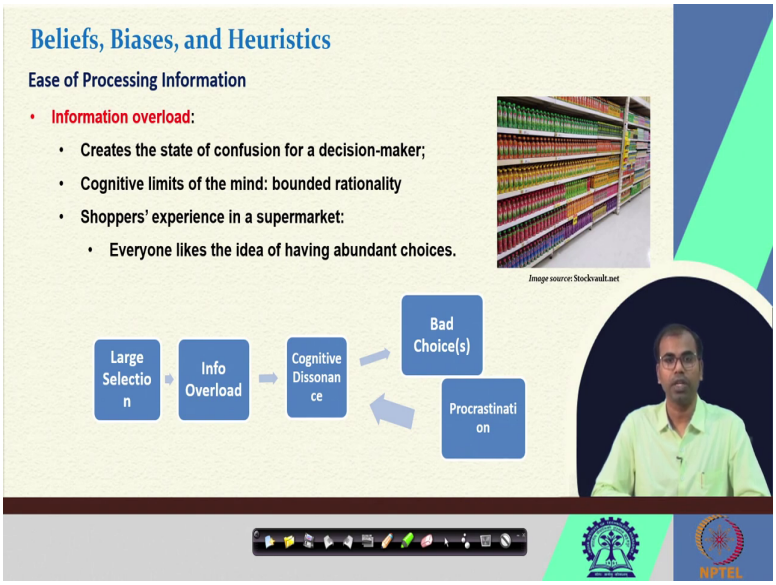

In this session, we are going to talk about beliefs biases and heuristics that are relevant for investment decisions. When it comes to factors that affect our decisions, information pertaining to financial securities such as stocks, bonds and other financial assets are of utmost important. We have seen that most of the conventional finance and economic theories are built around the assumption that information is equally available for all the participants in the markets.

Which means; every investor has equal access to information and is capable of processing all those information in their decision making. But when it comes to real decision making, we observe that not everyone of us is able to incorporate all the information that we might have

access to or that we need to incorporate while making decisions with respect to our investment.

Herbert Simon has also proposed the idea of bounded rationality which implies that we are boundedly rational because of our limited ability to process information that are available around us. So, the ease of processing information is one of the factors that might affect our investment decisions. Biases such as information overload and the resultant beliefs or heuristics create the state of confusion in the minds of a decision maker.

Particularly when we are faced with unlimited choices or overload of information. We do not incorporate all the information or we are not able to filter the information from the overall load of information that we see because of cognitive limits of our mind also known as bounded rationality. We can see this kind of behavior particularly in the experiments where shopper's experiences are observed in a supermarket.

Where shoppers are presented with a choice of numerous alternatives of a particular product and they eventually step to the conventional or traditional choices instead of going and experimenting with new alternatives. We all have fondness towards having abundant of choices, but when it comes to making decisions what happens is the moment we are faced with large selection and it comes along with information overload. This creates some sort of cognitive dissonance and that might result in bad choice sometimes we do not take any decision at all.

For example, suppose an investor is faced with the choice to choose or pick stocks from a list of 500 stocks from the top market cap listed companies. And with this kind of choice where investor had to choose 1 or 2 or 5 or for that matter 10 stocks out of 500 she has to do lot of research and analysis with respect to 500 stocks to select the top 10 or the best 10 that suits to her portfolio needs.

But because of information overload she might stick to certain heuristics or thumb based rule. And instead of going for the rational choices she might go for shortcuts and might end up

making bad choices with respect to selecting top 10 stocks for her portfolio. And this might result in suboptimal performance of the portfolio subsequently.

So, it this might be attributed to the large selection of alternatives and comes along the information overload because of which cognitive dissonance might create difficulties in making rational choices.

