Conservation Economics
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Module 11
Practical issues in Economics and Conservation
Lecture 2
Asymmetric information, Politics and Behavioural Economics

Namaste! We carry forward our discussion on the Practical Issues in Economics and Conservation and in this lecture, we shall have a look at Asymmetric information and Behavioural Economics. Now, when we talk about behavioural economics, it is prudent to recap what we have seen so far.

When we talked about consumer choice, we talked about a number of assumptions in the model. Now, these are the assumptions that we normally make whenever we are making any economic analysis because these assumptions simplify things. So, in an earlier lecture, we had looked at what a model is.

So, a model is a simplified depiction of reality. If you look at the reality, reality is very complicated and so, to make a sense of the reality to look at what are the underlying principles or laws of economics, we need to make certain assumptions and some of these assumptions include things like rational behaviour.

When we talked about rational behaviour, we said that consumers are always trying to seek to maximize their utility. And throughout this course, we have ah said that the buyers try to maximize their circles; the the sellers try to maximize their circles and that everybody is a rational behaviour, which means that everybody is using all sorts of information that they can have access to and are actively processing that information to come up with a decision.

But then, this assumption is not always true because in a number of cases, we do not have the information at all or if we have the information, then also, we do not have sufficient time to process that information and in certain cases, even if we have the time, we may not have the ability to process because the processing power of our brains is limited.

So, rational behaviour is an assumption that can be violated in certain points of time. Then, in the consumer choice model, we had said that preferences are complete and the consumer fully understands his or her preferences, which permits an unambiguous decision. But then, if you visit any restaurant, you will have the idea that in a number of cases, we cannot be in an unambiguous decision.

Because at times, we get confused; at times, we start to think - 'ok, should I have a mango ice cream or should I have a pineapple ice cream'; whereas, when we were talking about the model, we were saying that the preferences are complete and the consumer fully understands their

preferences. But that is not always the case. We said that preferences are reflexive. If goods A and B are identical, the consumer will be indifferent with regard to A and B.

However, in certain cases, people do attach an emotional sense to things and so, even if two things are identical, people might want to prefer one and not prefer the other one. We said that preferences are transitive. If A is preferred over B, B is preferred over C, then A must be preferred over C; but this again is not always true. We said that preferences exhibit a non-satiation, which means that more is always better; but then that again is not true in a number of cases.

For instance, if you are given an option to eat ice cream, you cannot just go on eating ice cream. There will be a point, where you will say- 'oh I am full now, I cannot have any more', but then when we were making the model, we were saying that more is always better. There are a number of cases in which our assumptions do not always hold true.

We also said that indifference curves exhibit diminishing marginal returns of substitute, marginal rates of substitution resulting in a bow. This is generally true, but then goods are available in all quantities including parts, this is not always true. But the bottom line is most of these assumptions do not apply in the real world.

How do people make decisions in the real world is the next question. We began with a simplified understanding of economics by making use of models to simplify the reality; but then, we also need to understand, what are the lacunas in our simplified models; how are they different from the real world and how do people in the real world make their decisions and we will explore this by using an example.

In an earlier lecture, we had looked at the production function. The production function tells that the output per hour when the number of workers increases, it goes on increasing; but then it starts to reach a plateau. The output does not just go on increasing, it will reach a plateau after a while. And so, if you have any more workers, then the marginal productivity of those workers will be less.

But then, if we concentrate on this section, is this always true? If you have 1 or 2 labourers, can you be assured of this output per hour or is there something else that you need to be concerned about. Let us say that in this firm, 2 labourers were hired. Will these 2 labourers give this output at all times or is there something else that we need to look at.

This is important because this is the basis of the understanding of the marginal product. Marginal product of labour as we had seen is the increase in the amount of output from additional units of labour. We had seen that the marginal product of labour, it goes on decreasing, which is another way of explaining the production curve.

In this context, we had said that there is this law of diminishing marginal product, which says that the property whereby the marginal product of an input declines as the quantity of the input increases because of crowding, insufficient access to equipment, chit-chats and so on. But is it possible that even when we are having just 1 or 2 labourers, they are not putting up their best? Now, we will see this is true in a number of cases.

We have used this property of diminishing marginal product to compute the value of the marginal product, which is the marginal product of an input times the price of the output. And

here, we are seeing the value of the marginal product of labour and we saw that this is also going down.