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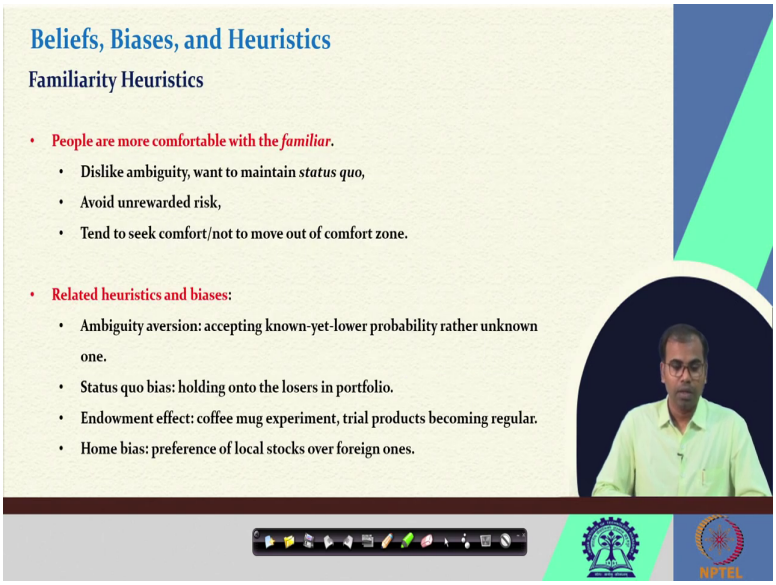

We all know that most of us feel comfortable when we are in our familiar environment or situations which are familiar to us. We are more comfortable with the familiar when whether it comes to making decisions or showing our best potential we do not like ambiguity and in case of uncertainty and ambiguity we want to maintain status quo.

This might be attributed to our natural tendency to avoid unrewarded risk because we do not want to take risk that might be originating because of unfamiliarity or because of environment, which is not familiar to us and that is why we do not want to assume that sort of risk.

Eventually as an investor as an economic agent we might tend to seek comfort or we might not to move out of our comfort zone. And because of this familiarity heuristics we can see several behavioral tendencies among investors particularly when it comes to financial decision making.

For example, we see a tendency of ambiguity aversion where people as an economic agents accept known yet lower probability rather than unknown ones. When it comes to selecting stocks or financial assets for her portfolio and an investor would want to select stocks which are little known to her rather than selecting a completely unknown stock or financial asset to include in a portfolio.

Similarly, we observe status quo bias where many investors end up holding on to the losers or the stocks which are losing value over a period of time rather than dumping them and reducing the losses. Many a times investors might be biased towards those stocks which are performing well.

And they might want to book profit in order to that they might sell those stocks and keep on holding the stocks which are losing value or for which stock prices are going down. Because of status quo bias we might not want to get rid of those stocks which are losing value and keep on holding those losers stocks in our portfolio.

Another behavioral heuristics or bias we can observe in financial behavior is endowment effect. We have seen and read about coffee mug experiments where we know that if we have received any coffee mug as a memorabilia or souvenir we value that coffee mug higher than its intrinsic value. And similar thing of behaviors can be observed in trial products, which are

given by companies as a trial, but eventually customers end up keeping them as a regular product or they start using it as a regular product.

This kind of behavior is shown in financial markets also we might end up having assets in our portfolio that we might not want to have in the first place, but as a trial as a experiment we kept and eventually we hold on to that asset for longer period of time than we desired for. Another very commonly observed bias seen in financial space is home bias where we see that investors or economic agents have preference of local assets or local stocks over foreign ones

Because they see those local stock as familiar ones and they want to hold those stocks even if they offer suboptimal risk return trade off over foreign stocks or non-familiar stocks, which might be giving better risk return trade off in general. These heuristics or biases might affect our stock picking abilities or our abilities to select financial assets for our portfolio.

We cannot say that all the biases will always end up affecting investor negatively, but most of the time we observe that these biases have negative implications for investor portfolio because of wrong selection or selecting stocks or financial assets as a suboptimal choice because of one or the other behavioral biases.