Because in the case of a fixed price, this will go down; so, the curve will look very similar to that of the marginal product. So, the value of the marginal product looks very similar to the marginal product. And we had used this to find out what is the profit maximizing quantity of workers that we should be hiring in a firm?

We have said that the profit maximizing quantity is given by this point, where the value of the marginal product of labour intersects with the wage rate and this value in this case the 4 labourers is the number of workers that the factory should be hiring. The question is does this hold true in the real world?

Because in the real world, workers often do not perform when they are left unsupervised. So, in this case, we are talking about 4 workers that should be hired to make the product. But in the real world, what we observe is that we do not only need these 4 workers, but we probably also need a supervisor and probably, also a supervisor to look after or supervise the supervisor.

Why is that so? So, this is because of things such as moral hazard. Moral hazard is "the tendency of a person, who is imperfectly monitored to engage in dishonest or otherwise undesirable behaviour". It is the tendency of a person and a person who is imperfectly monitored.

When we were making these models, we never talked about monitoring. So, this is something that we had left out throughout our understanding of economics, because we were taking people to be rational beings, we were taking everybody to be honest people. But in the real world, things are a bit different; sometimes things are very different because of things like moral hazard.

If people are not perfectly monitored, then it is possible that they will engage in dishonest or otherwise, undesirable behaviour. In other words, what we are saying here is that even when you have these 2 workers and in theory, they should be giving out this output of 90 units of products in an hour. In a number of cases, if they are not properly supervised, they will not make this.

There will be a number of situations in which workers might try to steal or workers may just spend their time or waste their time and do nothing. And when a worker does that? That is not because of economics because the worker would or if we consider that the worker is a rational person making rational decisions, then in that case, this person should not loiter away his or her time. Because time is money.

The time that is spent on loitering could perhaps be spent on a more productive thing. And we all have a dearth of time in our lives, we all have a particular life expectancy. So, any time that we waste is a time that we are losing out of our life. It is a loss. Now, a rational person would never lose his or her time, would never waste his or her time.

But in the real world, we find that quite a number of people waste their time and this may result in things such as moral hazard. Now, when we are talking about moral hazard, we are trying to bring in the behaviour of people into our understanding. So, this is behaviour and economy.

We are not just talking about a mathematical model of economics or a scientific model of economics, we are also taking into account what is the behaviour of people? So, moral hazard is the tendency of a person, who is imperfectly monitored to engage in dishonest or otherwise undesirable behaviour.

Why do people engage in such behaviour? This is because the worker knows more about how much work he or she is putting in, than his employer. Which means that, if the worker was to put up an effort and bring out 50 items of product per hour and if the worker is not doing that, if the worker is wasting away his time, in that case if the monitoring is not perfect or the monitoring is inadequate; then, the employer would not know by how much amount the the worker has shrugged in his responsibility.

Now, this is the information that the worker has. This is not information that the employer has. Why? Because if the output is less, the worker can always say- 'oh sir, the machine was not working or sir, there was a power cut'. Now, if the supervisor is not there, if the owner of the firm is not doing an adequate amount of monitoring, if he does not have access to the electricity logs or does not have a CCTV camera put in, then the owner might just not know what has happened.

And in such cases, the owner will have to take whatever the worker is saying at the face value. If the worker says- 'oh sir, I was working very hard, but what to do, this machine was not working'. The owner will have to take that in good humour; but the worker actually knows whether it was the machine that was not working or whether he was just passing away his time.

This is information that is with the worker only, it is not there with the owner or the supervisor. And this permits the worker to engage into dishonest or undesirable behaviours. So, the primary cause is that the worker knows much more about how much work he or she is putting in, than the employer.

The uninformed party, that is the employer would like to know, but the informed party or the employee may have an incentive to conceal the information. Why? Because if the owner comes to know that this particular worker is a lazy person, he does not work properly, then this worker may get fired. So, in this case, it is in the best interest of the worker to hide this information and he will do all sorts of things to hide this information.

This is a moral hazard and moral hazard is occurring because of asymmetric information. "A difference in the access to knowledge that is relevant to an interaction". Asymmetric information is the difference in access to knowledge, which means that one person has more knowledge or more access to knowledge and another person or another party has less access to knowledge or has less information less knowledge. And what sort of knowledge?

A knowledge that is relevant to an interaction. That is, in the case of things such as the principal agent relationship, which occurs between an employer and an employee. The relevant information here is how much amount of effort the worker or the employee or the employee is actually putting up. Now, this is a relevant information because this can be used to find out how much amount of wage should be given to this person; does this person deserve an increment or does this person ah deserve a punishment.

Now, this is very relevant information. But then one party, the employee himself, has more access to this information, because he knows how much effort he is putting up and how much time he is wasting. But the second party in this interaction is the relationship between the employer and the employee, so the second party which is the employer does not have access to this information and this results in an asymmetric information.

That is, one party has more information; the second party has less information. And whenever we have a situation of asymmetric information, we start to observe problems. Problems such as moral hazard or problems; such as adverse selection: a situation where a buyer is at a risk of being sold goods of low quality; such as a used car market.

Now, if somebody goes to a used car market to buy a car, then the sales person in that used car market has much more information about the car that he is selling than the person who has gone to buy the car. Now, whenever somebody goes to buy a car, this person will not spend say ages to find out each and everything about the particular vehicle. Now, some things may be obvious, but some things might not be that obvious.

Perhaps there is some malfunction in the vehicle; but the sales person knows about this information that there is a malfunction in this vehicle in such and such a portion. But then, the buyer or the prospective buyer, who has gone to see this vehicle does not know that and so, this ah buyer is at an adverse situation, when it comes to the information. Here again, there is an information asymmetry.

The salesperson knows more, the sales person has a greater amount of information; the prospective buyer has a lesser amount of information. So, there is an information asymmetry. Now, this information asymmetry may result in an adverse selection, which means that the buyer may choose not the best vehicle; but may choose an adverse vehicle, that is not that good.

And the buyer is not choosing an adverse vehicle because he wants to have a not so good car. But the buyer has got less options because he has a dearth of information. Even if he wanted to check everything, he would not have sufficient time or would not have sufficient expertise to check each and every part of the vehicle.

So, things such as these are related to asymmetric information and may result in adverse selection; a situation where a buyer is at a risk of being sold goods of low quality. And when we have these situations in a number of cases, they increase the cost of the transaction. Now, remember that when we talked about the surplus, when we talked about the total surplus, we had said that the cost should be low.

Because when the costs are low, then the welfare is maximized, the surplus is maximized. But the problem with Edward with asymmetric information is that it increases cost because the uninformed party has to put in effort to get the information out. Such as go for better monitoring, install a CCTV camera, employ more number of supervisors.

Now, supervisors are something that we had not considered, when we were looking at the microeconomics of the firm. Because we just said that ok one person is giving out so much output and so, so many people must be hired for it. But then, to make a way for this point that the person might not be working to their fullest or maybe engaging in an undesirable behaviour, the employer might have to install a CCTV camera.

Now, when the employer installs a CCTV camera, then it increases the cost of production because somebody will have to pay for this CCTV camera installation and run. And so, these costs will be recuperated from the sale of the thing because this is an addition or an additional input that the owner has to make.

Similarly, the owner may employ a few supervisors. Now, the salary of those supervisors is a

cost that is being added to the cost of production and so, the surplus of the producer would go down because his costs are increased. Another option is to pay above equilibrium wages such as efficiency wages.

So, paying of above equilibrium wages is another way to solve the moral hazard; but then, this also increases the cost or the owner might say that, 'ok, we will go with for a delayed payment', which means that ah the owner might say that, 'ok we will give you ah a year-end bonus'.

This year-end bonus would ensure that the person has got more to lose. If the employee does not work that hard, then the employee might not know currently; but then, at the end of the year, the owner might always say that, 'this year, you did not work hard and so, I am not giving you the year end bonus'.

These are all ways to counter the problem, but all of these are also increasing the cost, they are also increasing the complexity. Similarly, we have measures to control the adverse selection; things such as avoiding the used car market. But then, if the market is avoided, it means that the market is being shut.

The market is not working and so, the surplus that this market could have provided is lost. That increases our deadweight cost to society because the market is not working. Another thing is that the prospective buyer might try to get the vehicle inspected by a third-party and especially, a third-party that is a prominent manufacturer.

Now, in this case also, the third-party might give out the correct information; but then there is a cost involved. The prospective buyer will have to pay to the third-party to get the vehicle inspected. So, all of these measures are increasing the cost, the cost of transaction and when the cost of transaction increases, it means that the surplus reduces.

In this context, we can always talk about signalling and screening. These are two ways to counter the problem of asymmetric information. Signalling, we have seen it before as well. It is "an action taken by an informed party to reveal private information to an uninformed party".