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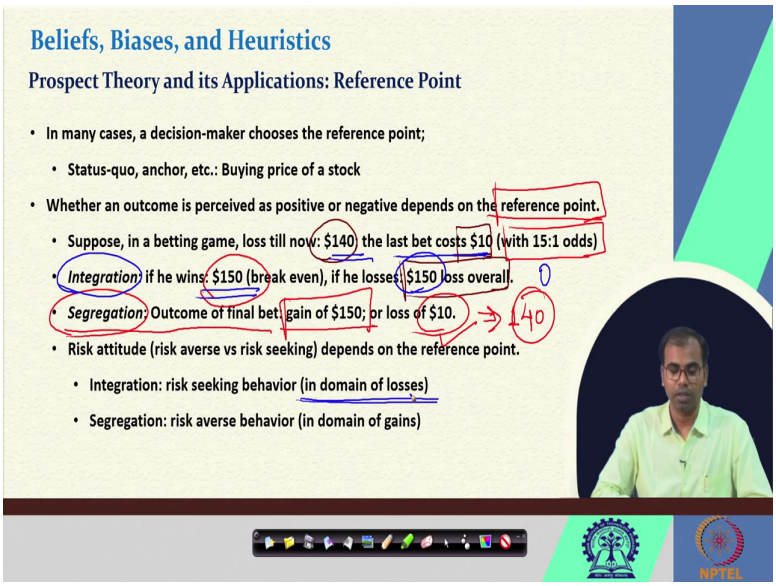

Continuing with our understanding of prospect theory and its application another heuristics or bias that we observe in financial behavior is reference point. We know that in many cases a decision maker end up choosing a reference point and most of the time this reference point can be the status quo or an anchor.

For example, in stock market if I buy a stock at 100 rupees per share and after I have bought the price of the share starts falling. We might as an investor we might keep on holding that stock, hoping that the price will go back to the price at which I have bought it that is 100 rupees per share and then only I will dump this stock out of my portfolio and in that process, I keep on losing more and more money over period of time.

So, typically buying price or the purchase price of this stock is serving as an anchor here or as a reference point and my decision to dump that stock is stuck to the reference point that is

purchase price here. Typically, whether an outcome is perceived as positive was negative depends on the reference point. When we take a decision to dump a stock from our portfolio and to accept the resultant loss is positive or negative that depends on the purchase price serving as a reference point.

If you look in a different context suppose that in a betting game an individual has lost 140 dollars till now. And in order to take up the last bet that will cost 10 dollar the investor might consider as 15 is to 1 odd because if he takes that 10 dollar last bet the total money invested or lost in the bet is 140 plus 10 that is 150 and if he get that 10 dollar last bet. Since this carries 15 is to 1 he might have a chance to win 150 dollar which might make him break even.

Here two behavioral tendencies can be observed one is integration, which might be connotated or indicated towards the tendency if he wins, he will get 150 dollar because of 50s 15 is to 1 odds. And in that case, he will break even if he loses then he will lose 150 dollar overall 140 dollar till now and 10 dollars further. So, in case of integration his total loss is 140 dollar plus 10 dollar that is 150 dollar loss and in case he if he wins then in that case with a 15 is to 1 odds he will get 150 dollar and eventually break even.

Another behavioral tendency that can be seen is segregation where we segregate from the reference point. If we do segregation then outcome of the final bet that is 15 is to 1 at the cost of 10 dollar is gain of 150 dollar and if there is a loss which means the bet is not won then a loss of 10 dollar alone. So, here if the tendency of segregation is observed particularly with respect to the reference point then it is 150 dollar of gain for a loss of 10 dollar.

So, effectively if the person gains, then his total net gain will be 140 dollar because he has paid 10 dollar to get that betting ticket and he has won 150 dollars So, net gain is 140 dollar if segregation behavior is observed and if integration behavior is observed then his net gain will be 0, because he believes that he has paid 140 dollar plus 10 dollar. So, he had paid overall 150 dollar and if he wins, he get 150 dollar. So, he is breaking even and thereby his net gain is 0 dollars.

Now, depending on the behavioral tendency of integration or segregation his behavior his further risk attitude will depend. So, typically risk attitude of risk aversion or risk seeking depends on the reference point. If it is integration then risk seeking behavior is observed and if it is segregation then risk averse behavior can be observed.

Particularly in the domain of losses when the investor or when the individual in the betting game is facing losses then his risk seeking behavior is observed and he tends to show an integration attitude. And in case of gains his risk averse behavior is observed and he shows an segregation attitude. This kind of behavior has several implications for investment particularly when it comes to managing the portfolio or figuring out the performance of the portfolio.

Sometimes we see that the stocks or the assets that have lost value and we have sold them we consider those losses in order to adjust against the gains obtained from other assets or sale of other assets and thereby we show some behavior of integration. But sometimes we do not show the behavior of integration rather we show the behavior of segregation where we consider gains from certain assets separately than the losses on certain other assets on in the portfolio.

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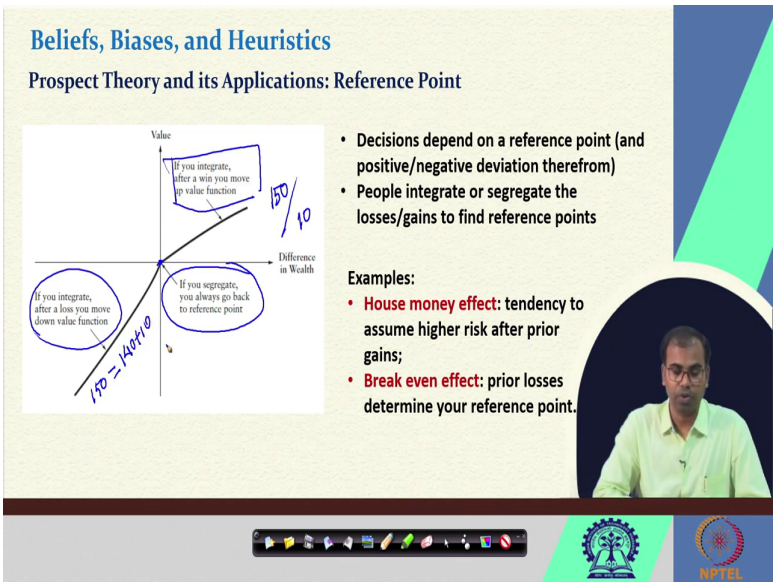

Now, if we look at this segregation and integration attitude, we know that decision of whether to bet the last bet or not depends on a reference point and most of the time positive and negative deviation there from. Typically, people integrate or segregate the losses or gains respectively to find reference point. Many times, reference point is basically the point where, which serves as the point of anchor or the point from where the decision is evaluated.

Typically, if there is no difference in wealth that is 0 then if we segregate, we always try to go back to the reference point. And if we integrate after a win we move to up to the value function. Particularly when it was like 150 dollar of gain because of 10 dollar of payment and if we lose we move down the value function because 150 dollar of gain is likely to be counter or make us break even with 140 dollar of loss till now plus 10 dollar of price for the last betting ticket.

Other implications of this kind of behavior is seen in biases such as house money effect, which implies basically the tendency to assume higher risk after prior gains we can see this particularly in case of financial behavior. When we see that investors or people in casino's or any other betting game show a tendency to assume higher risky decisions or to take high highly risky decisions soon after they have won certain other bets previously.

For example, if we have invested some of money in a stock that have gained significant amount of value in last period. Making us earn huge amount of profit on that particular trade. We consider that profit as the house money and we might end up taking more risky decisions in the next period.

Assuming that the gain that have been given to us or the gain that we have obtained in the last trade is not exactly our money rather its house money and that is why we can take more risky decisions with that money being us under the house money effect. This can be typically be seen in casinos or any other betting game where people who have won the last bet can use that money to place on more riskier bets or more riskier games because of house money effect.

Another aspect of this reference point can be seen as breakeven effect where people consider prior losses to determine the their reference point and accordingly they take their decision subsequently. Where the prior losses serves as the reference point and future gains can be used to set off the losses that have happened prior to arrive at the reference point.

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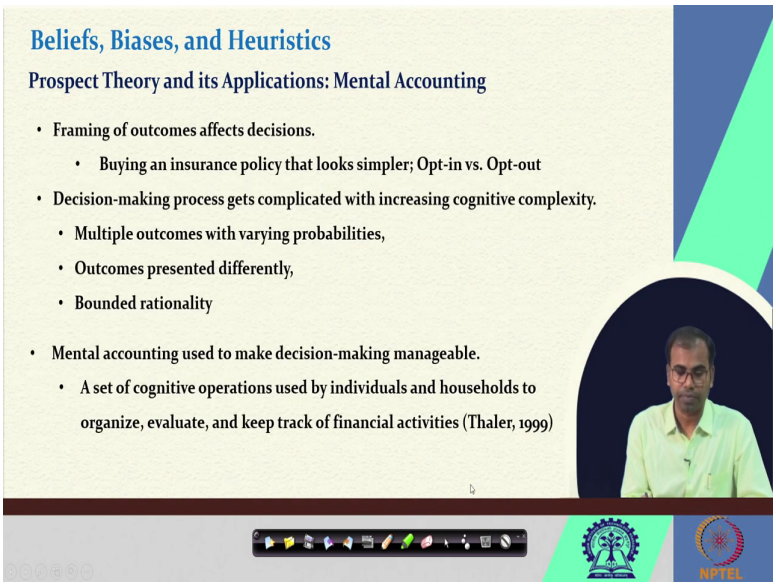

Another important behavioral tendency that can be seen as a result of prospect theory being applied in financial markets that is mental accounting. Earlier we discussed that framing of outcome tend to affect our decision making.