The difference between signalling and screening is that signalling is an action taken by an informed party, screening is an action taken by an uninformed party. And in both the cases, the motive is the same to get the private information out to the uninformed party or to induce the informed party to reveal the information.

In both the cases, the aim is to take the information out of the informed party and give it to the uninformed party so that this situation of asymmetric information gets solved. Now, signalling because it is done by the informed party, it can take forms of advertisement, good grades on the CV and so on.

When you make your CV and when you have good grades on your CV and when you give it to an employer, in that case you are giving a signal to the employer that yes you can have a look at my CV and I have had so good so many good grades; it means that I am a hard worker, I am a punctual person, I am an honest person.

A person who is not hard working will not be having those good grades and so, this acts as a very good signal. We had also seen that there are two characteristics of a good signal; 1 is that it should be costly to prevent rampant usage and it should cost less for the high-quality product and more for the low-quality product.

And which is why good grades become a very good signal, because a person who is not that hard working will find it very difficult to have good grades; whereas, a person who is hard working will find it very easy to have good grades. So, it is costlier for a not hard-working person to have this good grade on his CV to use as a signal; whereas, it is less costly for the hard worker to have good grades on his CV and use them as a signal.

Now, because of the differential costing that is involved, the differential amount of effort that is involved, grades become very good signals. In the case of screening, it is "an action taken by an uninformed party to induce an informed party to reveal the information". In this case, the uninformed party is doing something and that something is to induce the uninformed party to give out information about itself. So, I am just asking for a third-party check of a vehicle.

Now, if somebody goes to a used vehicle market, finds a vehicle that he likes and then asks that he wants to go for a third-party checking of this vehicle. Now, if the salesman says 'no, no, no sir; you do not require a third-party check, do not you trust me' or things like that, then it gives out information that there is something wrong with this vehicle.

Because of which the salesman does not want to go for a third-party check; whereas, if the sales person says, 'ok sir, you can call any mechanic and you can have a third-party check', then that would mean that the salesperson is much more honest with you or with the buyer. Now, another example is the medical examination of a person, who is coming for insurance.

When somebody comes to get medical insurance or life insurance, the insurance company generally asks that person to go for a medical examination, get a medical certificate about, how fit you are? So that the person, if he or she is having any underlying diseases that should come up and that would influence the rates at which the insurance will be provided to the person.

If somebody is healthy, then ah this person would not have a any hesitation to go for a medical examination; but if the person is having an underlying disease that he or she is trying to hide, so in that case, when the insurance company says that you should go for a medical examination, this person would say. 'no, no, no, why should I go for that; do not you see that I am a healthy person'.

If somebody tries to say that, 'no I do not want to do this, I do not want to go for a third-party examination or a medical examination', then this party is giving out an information because if everything was right, then why would this party ah want to avoid the examination and so, this becomes a form of screening. So, screening is an action that is taken by an uninformed party.

In this case, the buyer who is going into the used car market or the insurance company because they do not have the information and this action is to induce an informed party to reveal the information. Now, all these things come under the habit of behavioural economics. Behavioural economics is the subfield of economics that integrates the insights of psychology.

What we are doing in the case of behavioural economics is that we have certain insights from psychology about how people think, how people make decisions and we are incorporating those insights into our models to understand how people make decisions. When that is done, we say that we are doing behavioural economics and some psychological insights, that are incorporated are things like people are not always rational.

In our classical economics, we had assumed that people are always rational; but in this case, we

know from psychology that people are not always rational. So, we have to make space for that. Instead of going for maximization, they go for decisions that are 'good enough'.

That is, people do not try to maximize their welfare, they try to have a welfare that is good enough for them. So, till now, we had been concentrating on the maximization of welfare, maximization of surplus; but that is not something that always happens. Most of the time, people want to have a value that is good enough for them. The Reason is people are overconfident.

So, people do not want to go with lots of computations, to come up with the maximum; but they would say ok this is the amount that is good enough or just do this and you will get a good result. Because there are people who are over confident, they do not want to go into the computations because of their confidence or people give much weightage to a small number of vivid observations.

If there is a person who has observed that a particular vehicle did not perform that well. Perhaps, it was a friend's vehicle and this vehicle was not working that well. Now, this is very vivid information because this person has observed this vehicle from close quarters and the person might give an over emphasis to this piece of information.

When that happens, people might not go for the maximization of their welfare; but they would want to say that, 'ok this ah this vehicle I know that this vehicle it does not work well and so, I am not going to consider this vehicle at all'. Even though it is possible that it was just an isolated case, it was an isolated example and, on average, this vehicle performs very well; but still people go for decisions like that. People are reluctant to change their minds.