We know that if the terms and conditions written on the application form for an insurance policy can be simplified it helps an individual to make decision quickly. And sometimes we might not take a favorable decision just because we are not really comfortable with the way the terms and conditions are presented.

So, we agree that framing of outcome affects the decision making. If we see similar behavior particularly when individuals are presented with a choice to opt in versus opt out. Many a times we have seen in several experiments that instead of making an individual to go for an

opt in, which essentially implies that the individual has to sign in or click a box to opt in for certain services or certain option.

Instead of making the opt in opt out which means making the opt in as the default choice and if someone do not does not want to go for that option see has to opt out by clicking that particular box. In this way we have seen that the participation can be increased. In several experiments across the worlds in different context this opt in versus opt out has been used for increasing the participation even though in cases of organ donations or opting in for certain type of retirement savings scheme or any other choices.

All these experiments have shown us that framing of outcomes affect decisions and we know that decision making process gets complicated with increasing cognitive complexity. If we are presented with too many choices this might create cognitive dissonance and we might not take an optimal decision.

Similarly, multiple outcomes with varying probabilities make the decision making even more complicated. Similarly, if outcomes are presented differently, they are not comparable in straight forward sense, then it creates more cognitive load on bounded rationality of nature of the individual or economic agents and thereby making the decision making difficult.

All these things essentially point out to one certain behaviour that is mental accounting that is used to make decision making more manageable and simpler. Essentially mental accounting indicates that there are a set of cognitive operations used by individuals and households to organize, evaluate and keep track of financial activities. Here individuals are using separate constructs or compartments that are virtual compartments of mind of decision making process in order to simplify and keep track of financial activities.

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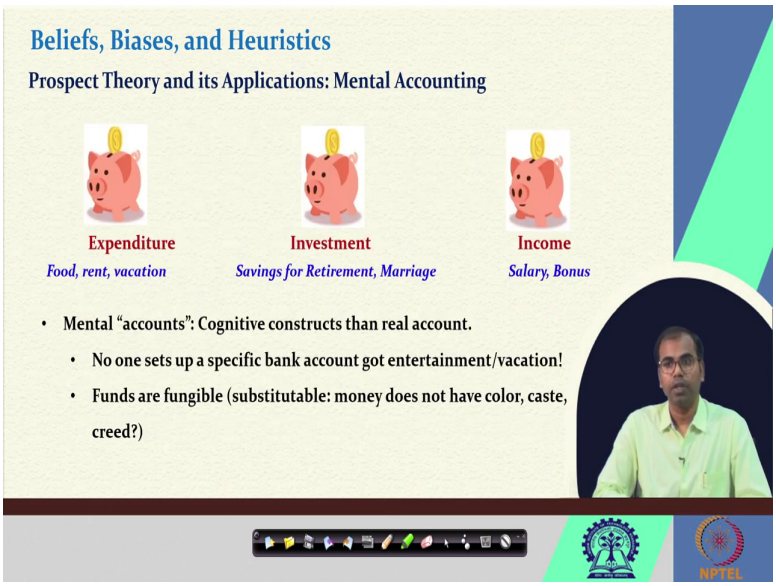

We can see that in behaviour particularly when it comes to savings and spending behaviour. For example, we have different mental accounts for expenditure such as food, rent, vacation, similarly for investment, savings for retirement, marriage, car, similarly for income we have salary, bonus all these cognitive constructs are that are virtual rather than real account. And we keep these accounts in order to make our decision making simpler.