So, if somebody goes and tells a factory owner that, 'ok you are working in a region, where your marginal cost is greater than the marginal revenue; you need to cut down on production'. The person might react vehemently. The person might say, 'oh no, who are you to tell me' because people are reluctant to change their minds. People assume that whatever they are doing is the correct thing to do; people forget.

When we were talking about rationality, we were saying that people are taking all sorts of information and they are doing all the processing that is possible to come up with a rational decision. But then when people forget, then it is possible that some of the earlier inputs are not just taken into consideration at all. People are at times impulsive or confused or emotional.

So, people might just say that, 'ok, so such and such a person had told me that this is the right course and ah this person has always been guiding me very well. And so, I will just follow it. I will not do any sort of computation because I am very emotional, when it comes to the advice that is given by this person' or at times people make decisions when they are in anger, when they are feeling depressed.

In all these different situations people might not be in the best state to do a rational computation. People at times are impulsive, confused. When they are confused, they might not make rational decisions. People are often short sighted, they look for quick benefits, they look for ways to avoid the harms that are there in the near future. So, if there is a person, who is ah say smoking a lot.

So, this person knows that smoking is bad for health, smoking is injurious for health; but still this person will not be able to quit because this person is looking only for the short-term benefits. In

the short term, it gives a very good urge. It gives a very great amount of energy; people feel energetic when they have a cigarette.

In the long run, well, it does have its health consequences; but then people take decisions on the short-term basis because they are often short sighted. Another insight is that people care about fairness. Now, in a number of situations, we have observed that we can compute what is the wage that should be given to a person.

We can look at the supply of workers, we can look at the demand for workers and compute what is the equilibrium wage that should be provided to a worker. But then, people might even think, 'oh no, this is too less. How will this person survive on such a less amount of money' and so, people might want to give a higher wage.

This is not because people are doing a profit maximization, but because people are looking at fairness; is it fair enough to give such a small amount of wage to this person? People are inconsistent over time. They prefer instant gratification over sacrifice such as not saving enough for retirement.

In this case, people when they are getting money, when they are getting their wages, they can use it for an instant gratification to buy something or they can put it into a retirement corpus. But most of the people put a very small amount of money into their retirement corpus.

Even though they know that a time will come, when they will not be earning anything because they will be retired and at that time, these savings will be the largest source of support for them. But still, they do not do that. They do not put money into the retirement corpus.

This is because people prefer instant gratification; 'what can I have now because retirement period is after a very long period of time, so we will see what will happen at that time' is the sort of thought that people will have. So, people are inconsistent over time.

And the rationality is bounded which means that when we talk about rationality, when people are even doing all sorts of computations, they are trying to get all sorts of information, even then there is a limit to rationality. So, even when people are trying to do everything to get to a rational decision, they will not be able to or they might not be able to.

For example, how many times have you computed utility to rigorously maximize utility? Hardly anybody does such a sort of computation. Now, bounded rationality is "the theory that people can understand only a limited amount of information within a limited amount of time, and for this reason, they do not always make the best choices, especially in complicated situations", that is rationality is bounded by limited thinking capability.

Well, our brains are not evolved to make mathematical decisions in a majority of cases. Our brains are evolved to get food, to protect ourselves from predators, to get shelter and so on. Our brains are not evolved to do computations about what should be the surplus and so, we might have a limited cognitive capability to process the information.

So, even if we have all the information, we will not be able to process it. And especially, when the time is limited because a number of decisions have to be made in a short period of time and in that short period of time, it is possible that our processing capabilities are overwhelmed.

Rationality is also bounded by limited information because in certain cases, people are able to do the computation; but then, they do not have the raw materials, they do not have the raw data on

which to base the computation. If you want to go to say Dehradun or you want to go to Siliguri to spend your vacation, if you want to make this decision, you would want ah you would probably require all sorts of information that is there about Dehradun and Siliguri, but then you might not have access to that information. In a number of cases, people just make a decision out of their hunch because they have limited information and also, people have a limited time.

So, when time is limited, that can also limit rationality. And to solve the issue of bounded rationality, people make use of heuristics. Now, heuristics are rules of thumb. They are simple strategies or mental processes. The key point here is simple. A heuristic is something that is simple that is used to quickly form judgments, make decisions, and find solutions to complex problems.

When we are using heuristics - and we use heuristics a lot. Heuristics are rules of thumb that for such a question, we should approach through such a manner. So, these are simple strategies or simple mental processes, things such as divide and rule. When you come up with a very big sort of a problem, what you do is you divide the problem into smaller bits and you try to solve each and every small bit one by one.

This sort of a decision-making process, this sort of a strategy that you take to solve a complex problem by dividing it into a number of smaller problems, this is heuristics. Because this is a simple strategy, this is a simple mental process used to quickly form judgments or make decisions or find solutions. Now, here the key point is quickly. They are used because they are fast and in a number of situations, we do not have sufficient time to make a decision.

Heuristics help us. Example, things like affect heuristic. Affect is emotion. So, affect heuristic is a heuristic or a rule of thumb that is based on emotions. It is a "mental shortcut using emotion or gut feeling to influence a decision". So, you are not doing the computation, you are just using your emotion or the gut feeling to make a decision such as a person buying an SUV, just because he or she feels an attachment due to its look.

People use this because they might not have sufficient information or processing capability or time to make a rational decision. So, while a rational person would have done a thorough cost benefit analysis; but a person who is making a decision based on the emotion or the gut feeling, does not do this cost benefit analysis, but just buys whatever he or she feels an attachment due. This is an affect heuristics.

Another example is availability heuristic. It is a rule of thumb or a shortcut based on availability of information. A "mental shortcut using ease with which examples come to the mind to influence the decision". Example, a person not buying a particular car just because he or she has a friend with this model and the friend's car gives problems. A rational person would have done a thorough cost-benefit analysis, for this could be just an isolated example.

Another example is the effort heuristic; how much amount of effort do you put into doing something. It is a "mental shortcut using perceived amount of effort to determine the worth of something" and an example is that 100 rupees earned is perceived to have much more value than 100 rupees found, or gifted and spending decisions reflect this perception.

A rational person would have determined that these are perfect substitutes. What is happening here is that if you are earning something, if you are putting an effort into doing something, you

put a larger value on it; but if you were given this thing, the same thing by somebody or you found it lying somewhere, then you do not put that higher value to it.

For example, a 100 rupees that is earned is perceived to have a much greater amount of emotional value because of which people will try to hold on to this 100 rupees, they will not be spending it that easily; they will be spent thrifts; whereas, a 100 rupees that has been gifted by somebody will not be having that high and emotional value. So, people will spend it much more easily.

They will not do a very large amount of rational decision making when it comes to that 100 rupees that is gifted. Now, this is an example of an effort heuristic. Another example of heuristics or heuristic decision making is escalation of commitment. It is a "mental shortcut justifying increased investment in a decision because the prior investment was made".

Now, here again people are not doing rational decision making, they are just using a mental shortcut to justify increased investment in a decision. Example is a person buying a used car for 2,40,000 rupees, spending 40,000 on it for repairs and still allotting 50,000 rupees more for repairs, when a new car could be bought for 3,00,000 rupees.

Now, in this case, the person bought this car for 2,40,000 thinking that it is less than 3,00,000; the person has already spent 40,000 rupees. So, now, the amount that has been spent is 2,80,000. But now, the person is still allotting 50,000 rupees more for the repairs. So, if this amount is spent, the total amount will be 30,000 more than the price of a new car.

But still the person is justifying this investment because a prior investment was already made. So, the person would think that because I have already spent 2,80,000 rupees. So, 50,000 more is not that high a price or that high an investment. Now, a rational person would have determined that the earlier investment is a sunk cost, which means that it is a cost that was incurred and cannot be recovered back.

So, when you are spending the next 50,000 rupees, you should think, 'oh should I spend this 50,000 rupees on a second hand car or should I just sell this vehicle off and buy a new car. Because at least in that case, I will not have to do this spending again and again and again, because a new car will not give me that amount of problems and even if some problem comes, it will come under warranty'. But you do not take that decision.

People just think that, 'ok because I have already spent 2,80,000 rupees, so let me spend just 50,000 rupees' whereas, they could have sold this earlier vehicle and got a new car. Now, this is an example of escalation of commitment heuristics. Now, in this case people are not doing the computation about what is best for them; but they are just thinking that because an earlier investment was made, we should do the next investment.

This is a shortcut. Now, remember that when we talk about shortcuts in certain cases they help; but in a large number of cases, they also harm us because they give us a solution that is fast that does not involve a lot of information processing, but that at times also does not give us the most efficient outcome. It does not maximize our surplus that could have been possible, if we went for rational decision making.