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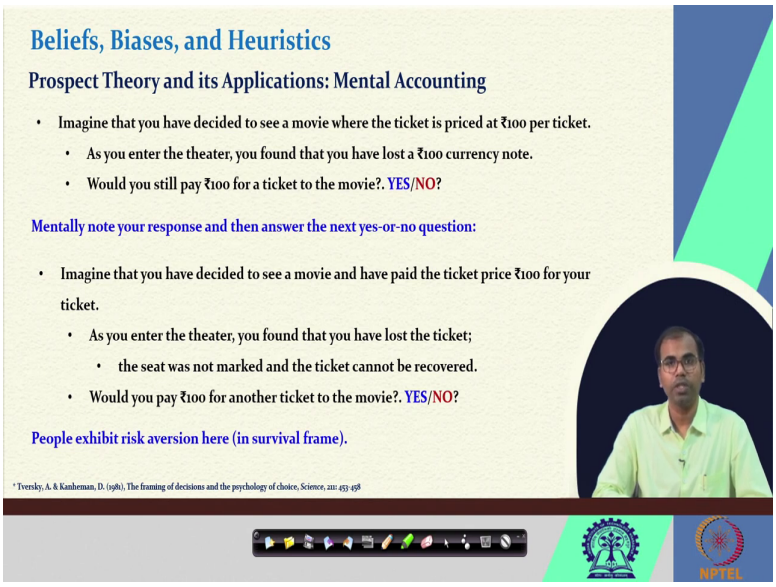

There are empirical evidences that we can see here from Tversky and Kahnemans research where they propose that if we have decided to see a movie where the ticket is priced at 100 rupees per ticket.

And the moment we enter the theatre we found that we have lost that 100 rupees currency note. If we are asked whether we will still pay 100 rupees for a ticket for the movie? The answer could be yes and no, but typically mental mentally we note our response and let us look at the next scenario.

Suppose that we decide to see a movie and have paid the ticket price for 100 rupees already and as the we enter the theatre, we realize that we have lost the ticket. Now, seat was not marked in the theatre and ticket cannot be recovered. So, will we still pay 100 rupees for another ticket? If we see the two scenarios one where we lost 100 rupees currency note and

another where we lost the ticket, we our behaviour our response to these two scenarios are different. We exhibit risk aversion here in survival frame.

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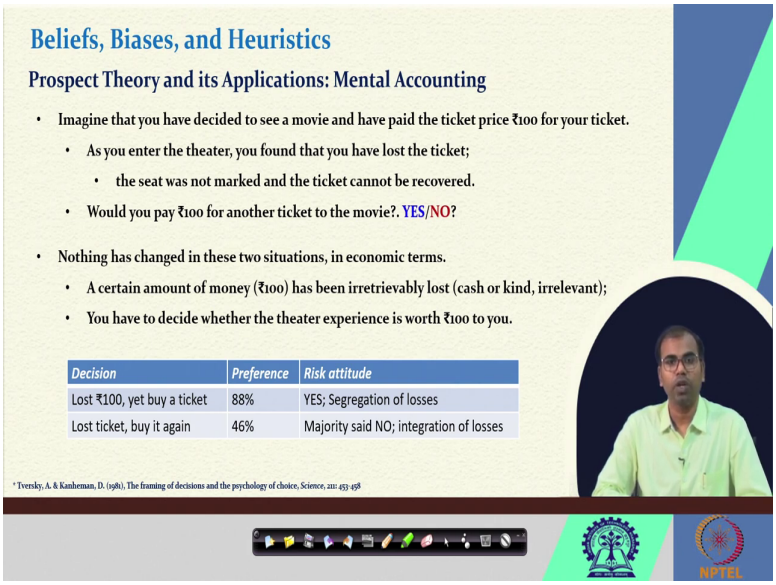

And if we look at the empirical evidence, we see that in these two situations nothing has changed in economic terms a certain amount of money that is 100 rupees has been irrevertibly lost, sometimes once in cash another scenario in kind.

But when we have to decide whether the experience is worth 100 rupees or not in one case when we lost 100 rupees and we are here to buy a ticket 88 percent people said yes, they will go for it buy buying a ticket and here they show segregation of losses 100 rupees loss is separate from 100 rupees of currency ticket price.

In another scenario where we lost the ticket and we need to buy again only 46 percent people agree that they will pay another 100 rupees to buy a ticket and here they exhibit integration of losses. Because here they believe that their 100 rupees on entertainment has already been spent and paying another 100 rupees to buy another ticket is beyond their budgeted expenditure on entertainment and that is why probably they say no.