Another example is a familiarity heuristic. A "mental shortcut preferring familiarity over unknown". Example, a person buying a particular car just because he or she has had a car of this

make at home during childhood. Now, a rational person would have done a thorough cost benefit analysis; but what a number of people do is that, 'ok my dad bought a car from this company. So, I should also buy a car from this company because I am familiar with this car'.

Now, it is possible that with time, new technologies have come up and a car of some other company is now giving a much better safety, much better service, much better mileage than a car of the previous company. But still people take the car of the previous company because they know this car.

This is a familiarity heuristic. It allows for a quick decision making without a lot of computation, but being a shortcut, it does not give the most optimum results. And because of these bounded rationality and heuristics, we have cognitive biases. Cognitive bias is "a systematic pattern of deviation from the norm or rationality in judgment".

In all of these cases, what we are observing is that there is a deviation from the norm or rationality. That is, the optimum was something else; but because of our way of thinking, we chose something else. This is an example of cognitive biases. Cognition refers to the process of thinking. So, this is a bias in thinking, a systematic pattern of deviation from the norm or rationality in judgment.

Because of bounded rationality, we have evolved several cognitive biases, they distort our thinking process and lead to more irrational decision making. Now, in this case, we are asking the question that if people have these cognitive biases, what kinds of impacts do they have on the decision?

Now, this is something that is not inside the purview of classical economics; but here, we are making rules from our insights from psychology to understand how people are making decisions. Because remember that economics is the science of decision making. So, what are these cognitive biases? Confirmation bias: favouring information conforming to existing beliefs, and discounting evidence that does not conform to it.

Example, if A thinks that B is a bad person, he will only consider that information about B that shows him in a bad light, while ignoring or discounting the good traits. What happens in the case of confirmation bias is that we already have a preconceived notion about something and whenever we see something, whenever we get new information, we see the new information in the light of our preconceived notions.

A very good example in the case of conservation is that there are people, who think or who have this preconceived notion that we can either go for development or we can go for conservation. Now, if you tell these people that, no if you go for conservation, this will also help in your development.

A very good example is underpasses. So, if you construct underpasses, you will also make your roads much safer and people will also be able to drive on the road at much higher speeds because there is no risk of a wild animal getting on the road and hitting the vehicle.

Now, rationally, if you think about it, yes it makes quite a good sense because the cost that is involved in making an underpass is not that great. But then, people with this preconceived idea that no conservation is anti-development would just say, 'no, no, no, no, we are development people, we are not conservation people'. As if conservation and development are two very

different things.
This is a confirmation bias. Whenever they see an information that through conservation, people led to development that if in an area when a national park was built or constructed, the people in the locality had a very large jump in their median incomes. If they get, if they see such information, they will just discount it; they will just think, 'oh, this is one of them, this does not always happen'.
But if they get any information about conservation and especially that conservation that was not well executed, that led to some difficulties; then, they would always keep this in mind and say 'oh, this is why we should not do conservation'. So, this is a confirmation bias.
Favouring information conforming to the existing belief and discounting everything else. Another is halo effect; tendency for positive impressions in one area to positively influence one's opinion or feelings of one in other areas. Example Apple's iPod is good, so Apple should be good for other devices as well.
What is happening is that because somebody has a positive impression about something in one area, this person thinks that 'oh this is the thing that is true for every other thing as well'. A good example is that again if you talk about roads. Now, if some person saw that ok a road was built between two cities and that increased the welfare of the people because they were now able to move from city A to B and back in a much quicker manner.
Now, these people would think that no roads are good for people. Let us make roads everywhere; even if it is a national park, let us make a road inside it. In a number of cases, we can observe that there are roads inside national parks that nobody is using; but still there was some person who made this road because they thought that, 'ok roads are good for people, so let us make roads', that is the halo effect.
A positive thing in one aspect is taken to be a positive thing for everything else. Horn effect: tendency for a single negative trait to negatively influence one's opinion of feelings in other areas. A person is not wearing clothes properly, so the person must also be lazy. Well, it is possible that this person is just coming out of a train with a very long journey.
So, this person is not looking very sharp, but that does not mean that this person is lazy. But what people do is they just take one thing and put the same feeling to every other trait so, in the case of the horn effect, the tendency for a single negative trait to negatively influence one's opinion or feelings in other areas.
In the case of conservation, we have observed examples in which when a national park was built and there were say in a village of say 1000 of 100 families, 95 families wanted to move out. Because in any case who wants to live in the center of a jungle surrounded by animals.
So, everybody wants to be a part of the mainstream and whenever a national park is made, then people are given a very large sum of money as compensation to move on and we have ah this thing that ah moving out has to be voluntary. You cannot force anybody to move out. It is a voluntary decision that people made. Now, 95 ah families decided that they wanted to go out and they made use of this opportunity. But there were 5 families who for some reason wanted to stay inside.
Now, a person who is using the horn effect would just look at those 5 families and flash it on the

media and say that, 'oh see, these are the 5 people and they wanted to live inside, but everybody has left them'. And so, conservation is bad, we should not be making any national parks. That is a horn effect. This is again a cognitive bias. Because in this case, we are not looking at the benefits that the national park is providing to people.

We are not looking at those 95 people or 95 families who wanted to move out voluntarily and at least got this option through the construction of the national park. No, we just look at one negative thing and we spread that negativeness everywhere, negativity everywhere. Another is fundamental attribution error: a tendency to differentiate situational and innate attributions for self and others.

That is, "if I came late, it is because of the heavy traffic" which means that if I am doing anything late, if I am not doing anything good, then it is because of the situation; it is not because of me. I am good; but the situation was bad. But "if he came late, it is because he is lazy." So, for other people, we say that if anything negative has happened, it is because those people are lazy people, those people do not work properly.

But if we are not doing something properly, we will say oh this is not because of me this is because of the situation. This is a fundamental attribution error, a cognitive bias. Priming: exposure to one stimulus influencing response to another stimulus, which may or may not be related. The look of a well-set restaurant enhances the taste of food.

Now, what is a well-set restaurant look, what to do with the taste of food? But then, this one stimulus influences the response to another stimulus. Affinity bias: bias towards people like ourselves or people with the same language or from the same region. We have observed that this is a major reason for discrimination in the labour market.

But still people do it. Self-serving bias: a tendency to claim more responsibility for success than for failures. "I topped because I worked hard; but then, if I failed it was because the examiner was biased". So, we are always self-serving. Framing effect: people decide based on whether the options are presented with positive or negative connotations.

"A treatment with 30 percent probability of saving lives" is preferred over "a treatment with 70 percent probability of death". Now, look at both of these, both of these mean the same thing; 30 percent survival is 70 percent death. But then, if you present it in a positive sense, then people like it more. This is the bias.

Hindsight bias: a tendency to perceive events that have happened as having more predictability than they actually had. So, in hindsight, people would say "he should have known that doing this would damage the machine". He should have known, but then they discount the fact that this person - had they known that it would destroy the machine - they would not have done that.

Because in hindsight, it is easy to see things; but in the foresight, it is difficult. Gambler's fallacy: a tendency to perceive that certain events occurred more frequently than normal in the near past, then they will occur less frequently than normal in the near future.

"I lost five times in a row, so now, I will win". Now, in such cases, people and in a number of cases, they lose out like anything. Because a gambler always thinks that, 'ok five times, I have not won, the sixth time, I will win; the sixth time when he again loses, he will think, oh I have lost for six times, in the seventh time, I will win' this is a cognitive bias.

Optimism bias: a tendency by persons to perceive that they will be spared from the negative events. So, people are very optimistic. "I won't suffer from a car crash, so I do not need to wear a seat belt" as if the person is something out of the world, then they would not suffer from a car crash. This is an optimism bias. Herd mentality: a tendency to perceive certain decisions to be correct, just because many people are making those decisions.

So, "everybody is buying this company's stock, so I should also buy"; everybody is buying a car of this particular make, so I should also buy. Now, when we look at all these sorts of psychological attributes to decision making, it also has an impact on economics and it also has an impact on conservation.

In a number of cases, if people just sat down for two minutes and thought about things rationally, things would improve. People would come to the conclusion that 'yes, we have to work for development and we have to work for conservation', but without rational thinking, what people do is whatever has been happening, let us do that only. When that happens, that leads to a number of wrong decisions.

This is something that needs to be kept in mind. Rationality is bounded and if you know that rationality is bounded, you will be working more towards ensuring that no you are not taking everything for granted, you are not working in a herd mentality that because everything, because everybody took this decision, so I should also make this decision. So, this is something that needs to be kept in mind.

That is all for today. Thank you for your attention. Jai Hind!