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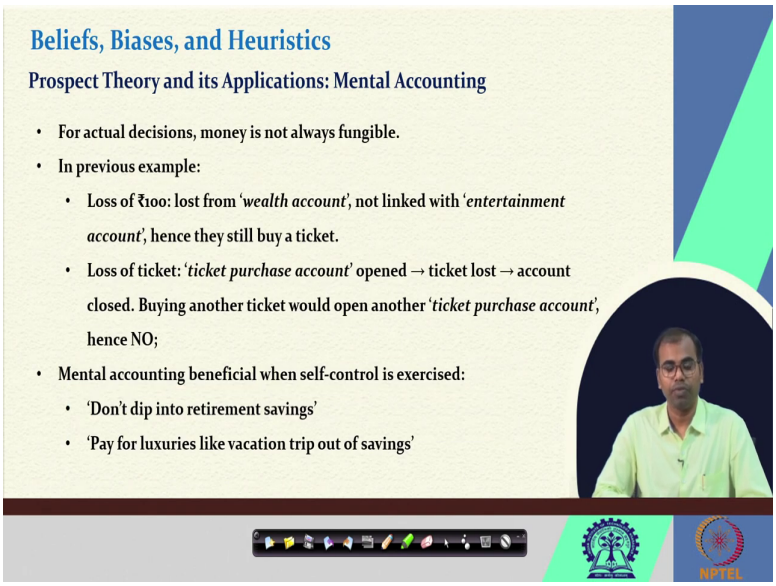

This kind of behaviour is observed in financial market also because for actual decision money is not always fungible. In this example loss of 100 rupees was lost from wealth account that was our money not linked with the entertainment account and that is why probably people wanted to buy a ticket. In case of loss of ticket, ticket purchase account was opened ticket lost account closed buying another ticket implies that we have to open another ticket purchase account and that is why probably people ended up saying no.

Mental accounting is beneficial when self-control is exercised. For example, if we have retirement savings or a separate mental account of retirement saving, we do not want to dip into retirement saving for other expenditure. Similarly, we might pay for luxuries like vacation trip out of saving would be fatal for our financial health and these can be helpful in financial planning and better investment decisions.

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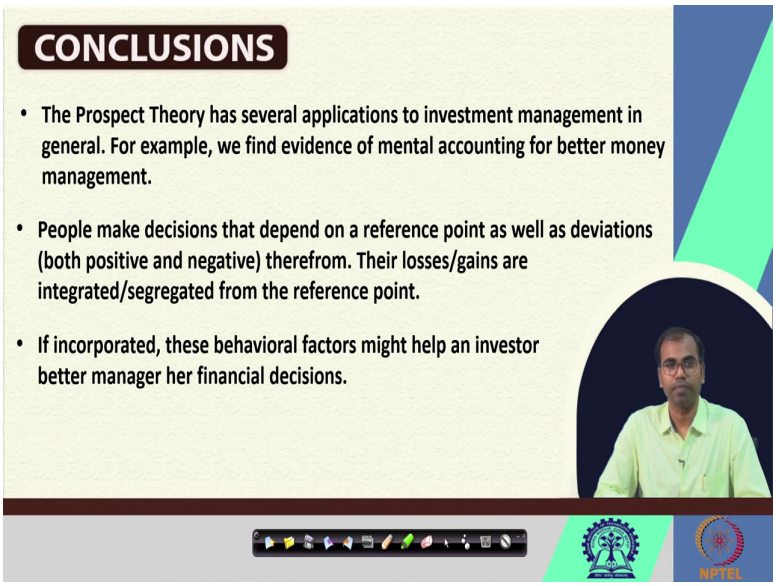

In order to conclude I would say the prospect theory has several applications to investment management in general. For example, we find evidence on mental accounting for better money management people make decisions that depend on a reference point as well as deviation from the reference point with both positive deviation as well as negative deviations.

And their losses and gains are integrated or segregated from the reference point depending on whether it is a gain or a loss scenario. To conclude if incorporated these behavioral factors surely help an investor better manage her financial situations and make better investment decision. With this, that is all.

Thank you.